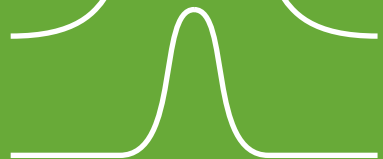


SUPPORTING
MATERIAL :
HORST KESSLER
PUBLICATIONS
LIST



Horst Kessler publications list

- [1] E. Müller, H. Kessler, H. Fricke, H. Suhr: Homologisierung von 5-Ringaromaten mit Diazomethan. *Tetrahedron Lett.* **1963**, 1047 – 1049.
- [2] E. Müller, H. Fricke, H. Kessler: Homologisierung von Aromaten mit Diazomethan und Kupfersalzen. *Tetrahedron Lett.* **1963**, 1501 – 1503.
- [3] E. Müller, H. Kessler, H. Fricke, W. Kiedaisch: Kupfersalz-katalysierte Homologisierung von Benzolderivaten mit Diazomethan zu Cycloheptatrien-Derivaten. *Liebigs Ann. Chem.* **1964**, 675, 63 – 73.
- [4] E. Müller, H. Fricke, H. Kessler: Über die katalysierte Homologisierung von Naphthalin und Phenanthren mit Diazomethan. *Tetrahedron Lett.* **1964**, 1525 – 1530.
- [5] E. Müller, H. Kessler, H. Suhr: Die katalysierte Homologisierung des Phenanthrens mit Diazomethan zum Dibenzonorcaradien. *Tetrahedron Lett.* **1965**, 423 – 428.
- [6] E. Müller, H. Kessler: Die kupfersalzkatalysierte Homologisierung von Pyren mit Diazomethan. *Tetrahedron Lett.* **1965**, 2673 – 2675.
- [7] E. Müller, H. Kessler: Katalysierte Homologisierung von Anthracen mit Diazomethan. *Liebigs Ann. Chem.* **1966**, 692, 58 – 65.
- [8] E. Müller, H. Kessler, B. Zeeh: Katalysierte Diazoalkan-Reaktionen. *Fortschr. Chem. Forsch.* **1966**, 7, 128 – 171.
- [9] A. Rieker, H. Kessler: Sterische Hinderung und Isomerisierung der CN-Doppelbindung in Chinonanilen, NMR- und UV-Untersuchungen. *Z. Naturforsch.* **1966**, 21 b, 939 – 941.
- [10] H. Kessler: *Kupfersalzkatalysierte Diazomethanreaktion mit Aromaten*. Dissertation, Universität Tübingen, **1966**.
- [11] H. Kessler, E. Müller: Dünnschichtchromatographische Trennung mehr-kerniger Aromaten mit Pikrinsäure als Komplexbildner. *J. Chromatogr.* **1966**, 24, 469 – 473.
- [12] H. Kessler, A. Rieker: Direkter Nachweis der Rotation um die zentrale C-C-Doppelbindung im 3,3',5,5'-Tetra-tert.-butyl-diphenochinon-(2,4) durch NMR-Spektrometrie. *Tetrahedron Lett.* **1966**, 5257 – 5262.
- [13] H. Kessler, E. Müller: NMR-Spektren der Alkylcycloheptatriene. *Z. Naturforsch.* **1967**, 22 b, 283 – 285.
- [14] A. Rieker, H. Kessler: Nachweis von cis-trans-Isomeren am Benzol. *Tetrahedron Lett.* **1967**, 153 – 156.
- [15] A. Rieker, H. Kessler: NMR-Studien an Chinonanilen. Der Einfluß para-ständiger Substituenten im Phenylring auf die thermische Isomerisierung. *Tetrahedron* **1967**, 23, 3723 – 3732.
- [16] H. Kessler, A. Rieker: Cis-trans-Isomere bei kernsubstituierten Acetaniliden. *Z. Naturforsch.* **1967**, 22 b, 456 – 457.
- [17] H. Kessler, A. Rieker: cis-trans-Isomerie bei Kern-substituierten Acetaniliden. *Liebigs Ann. Chem.* **1967**, 708, 57 – 68.
- [18] H. Kessler: Magnetische Nichtäquivalenz geminaler Gruppen durch Rotations-hinderung in achiralen Molekülen. *Tetrahedron* **1968**, 24, 1857 – 1867.
- [19] H. Kessler: Stereoselektive Ätherbildung durch Dehydratisierung von Diolen. *Tetrahedron Lett.* **1968**, 1461 – 1464.
- [20] H. Kessler: Inversion am doppelt gebundenen Stickstoffatom in Phenylguanidinen. *Tetrahedron Lett.* **1968**, 2041 – 2045.
- [21] A. Rieker, H. Kessler: Untersuchungen zur innermolekularen Beweglichkeit in para-Chinonmethiden und in den entsprechenden Phenoxyvorstufen. *Tetrahedron* **1968**, 24, 5133 – 5144.
- [22] H. Kessler, A. Rieker, W. Rundel: Slow Rotation around Benzene-Oxygen and Benzene-Sulphur Bonds in Aromatic Ethers, Sulphides, and Disulphides. *J. Chem. Soc., Chem. Commun.* **1968**, 475 – 476.
- [23] E. Müller, H. Kessler: Kupfer-I-Salz-katalysierte Diazomethanreaktion mit Hexamethyldewarbenzol. *Tetrahedron Lett.* **1968**, 3037 – 3040.
- [24] H. Kessler, W. Rundel: Konformation und gehinderte Rotation in Disulfiden und Diseleniden. *Chem. Ber.* **1968**, 101, 3350 – 3357.
- [25] A. Rieker, N. Zeller, H. Kessler: Nonhydrogen Tautomerism and Other Chemical Rate Processes in Cyclohexadienones. *J. Am. Chem. Soc.* **1968**, 90, 6566 – 6567.
- [26] H. Kessler, B. Zeeh: Magnetische Nichtäquivalenz und Konformation in Äthyl-, Benzyl- und Isopropyl-substituierten 3H-Indolen. *Tetrahedron* **1968**, 24, 6825 – 6831.
- [27] H. Kessler, H. Möhrle: Zur Struktur einiger Hydroxy-piperidon(2)-Derivate. *Z. Naturforsch.* **1969**, 24 b, 301 – 306.
- [28] H. Kessler, V. Gusowski, M. Hanack: Sessel-Twist-Konformationsgleichgewicht im cis-1,2-Ditert.-butylcyclohexan. *Tetrahedron Lett.* **1968**, 4665 – 4670.

30.10.2023.
Supporting
material for the
autobiography
of Horst Kessler
[792].

- [29] H. Kessler, A. Moosmayer, A. Rieker: Das Ausmaß sterischer Hinderung in substituierten Triarylmethanen und Triarylmethyl-Radikalen. *Tetrahedron* **1969**, *25*, 287 – 293.
- [30] H. Kessler: Kopplungskonstanten und chemische Struktur. – in: „NMR-Spektroskopie – Eine Einführung mit Übungen“ (Ed.: H. Friebolin) Verlag Chemie, Weinheim **1974**, 41 – 59.
- [31] H. Kessler, D. Leibfritz: Isomerisierungen an der CN- und CS-Doppelbindung in Guanidinium- und Thiuroniumsalzen. *Tetrahedron Lett.* **1969**, 427 – 430.
- [32] A. Rieker, H. Kessler: Notiz zur Rotationsisomerie bei p-Diphenochinonen. *Chem. Ber.* **1969**, *102*, 2147 – 2149.
- [33] A. Rieker, W. Rundel, H. Kessler: Die Unterscheidung ortho- und para-chinoider Strukturen. *Z. Naturforsch.* **1969**, *24b*, 547 – 562.
- [34] H. Kessler: Detection of Hindered Rotation and Inversion by NMR Spectroscopy. *Angew. Chem., Int. Ed. Engl.* **1970**, *9*, 219 – 235; *Angew. Chem.* **1970**, *82*, 237 – 253.
- [35] A. Rieker, H. Kessler: Sterisch gehinderte Rotation um sigma-Bindungen. *Tetrahedron Lett.* **1969**, 1227 – 1230.
- [36] H. Kessler, D. Leibfritz: Untersuchungen zur Inversion am doppelt gebundenem Stickstoffatom am Beispiel der Tetramethylguanidine. *Tetrahedron* **1970**, *26*, 1805 – 1820.
- [37] H. Kessler: Strukturaufklärung durch NMR-Spektroskopie I und II. *Mitt. Dtsch. Pharmaz. Ges.* **1969**, *39*, 177 – 220.
- [38] H. Kessler, H. O. Kalinowski, C. v. Chamier: Mesomere Kationen, I. Die Synthese von S-Aryl-thiuroniumsalzen. *Liebigs Ann. Chem.* **1969**, *727*, 228 – 230.
- [39] H. Kessler, D. Leibfritz: Lösungsmiteleinflüsse auf die Stickstoffinversion in Guanidinen – Rotationen um CN-Einfach- und CN-Doppelbindungen in Guanidiniumsalzen. *Tetrahedron* **1969**, *25*, 5127 – 5145.
- [40] H. Kessler: Lineare Hammett-Korrelation von Aktivierungsbarrieren der Rotation um CC-Doppel- und -Einfachbindungen und CN-Einfachbindungen in Ketenaminalen. *Chem. Ber.* **1970**, *103*, 973 – 985.
- [41] H. Kessler, D. Leibfritz: Vergleich der Inversionsgeschwindigkeiten am doppelt gebundenen Stickstoff in Guanidinen und Imdazolidinimininen. *Liebigs Ann. Chem.* **1970**, *737*, 53 – 60.
- [42] H. Kessler, D. Leibfritz: Magnetische Nichtäquivalenz als Beweis für die Inversion am Stickstoff in Iminen. *Tetrahedron Lett.* **1970**, 1423 – 1426.
- [43] H. Kessler, D. Leibfritz: Konformation und Rotationsbarrieren in N,N'-Diarylthioharnstoffen. *Tetrahedron Lett.* **1970**, 1595 – 1598.
- [44] D. Leibfritz, H. Kessler: Hammett Correlation of Inversion Barriers in the syn-anti-Isomerization of Imino-carbonates. *J. Chem. Soc., Chem. Commun.* **1970**, 655 – 657.
- [45] H. Kessler: Optische Aktivität und Inversion in der 5. Hauptgruppe des Periodensystems. *Naturwissenschaften* **1971**, *58*, 46 – 51.
- [46] H. Kessler, H. O. Kalinowski: Synthese aliphatischer und aromatischer Isouroniumsalze. *Liebigs Ann. Chem.* **1971**, *743*, 1 – 9.
- [47] H. Kessler, H. O. Kalinowski: syn-anti-Isomerism at the Carbon-Sulfur Double Bond in Isothiouronium Salts. *Angew. Chem.* **1970**, *82*, 666 – 667; *Angew. Chem., Int. Ed. Engl.* **1970**, *9*, 641 – 642.
- [48] H. Kessler: Methoden zur Herstellung und Umwandlung von Cycloheptatrienen. In *Houben-Weyl – Methoden der organischen Chemie*, Band V/1d (Ed.: E. Müller), Thieme, Stuttgart, **1972**, 302 – 416.
- [49] H. Kessler, D. Leibfritz: Inversionsbarrieren der pyramidalen Inversion in N-Halogen-substituierten Stickstoffverbindungen. *Tetrahedron Lett.* **1970**, 4289 – 4292.
- [50] H. Kessler, D. Leibfritz: Stabilisierung der Stickstoff-Pyramide durch Substitution mit Sauerstoff. *Tetrahedron Lett.* **1970**, 4293 – 4296.
- [51] H. Kessler, D. Leibfritz: Der Einfluß benachbarter Stickstoffatome auf die Inversionsbarriere und die Natur des beobachteten Prozesses in N-Methyl- und N-Chlor-Piperidin. *Tetrahedron Lett.* **1970**, 4297 – 4300.
- [52] H. Kessler, D. Leibfritz: Mechanismus der syn-anti-Isomerisierung in Iminen. Diastereotopie und Enantiotopie. *Chem. Ber.* **1971**, *104*, 2143 – 2157.
- [53] H. Kessler, D. Leibfritz: Hammett-Beziehung und sterische Einflüsse auf die Rotationen um partielle CN-Doppelbindungen in aromatischen Guanidiniumsalzen. *Chem. Ber.* **1971**, *104*, 2158 – 2169.
- [54] H. Kessler, P. F. Bley, D. Leibfritz: Planare Stickstoffinversion in Imino-kohlensäureestern und Iminodithiokohlensäureestern. Einfluss der Substitution am Iminokohlensstoff auf die Inversionsgeschwindigkeit am Stickstoff. *Tetrahedron* **1971**, *27*, 1687 – 1697.
- [55] G. Binsch, E. L. Eliel, H. Kessler: Nomenclature for Intramolecular Exchange Processes. *Angew. Chem., Int. Ed. Engl.* **1971**, *10*, 570 – 572; *Angew. Chem.* **1971**, *83*, 618 – 619.
- [56] H. O. Kalinowski, H. Kessler: Fast Isomerization About Double Bonds. In *Topics in Stereochemistry*, Vol. 7 (Eds.: N. L. Allinger, E. L. Eliel). John Wiley & Sons, Hoboken (NJ), **1972**, 295 – 383.

- [57] H. O. Kalinowski, H. Kessler, D. Leibfritz, A. Pfeffer: Lösungsmittel- und säurekatalysierte Z,E-Topomerisierung eines Hydrazons. *Chem. Ber.* **1973**, *106*, 1023 – 1032.
- [58] H. Kessler, D. Rosenthal: Z,E-Isomerie aromatischer Diazoketone. *Tetrahedron Lett.* **1973**, 393 – 396.
- [59] R. Bicker, H. Kessler, A. Steigel: Synthesis of endo-exo-Tetracyclo-[3.3.1.0^{2,4}.0^{7,8}]nonan-9-ones and the Unusual Course of Their Ketal Hydrolysis. *Tetrahedron Lett.* **1973**, 2371 – 2374.
- [60] H. Kessler, A. Walter: Direct Observation of the Dissociation Equilibrium of Tropylium Salts. *Angew. Chem., Int. Ed. Engl.* **1973**, *12*, 773 – 774; *Angew. Chem.* **1973**, *85*, 821 – 822.
- [61] M. Branik, H. Kessler: Zur Konformation geschützter Aminosäuren. I. NMR-Untersuchungen von t-BOC-Glycin. *Tetrahedron* **1974**, *30*, 781 – 786.
- [62] H. O. Kalinowski, H. Kessler, A. Walter: Einfluß des Lösungsmittels auf die Rotation um die CC-Doppelbindung in Ketenaminalen. *Tetrahedron* **1974**, *30*, 1137 – 1144.
- [63] H. Kessler, M. Molter: Dynamic NMR Measurements of Boc-amino Esters with Application of Lanthanoid Shift Reagents. *Angew. Chem., Int. Ed. Engl.* **1973**, *12*, 1011 – 1012; *Angew. Chem.* **1973**, *85*, 1059 – 1060.
- [64] H. O. Kalinowski, H. Kessler: Correlation of the ¹³C-NMR Chemical Shifts of Carbonyl and Thio-carbonyl Groups. *Angew. Chem., Int. Ed. Engl.* **1974**, *13*, 90 – 91; *Angew. Chem.* **1974**, *86*, 43 – 45.
- [65] H. O. Kalinowski, H. Kessler: Mesomere Kationen. ¹³C-Fourier Transform-NMR-Spektren von Harnstoffen, Thioharnstoffen und Guanidinen. *Org. Magn. Reson.* **1974**, *6*, 305 – 312.
- [66] H. Kessler: Thermal Isomerization about Double Bonds – Rotation and Inversion. *Tetrahedron* **1974**, *30*, 1861 – 1870.
- [67] H. Kessler, W. Ott: Synthese von substituierten Homotropilidenen durch Homo-1,4-Eliminierung. *Tetrahedron Lett.* **1974**, 1383 – 1386.
- [68] H. Moehrl, J. Tenczer, H. Kessler, G. Zimmermann: Die Struktur von Philocarpin-Salzen. *Arch. Pharm.* **1975**, *308*, 11 – 22.
- [69] H. Kessler, M. Molter: The Contact Contribution in the Lanthanoid-Induced Shift of ¹³C=O-NMR Signals. *Angew. Chem., Int. Ed. Engl.* **1974**, *13*, 537 – 538; *Angew. Chem.* **1974**, *86*, 552 – 553.
- [70] H. Kessler, M. Molter: Use of the Eu(fod)₃-Induced Shift for Determination of the Complexation Site and for Signal Assignment in the ¹³C-NMR Spectra of Protected Dipeptides. *Angew. Chem., Int. Ed. Engl.* **1974**, *13*, 538 – 539; *Angew. Chem.* **1974**, *86*, 553 – 554.
- [71] R. Bicker, H. Kessler, A. Steigel: Ungewöhnlicher Verlauf einer Acetalhydrolyse bei einer Homotropiliden-Synthese. *Chem. Ber.* **1974**, *107*, 3053 – 3069.
- [72] H. O. Kalinowski, H. Kessler: Mesomere Kationen. ¹³C-NMR-Spektren von Uronium-, Thiouronium- und Guanidiniumsalzen, sowie einigen Guani-dinen. *Org. Magn. Reson.* **1975**, *7*, 128 – 136.
- [73] M. Branik, H. Kessler: NMR- und IR-Untersuchungen von Boc-L- α -Amino-säuren. *Chem. Ber.* **1975**, *108*, 2176 – 2188.
- [74] R. Bicker, H. Kessler, A. Steigel, W. D. Stohrer: 3-Methylhomotropiliden. Synthese und Lage des Gleichgewichtes. *Chem. Ber.* **1975**, *108*, 2708 – 2721.
- [75] M. Branik, H. Kessler: NMR- und IR-Untersuchungen von Boc- ω -Amino-säuren. *Chem. Ber.* **1975**, *108*, 2722 – 2727.
- [76] R. Bicker, M. Kempf, H. Kessler: Eine verbesserte Synthese von Norbornadienon-dimethylacetal. *Synthesis* **1975**, 427 – 428.
- [77] R. Bicker, H. Kessler, W. Ott: ¹³C-DNMR-Untersuchungen zur Kinetik der Valenzisomerisierung von 3,4-Homotropiliden und seines 3-Methylderivates. *Chem. Ber.* **1975**, *108*, 3151 – 3158.
- [78] M. Feigl, H. Kessler: NMR-spektroskopische Untersuchungen zur Kinetik und Thermodynamik reversibler Dissoziationsreaktionen. Chlortropyliumchlorid-chlorsubstituierte 7-Chlorcycloheptatriene: Gleichgewichte und Halogenwanderung. *Tetrahedron* **1976**, *32*, 1575 – 1579.
- [79] H. Kessler, M. Molter: Application of Lanthanoid Shift Reagents for Conformational Studies of tert-Butoxycarbonyl α -Amino Acid Esters: Equilibrium Changes and Kinetics of the Isomerization. *J. Am. Chem. Soc.* **1976**, *98*, 5969 – 5973.
- [80] H. Kessler, W. Ott: 2,6-Substituted Homotropilidenes. Influence of Substituents on Valence Topomerization. *J. Am. Chem. Soc.* **1976**, *98*, 5014 – 5016.
- [81] D. Demel, H. Kessler: Conformation of cyclo[Pro-Phe-Gly-Phe-Gly]. *Tetrahedron Lett.* **1976**, 2801 – 2804.
- [82] H. Kessler, H. Möhrle, G. Zimmermann: Determination of the Configuration and Conformation of α -, β -, and Isotripiperidine by Carbon-13 NMR-Spectroscopy. *J. Org. Chem.* **1977**, *42*, 66 – 72.
- [83] H. Kessler, G. Zimmermann: ¹³C-DNMR-Studie zur molekularen Beweglichkeit von α -Tripeptiden. *Chem. Ber.* **1977**, *110*, 2306 – 2315.
- [84] M. Feigl, H. Kessler: Ionization Barrier of Trityl Chloride in Sulfur Dioxide. *Angew. Chem., Int. Ed. Engl.* **1977**, *16*, 256 – 257; *Angew. Chem.* **1977**, *89*, 266 – 267.

- [85] Y. A. Bara, A. Friedrich, W. Hehlein, H. Kessler, P. Kondor, M. Molter, H.-J. Veith: Synthese der cyclischen Pentapeptide aus L-Phenylalanin und Glycin. *Chem. Ber.* **1978**, *111*, 1029 – 1044.
- [86] Y. A. Bara, A. Friedrich, H. Kessler, M. Molter: ^1H -NMR-Untersuchungen zur Konformation von cyclo-(Phe₃-Gly₂). *Chem. Ber.* **1978**, *111*, 1045 – 1057.
- [87] M. Feigel, H. Kessler: Tris(4-methoxyphenyl)methyl-isothiocyantat – Direkte Beobachtung und Linienformanalyse der Ionisierung und der Ionenpaar-Rekombination. *Chem. Ber.* **1978**, *111*, 1659 – 1669.
- [88] H. Kessler, P. Kondor, G. Krack, P. Krämer: Conformational Equilibrium in the Backbone of Cyclic Tripeptides. *J. Am. Chem. Soc.* **1978**, *100*, 2548 – 2550.
- [89] H. Kessler, Y. A. Bara, A. Friedrich, W. Hehlein, P. Kondor, M. Molter: Conformational Studies of Cyclic Pentapeptides by NMR-Spectroscopy. In *Peptides 1977. Proc. 5th Amer. Peptide Symp., June 20 – 24, 1977, San Diego, Calif.* (Eds.: M. Goodman, J. Meienhofer). John Wiley & Sons, New York, **1977**, 343 – 345.
- [90] H. Kessler, G. Zimmermann, H. Fietze, H. Möhrle: Simultane Beobachtung dreier reversibler Austauschprozesse im Diphenylborinsäure-diethanol-aminester – eine ^1H - und ^{13}C -DNMR-spektroskopische Untersuchung. *Chem. Ber.* **1978**, *111*, 2605 – 2614.
- [91] M. Feigel, H. Kessler, A. Walter: Das Gleichgewicht zwischen Kontaktionenpaaren des Tropyliumisothiocyantats und kovalenten 7-Isothiocyanatocycloheptatrien – ^1H - und ^{13}C -NMR-Messungen. *Chem. Ber.* **1978**, *111*, 2947 – 2959.
- [92] R. Bicker, H. Kessler, G. Zimmermann: ^{13}C -NMR-Spektroskopie von Norbornanderivaten. I. Gerüstabhängige Verschiebungseffekte und ihre Nichtadditivität als Indikator für Intramolekulare Wechselwirkungen. *Chem. Ber.* **1978**, *111*, 3200 – 3214.
- [93] R. Bicker, H. Kessler, A. Steigel, G. Zimmermann: ^{13}C -NMR-Spektroskopie von Norbornanderivaten. II. Einfluß homokonjugativer Wechselwirkungen auf die Carbonylverschiebung in Norbornan-systemen. *Chem. Ber.* **1978**, *111*, 3215 – 3221.
- [94] H. O. Kalinowski, H. Kessler: π -Donoreigenschaften von Sauerstoff und Schwefel – DNMR Studien an aromatischen Uronium- und Thiouronium-salzen zur Frage der planaren Inversion am Sauerstoff und Schwefel. *Chem. Ber.* **1979**, *112*, 1153 – 1167.
- [95] H. Kessler, G. Krack, P. Krämer: Conformational Equilibrium in the Backbone of Cyclic Tripeptides – in: *Peptides 1978. Proc. 15th European Pept. Symp., Sept. 4 – 9, 1978, Gdansk, Poland* (Eds.: I. Z. Siemion, G. Kupryszewski). Wrocław University Press, Poland, **1979**, 301 – 304.
- [96] M. Feigel, H. Kessler, D. Leibfritz, A. Walter: Ionization of Tropylium Azide in Liquid Sulfur Dioxide and Selective Migration of the Azide Ligand in Less Polar Solvents. *J. Am. Chem. Soc.* **1979**, *101*, 1943 – 1950.
- [97] R. W. Hoffmann, N. Haeuel, F. Frickel, H. Kessler, M. Kempf: 5-Methoxy-semibullvalen. *Chem. Ber.* **1979**, *112*, 2894 – 2902.
- [98] H. Kessler, P. Kondor: Festlegung von intramolekularen Wasserstoffbrücken in cyclo-(Phe-Gly-Xxx-Val-Ala-) durch ^1H -NMR-Spektroskopie. *Chem. Ber.* **1979**, *112*, 3538 – 3551.
- [99] M. Feigel, H. Kessler: Direkte Beobachtung der Ionisation und Ionen-rekombination von Tritylchlorid in SO_2 . *Chem. Ber.* **1979**, *112*, 3715 – 3722.
- [100] H. Kessler, W. Ott, J. Lindner, H. G. von Schnering, E. M. Peters, K. Peters: Die Struktur des 2,6-Diphenyl-homotropilidens. *Chem. Ber.* **1980**, *113*, 90 – 103.
- [101] J. W. Bats, A. Friedrich, H. Fuess, H. Kessler, W. Märtle, M. Rothe: Boat Conformation of cyclo-[L-Pro₂-D-Pro]. *Angew. Chem., Int. Ed. Engl.* **1979**, *18*, 538 – 539; *Angew. Chem.* **1979**, *91*, 573 – 574.
- [102] J. W. Bats, H. Fuess, H. Kessler, R. Schuck: *tert*-Butoxycarbonyl-L- α -phenylalanin. Kristallstruktur und Konformationsumwandlungen in Lösung. *Chem. Ber.* **1980**, *113*, 520 – 530.
- [103] H. Kessler: Conformational Mobility of the Backbone of Cyclic Tripeptides. In *Stereodynamics of Molecular Systems* (Ed.: R. H. Sarma). Pergamon Press, Oxford, New York, Frankfurt, Paris, **1979**, 187 – 196.
- [104] H. Kessler, P. Krämer, G. Krack: Conformational Studies on Cyclo-tripeptides Containing N-Benzyl-Glycine. *Isr. J. Chem.* **1980**, *20*, 188 – 195.
- [105] P. Kondor, H. Kessler: Conformation of Cyclic 5-Peptides. In *Peptides: Structure and Biological Function. Proc. 6th Am. Pept. Symp., June 17 – 22, 1979, Washington, D. C.* (Eds.: E. Gross, J. Meienhofer). Pierce Chemical Comp., Rockford (IL), USA, **1979**, 181 – 184.
- [106] G. Binsch, H. Kessler: The Kinetic and Mechanistic Evaluation of NMR Spectra. *Angew. Chem., Int. Ed. Engl.* **1980**, *19*, 411 – 428; *Angew. Chem.* **1980**, *92*, 445 – 463.
- [107] H. Kessler, G. Hölzemann: cyclo-Leu⁵-Enkephalin. *Angew. Chem., Int. Ed. Engl.* **1981**, *20*, 124 – 125; *Angew. Chem.* **1981**, *93*, 90 – 91.
- [108] H. Kessler, A. Friedrich, W. E. Hull: Conformation of Cyclo-(L-Pro₃) in Solution. *J. Org. Chem.* **1981**, *46*, 3892 – 3895.
- [109] H. Kessler, G. Krack, G. Zimmermann: Double-INDOR-Difference Spectroscopy (DID). A Simple Method to Aid the Analysis of Overlapping Spin Systems. *J. Magn. Reson.* **1981**, *44*, 208 – 211.

- [110] H. Kessler, M. Feigel: Direct Observation of Recombination Barriers of Ion Pairs by Dynamic NMR Spectroscopy. *Acc. Chem. Res.* **1982**, *15*, 2–8.
- [111] H. Kessler, G. Hölzemann: *cyclo*-Enkephaline – Synthese und Konformationsstudien. *Liebigs Ann. Chem.* **1981**, 2028–2044.
- [112] H. Kessler, A. Friedrich, G. Krack, W. E. Hull: NMR Analysis and Conformation of Cyclotriprolines. In *Peptides: Synthesis – Structure – Function. Proc. 7th Am. Pept. Symp. June 14–19, 1981, Madison, Wisconsin* (Eds.: D. H. Rich, E. Gross). Pierce Chemical Comp., Rockford (IL), USA, **1981**, 335–338.
- [113] H. Kessler, G. Zimmermann, H. Förster, J. Engel, G. Oepen, W. S. Sheldrick: Does a Molecule have the Same Conformation in the Crystalline State and in Solution? Comparison of NMR Results for the Solid State and Solution with those of the X-ray Structural Determination. *Angew. Chem., Int. Ed. Engl.* **1981**, *20*, 1053–1055; *Angew. Chem.* **1981**, *93*, 1085–1086.
- [114] H. Kessler, W. Hehlein, R. Schuck: One and Two-Dimensional ¹H-, ¹³C-, and ¹⁵N- NMR Studies of cyclo(Pro-Phe-Gly-Phe-Gly)_n (n = 1, 2): Selective Complexation of Lithium Ions (n = 1) and Potassium Ions (n = 2). *J. Am. Chem. Soc.* **1982**, *104*, 4534–4540.
- [115] H. Kessler, W. Bermel, H. Förster: Solid-State ¹³C-NMR-Spectra of Cyclotriprolines. *Angew. Chem., Int. Ed. Engl.* **1982**, *21*, 689; *Angew. Chem.* **1982**, *94*, 703.
- [116] H. Kessler, D. Ziessow: Zweidimensionale NMR-Spektroskopie. *Nachr. Chem. Tech. Lab.* **1982**, *30*, 488–497.
- [117] H. Kessler, W. Bermel, A. Friedrich, G. Krack, W. E. Hull: *cyclo*-(L-Pro-L-Pro-D-Pro). Conformational Analysis by 270- and 500-MHz One- and Two-Dimensional ¹H-NMR-Spectroscopy. *J. Am. Chem. Soc.* **1982**, *104*, 6297–6304.
- [118] H. Kessler, R. Schuck, R. Siegmeyer: Analysis of the Conformational Equilibrium of cyclo[Pro-NBGLy₂] by means of Two-dimensional NMR-Spectroscopy. *J. Am. Chem. Soc.* **1982**, *104*, 4486–4487.
- [119] H. Kessler: Conformation and Biological Activity of Cyclic Peptides. *Angew. Chem., Int. Ed. Engl.* **1982**, *21*, 512–523; *Angew. Chem.* **1982**, *94*, 509–520.
- [120] F. A. A. M. de Leeuw, C. Altona, H. Kessler, W. Bermel, A. Friedrich, G. Krack, W. E. Hull: Conformational Analysis of Proline Rings from Proton Spin-Spin Coupling Constants and Force-Field Calculations: Application to Three Cyclic Tripeptides. *J. Am. Chem. Soc.* **1983**, *105*, 2237–2246.
- [121] H. Kessler, R. Schuck: Homo- and Heteronuclear Two-Dimensional NMR Spectroscopy of Cyclic Peptides. In *Chemistry of Peptides and Proteins, Vol. 2* (Eds.: W. Voelter, E. Bayer, Y. A. Ovchinnikov, E. Wünsch). De Gruyter, Berlin, **1984**, 233–238.
- [122] H. Kessler, R. Schuck, R. Siegmeyer, J. W. Bats, H. Fuess, H. Förster: Die Konformation von *cyclo*-[Pro₂-(NB)GLy] im Kristall und in Lösung durch Röntgenstrukturanalyse und ein- und zweidimensionaler NMR-Spektroskopie. *Liebigs Ann. Chem.* **1983**, 231–247.
- [123] H. Kessler, M. Bernd, I. Damm: NMR Investigations of Cyclic Hexapeptides Containing the Active Sequence of Somatostatin. *Tetrahedron Lett.* **1982**, *23*, 4685–4688.
- [124] H. Kessler, V. Eiermann: Homo- and Heteronuclear 2D NMR Spectroscopy of Cyclic Pentapeptides Containing the Active Sequence of Somatostatin. *Tetrahedron Lett.* **1982**, *23*, 4689–4692.
- [125] H. Kessler, R. Schuck: Application of Homonuclear and Heteronuclear Two-Dimensional NMR-Spectroscopy to Cyclolinopeptide A. In *Peptides 1982. Proc. 17th European Peptide Symp., Aug. 29–Sept. 3, 1982, Prag, CSSR* (Eds.: K. Blaha, P. Malon). De Gruyter, Berlin **1983**, 797–798.
- [126] H. Kessler, R. Siegmeyer: 9-Fluorenylmethyl Esters as Carboxyl Protecting Group. *Tetrahedron Lett.* **1983**, *24*, 281–282.
- [127] H. Kessler, H. Kogler: Ein- und zweidimensionale ¹H-NMR-Untersuchung zur Konformation der beiden cyclischen Pentapeptide *cyclo*-[Pro-Phe-Gly-Ser-Gly] und *cyclo*-[Pro-Ser-Gly-Phe-Gly]. *Liebigs Ann. Chem.* **1983**, 316–329.
- [128] H. Kessler, W. Bermel, G. Krack, J. W. Bats, H. Fuess, W. E. Hull: *cyclo*-[L-Pro-(Bz)Gly-D-Pro]. Synthese und Konformation im Kristall und in Lösung. *Chem. Ber.* **1983**, *116*, 3164–3181.
- [129] H. Kessler, M. Bernd, H. Kogler, J. Zarbock, O. W. Sørensen, G. Bodenhausen, R. R. Ernst: Relayed Heteronuclear Correlation Spectroscopy and Conformational Analysis of Cyclic Hexapeptides Containing the Active Sequence of Somatostatin. *J. Am. Chem. Soc.* **1983**, *105*, 6944–6952.
- [130] H. Kessler, B. Kutscher, G. Mager, E. Grell: Synthese des Streptogramin-B-analogen Cyclopeptides *cyclo*[-(Boc)Ser-D-Abu-Pro-(Me)Phe-Pip-Phe-O]. *Liebigs Ann. Chem.* **1983**, 1541–1550.
- [131] H. Kessler, H. Oschkinat, G. Zimmermann, H. Möhrle, M. Bieghold, W. Arz, H. Förster: Anwendung der hochauflösenden Festkörper-NMR-Spektroskopie zur Bestimmung der Ring-Ketten-Tautomerie. *Chem. Ber.* **1984**, *117*, 702–709.

- [132] H. Kessler, G. Hölzemann, R. Geiger: Conformational Studies of Some Cyclic Enkephalin Analogues by Two-dimensional NMR-Spectroscopy. In *Peptides: Structure, Function, Activity. Proc. 8th Am. Pept. Symp., May 22 – 27, 1983, Tucson, Arizona* (Eds.: V. J. Hruby, D. H. Rich). Pierce Chemical Comp., Rockford (IL), USA, **1983**, 295 – 298.
- [133] H. Kessler, H. Oschkinat, O. W. Sørensen, H. Kogler, R. R. Ernst: Multiple-Quantum-Filtered Homonuclear J, δ Spectra. *J. Magn. Reson.* **1983**, 55, 329 – 333.
- [134] M. Bickel, H. Kessler, W. König, V. Teetz, W. Stoll: Long-term inhibition of gastric acid secretion by somatostatin and analogues in rats. *Acta Endocrinologica* **1983**, 102, Suppl. 253, 106 – 107.
- [135] H. Kessler, H. R. Loosli, H. Oschkinat: Assignment of the ^1H -, ^{13}C -, and ^{15}N -NMR Spectra of Cyclosporin A in CDCl_3 and C_6D_6 by a Combination of Homo- and Heteronuclear Two-Dimensional Techniques. *Helv. Chim. Acta* **1985**, 68, 661 – 681.
- [136] H. R. Loosli, H. Kessler, H. Oschkinat, H. P. Weber, T. J. Petcher, A. Widmer: The Conformation of Cyclosporin A in the Crystal and in Solution. *Helv. Chim. Acta* **1985**, 68, 682 – 704.
- [137] H. Kessler, C. Griesinger, J. Zarbock, H. R. Loosli: Assignment of Carbonyl Carbons and Sequence Analysis in Peptides by Heteronuclear Shift Correlation via Small Coupling Constants with Broadband Decoupling in t_1 (COLOC). *J. Magn. Reson.* **1984**, 57, 331 – 336.
- [138] H. Kessler, C. Griesinger, J. Lautz: Determination of Connectivities via Small Proton-Carbon Couplings with a New Two-Dimensional NMR Technique. *Angew. Chem., Int. Ed. Engl.* **1984**, 23, 444 – 459. *Angew. Chem.* **1984**, 96, 434 – 435.
- [139] H. Kessler, G. Hölzemann, C. Zechel: Conformational analysis of cyclic enkephalin analogs of the type Tyr-cyclo-(N^{ω} -Xxx-Gly-Phe-Leu-). *Int. J. Pept. Prot. Res.* **1985**, 25, 267 – 279.
- [140] H. Kessler, W. Bermel: Conformational Analysis of Peptides by Two-Dimensional NMR Spectroscopy. In *Methods in Stereochemical Analysis, Vol. 6* (Eds.: A. Takeuchi, P. Marchand). VCH, Weinheim, **1986**, 179 – 205.
- [141] H. Kessler, G. Becker, H. Kogler, M. Wolff: 2-(2-Pyridyl-)Ethyl Esters. A New Carboxyl Protecting Group in Peptide Synthesis. *Tetrahedron Lett.* **1984**, 25, 3971 – 3974.
- [142] H. Kessler, H. R. Loosli, H. Oschkinat: Investigation of Peptides by Two-Dimensional NMR Spectroscopy – The Conformation of Cyclosporin A in Solution. In *Peptides 1984. Proc. 18th Europ. Pept. Symp., June 10 – 15, 1984, Djurönäset, Sweden* (Ed.: U. Ragnarsson). Almquist & Wiksell, Uppsala, Sweden, **1984**, 65 – 79.
- [143] H. Kessler, W. Bermel, C. Griesinger: Recognition of NMR Proton Spin Systems of Cyclosporin A via Heteronuclear Proton-Carbon Long-Range Couplings. *J. Am. Chem. Soc.* **1985**, 107, 1083 – 1084.
- [144] H. Kessler, B. Kutscher: Synthesis and NMR Investigation of Cyclic Pentapeptide Analogues of Thymopentin. *Tetrahedron Lett.* **1985**, 26, 177 – 180.
- [145] H. Kessler, M. Bernd: Konformations-untersuchungen an vier cyclischen Heptapeptiden durch NMR-Spektroskopie. *Liebigs Ann. Chem.* **1985**, 1145 – 1167.
- [146] H. Kessler, W. Bermel, C. Griesinger: Determination of Carbon-Carbon Connectivities, Assignment of Quaternary Carbons, and Extraction of Carbon-Carbon Coupling Constants by Carbon-Related Hydrogen-Carbon Spectroscopy. *J. Magn. Reson.* **1985**, 62, 573 – 579.
- [147] K. Ziegler, M. Frimmer, H. Kessler, I. Damm, V. Eiermann, S. Koll, J. Zarbock: Modified somatostatins as inhibitors of a multispecific transport system for bile acids and phallotoxins in isolated hepatocytes. *Biochim. Biophys. Acta* **1985**, 845, 86 – 93.
- [148] H. Kessler, W. Bermel, A. Müller, K.-H. Pook: Modern NMR Spectroscopy of Peptides. In *The Peptides, Vol. 7* (Eds.: S. Udenfried, J. Meienhofer, V. J. Hruby). Academic Press, Orlando, **1985**, 437 – 473.
- [149] H. Kessler, A. Müller, H. Oschkinat: Differences and Sums of Traces within COSY-Spectra (DISCO) for the Extraction of Coupling Constants: "Decoupling" After the Measurement. *Magn. Reson. Chem.* **1985**, 23, 844 – 852.
- [150] G. Hägele, W. Küchelhaus, J. Seega, G. Tossing, H. Kessler, R. Schuck: Methylsubstituierte Phosphorverbindungen, II. L-Men @P(X)Cl (R = Cl, L-Men, D-Men; X = ;S). Charakterisierung singulärer, diastereotoper und enantiotoper Methylgruppen durch ^1H -, ^{13}C - und ^{31}P -NMR-Techniken. *Z. Naturforsch.* **1985**, 40b, 1053 – 1063.
- [151] H. Kessler, H. Oschkinat: Simplification of Spectra for the Determination of Coupling Constants from Homonuclear Correlated 2D NMR Spectra. *Angew. Chem., Int. Ed. Engl.* **1985**, 24, 690 – 692; *Angew. Chem.* **1985**, 97, 689 – 690.
- [152] H. Kessler, M. Kühn, T. Löschner: Synthese des Benzylethers von Virginiamycin S₁. *Liebigs Ann. Chem.* **1986**, 1 – 20.
- [153] H. Kessler, M. Kühn, T. Löschner: Synthese von Virginiamycin S₁ und Virginiamycin S₄. *Liebigs Ann. Chem.* **1986**, 21 – 31.
- [154] H. Kessler, H. Oschkinat, H. R. Loosli: Two-Dimensional NMR Spectroscopy on the Immunosuppressive Peptide, Cyclosporin A. – in: *Methods in Stereochemical Analysis* (Eds.:

- R. M. Carlson, W. R. Croasmun) Verlag Chemie International, Deerfield Beach, USA, **1987** (Vol. 9) 259 – 299.
- [155] K. Eckard, H. Schwarz, G. Becker, H. Kessler: Monitoring and Optimization of Deprotection Reactions of Peptides by Direct Sampling with Fast Atom Bombardment Mass Spectrometry. *J. Org. Chem.* **1986**, *51*, 483 – 486.
- [156] C. Zechel, H. Kessler, R. Geiger: Synthesis and Conformational Studies of Enkephalinlike Cyclic Peptides and Dipeptides. In: *Peptides: Structure and Function. Proc. 9th Amer. Pept. Symp., June 23 – 28, 1985, Toronto, Canada* (Eds.: C. M. Deber, V. J. Hruby, K. D. Kopple). Pierce Chem. Comp., Rockford (IL), USA, **1985**, 507 – 510.
- [157] H. Kessler, B. Kutscher, R. Kerssebaum, A. Klein, J. Lautz, R. Obermeier, H. Müllner, W. F. van Gunsteren, R. Boelens, R. Kaptein: Design, Synthesis, and Conformation of Superactive Thymopoietin-Analogues. In: *Peptides: Structure and Function. Proc. 9th Amer. Pept. Symp., June 23 – 28, 1985, Toronto, Canada* (Eds.: C. M. Deber, V. J. Hruby, K. D. Kopple). Pierce Chem. Comp., Rockford (IL), USA, **1985**, 83 – 92.
- [158] H. Kessler, W. Bermel, C. Griesinger, P. Hertl, E. Streich, A. Rieker: Assignments of the Carbon Resonances in *tert*-Butylated 2-Naphthols by the Two-Dimensional C-Relayed H,C-COSY Technique. *J. Org. Chem.* **1986**, *51*, 596 – 601.
- [159] H. Kessler, G. Becker, H. Kogler, J. Friese, R. Kerssebaum: 2-(2'-Pyridyl)-ethyl-ester (Pet-ester) derivatives of polyfunctional amino acids. *Int. J. Pept. Prot. Res.* **1986**, *28*, 342 – 346.
- [160] G. Quinkert, N. Heim, J. W. Bats, H. Oschkinat, H. Kessler: The Structure of the Lichen Macrolide (+)-Aspicilin. *Angew. Chem., Int. Ed. Engl.* **1985**, *24*, 987 – 988; *Angew. Chem.* **1985**, *97*, 985 – 986.
- [161] H. Kessler, B. Kutscher: Synthese von cyclischen Pentapeptidanalogen des Thymopoietins. Cyclisierungen mit Carboodiimid und 4-(Dimethyl-amino)pyridin. *Liebigs Ann. Chem.* **1986**, 869 – 892.
- [162] H. Kessler, B. Kutscher, A. Klein: NMR-Studien zur Konformation von Cyclopentapeptidanalogen des Thymopoietins. *Liebigs Ann. Chem.* **1986**, 893 – 913.
- [163] H. Kessler, B. Kutscher: Cyclische Hexapeptidanalogen des Thymopoietins. Synthese und Konformationsstudien. *Liebigs Ann. Chem.* **1986**, 914 – 931.
- [164] H. Kessler, W. Bermel, C. Griesinger, C. Kolar: The Elucidation of the Constitution of Glycopeptides by the NMR Spectroscopic COLOC Technique. *Angew. Chem., Int. Ed. Engl.* **1986**, *25*, 342 – 344; *Angew. Chem.* **1986**, *98*, 352 – 353.
- [165] H. Kessler, A. Müller: Eine ungewöhnliche Konformation des cyclischen Peptapeptids cyclo-(Pro-Pro-Phe-Phe-Gly-) in DMSO. *Liebigs Ann. Chem.* **1986**, 1687 – 1704.
- [166] H. Kessler, H. Oschkinat, C. Griesinger, W. Bermel: Transformation of Homonuclear Two-Dimensional NMR Techniques into One-Dimensional Techniques Using Gaussian Pulses. *J. Magn. Reson.* **1986**, *70*, 106 – 133.
- [167] H. Kessler: Designing Activity and Receptor Selectivity in Cyclic Peptide Hormone Analogs. In *Design and Synthesis of Organic Molecules Based on Molecular Recognition* (Ed.: G. van Binst). Springer, Berlin, **1986**, 301 – 304.
- [168] H. Kessler, M. Gehrke, A. Haupt, M. Klein, A. Müller, K. Wagner: Common Structural Features for Cytoprotection Activities of Somatostatin, Antamanide and Related Peptides. *Klin. Wochenschr.* **1986**, *64*, Suppl. VII, 74 – 78.
- [169] K. H. Usadel, H. Kessler, G. Rohr, K. Kusterer, K. D. Palitzsch, U. Schwedes: Cytoprotective Properties of Somatostatins. *Klin. Wochenschr.* **1986**, *64*, Suppl. VII, 59 – 63.
- [170] G. S. Rao, H. Lemoch, H. Kessler, I. Damm, V. Eiermann, S. Koll, J. Zarbock, K. H. Usadel: Prevention of Phalloidin-induced Lesions on Isolated Rat Hepatocytes by Novel Synthetic Analogues of Somatostatin. *Klin. Wochenschr.* **1986**, *64*, Suppl. VII, 79 – 86.
- [171] H. Kessler, M. Klein, A. Müller, K. Wagner, J. W. Bats, K. Ziegler, M. Frimmer: Conformational Prerequisites for the in vitro Inhibition of Cholate Uptake in Hepatocytes by Cyclic Analogues of Antamanide and Somatostatin. *Angew. Chem., Int. Ed. Engl.* **1986**, *25*, 997 – 999; *Angew. Chem.* **1986**, *98*, 1030 – 1032.
- [172] H. Kessler, C. Griesinger, G. Zimmermann: Comparison of Four Pulse Sequences for the Routine Application of Proton-Carbon Shift Correlation. *Magn. Reson. Chem.* **1987**, *25*, 579 – 583.
- [173] W. Bermel, C. Griesinger, H. Kessler, K. Wagner: Assignment of Carbonyl Groups and Sequence Analysis in Peptides by Inverse Correlation Using Long-Range Couplings. *Magn. Reson. Chem.* **1987**, *25*, 325 – 326.
- [174] H. Kessler, C. Griesinger, R. Kerssebaum, K. Wagner, R. R. Ernst: Separation of Cross-Relaxation and J Cross-Peaks in 2D Rotating-Frame NMR Spectroscopy. *J. Am. Chem. Soc.* **1987**, *109*, 607 – 609.
- [175] H. Kessler, C. Griesinger, K. Wagner: Conformation of Side Chains in Peptides Using Heteronuclear Coupling Constants Obtained by Two-Dimensional NMR Spectroscopy. *J. Am. Chem. Soc.* **1987**, *109*, 6927 – 6933.

- [176] H. Kessler, A. Haupt, M. Frimmer, K. Ziegler: Synthesis of a cyclic retro analogue of somatostatin suitable for photoaffinity labelling. *Int. J. Peptide Protein Res.* **1987**, *29*, 621 – 628.
- [177] H. Kessler, A. Haupt, M. Klein, K. Wagner: Common Structural Features for Cytoprotection Activity of Cyclic Retro Analogues of Somatostatin. In *Peptides 1986. Proc. 19th European Pept. Symp., Aug. 31 – Sept. 5, 1986, Porto Carras, Greece* (Ed.: D. Theodoropoulos). De Gruyter, Berlin, New York, **1987**, 327 – 330.
- [178] H. Kessler, K. Wagner, M. Will: Peptide Analysis of Peptides Conformation by NMR Spectroscopy. In *Trends in Medicinal Chemistry. Proc. 9th Int. Symp. Med. Chem., Berlin* (Eds.: F. Mutschler, E. Winterfeld). VCH, Weinheim, **1987**, 143 – 157.
- [179] J. Lautz, H. Kessler, R. Kaptein, W. F. van Gunsteren: Molecular dynamics simulation of Cyclosporin A: The crystal structure and dynamic modelling of a structure in apolar solution based on NMR data. *J. Comp.-Aided Mol. Design* **1987**, *1*, 219 – 241.
- [180] J. Lautz, H. Kessler, R. Boelens, R. Kaptein, W. F. van Gunsteren: Conformational analysis of a cyclic thymopoietin-analogue by ¹H n. m. r. spectroscopy and restrained molecular dynamics simulations. *Int. J. Peptide Protein Res.* **1987**, *30*, 404 – 414.
- [181] H. Kessler, S. Steuernagel, D. Gillissen, T. Kamiyama: Complete Sequence Determination and Localisation of One Imino and Three Sulfide Bridges of the Nonadecapeptide Ro 09-0198 by Homonuclear 2D-NMR Spectroscopy. The DQF-RELAYED-NOESY-Experiment. *Helv. Chim. Acta* **1987**, *70*, 726 – 741.
- [182] H. Kessler, J. W. Bats, C. Griesinger, S. Koll, M. Will, K. W. Wagner: Conformational Analysis of a Superpotent Cytoprotective Cyclic Somatostatin Analogue. *J. Am. Chem. Soc.* **1988**, *110*, 1033 – 1049.
- [183] H. Kessler, M. Kottenhahn, A. Kling, C. Kolar: Synthesis of O-(α -Glyco)-peptides by the N-Iodosuccinimide Procedure. *Angew. Chem., Int. Ed. Engl.* **1987**, *26*, 888 – 890; *Angew. Chem.* **1987**, *99*, 919 – 921.
- [184] H. Kessler, M. Gehrke, C. Griesinger: Two-Dimensional NMR Spectroscopy: Background and Overview of the Experiments. *Angew. Chem., Int. Ed. Engl.* **1988**, *27*, 490 – 536; *Angew. Chem.* **1988**, *100*, 507 – 554.
- [185] H. Kessler, K. Wagner, M. Will: Conformational analysis of a cyclic hexapeptide by rotating frame NOE (ROE) evaluation and molecular dynamics (MD) calculations. In *Peptides – Chemistry and Biology. Proc. 10th Am. Pept. Symp., May 23 – 28, St. Louis, USA* (Ed.: G. R. Marshall). ESCOM Science, Leiden, The Netherlands, **1988**, 35 – 36.
- [186] G. Quinkert, U. Billhardt, H. Jacob, H. Fischer, J. Glenneberg, P. Nagler, V. Autze, N. Heim, M. Wacker, T. Schwalbe, Y. Kurth, J. W. Bats, G. Dürner, G. Zimmermann, H. Kessler: Photolactonisierung: ein neuer synthetischer Zugang zu Makroliden. *Helv. Chim. Acta* **1987**, *70*, 771 – 861.
- [187] H. Kessler, G. Gemmecker, A. Haupt, J. Lautz, M. Will: Cytoprotective Peptides – Conformational Analysis of a Superpotent Cyclic Hexapeptide Using NMR Spectroscopy and MD Calculations. In *NMR Spectroscopy and Drug Research. Alfred Benzon Symposium 26* (Eds.: J. W. Jaroszewski, K. Schaumburg, H. Kofod). Munksgaard, Copenhagen, **1988**, 138 – 152.
- [188] H. Kessler, G. Gemmecker, A. Haupt, M. Klein, K. Wagner, M. Will: Peptide Conformations 47. Alanine Containing Analogues of Cyclo-(α -Pro-Phe-Thr-Lys(Z)-Trp-Phe-) – Conformationally Controlled Structure-Activity-Relationships. *Tetrahedron* **1988**, *44*, 745 – 759.
- [189] H. Kessler, A. Haupt, M. Will: Design of Conformationally Restricted Cyclopeptides for the Inhibition of Cholate Uptake of Hepatocytes. In *Computer Aided Drug Design* (Eds.: T. J. Perun, C. L. Probst). Marcel Dekker, New York, **1989**, 461 – 484.
- [190] J. Lautz, H. Kessler, J. M. Blaney, R. M. Scheek, W. F. van Gunsteren: Calculating three-dimensional molecular structure from atom-atom distance information: cyclosporin A. *Int. J. Pept. Prot. Res.* **1989**, *33*, 281 – 288.
- [191] K. H. Usadel, H. Kessler, G. Rohr, K. Kusterer, K. D. Palitzsch, U. Schwedes: Cytoprotection by Somatostatins. In *Somatostatin, Basic and Clinical Status* (Ed.: S. Reichlin). Plenum, New York, London, **1987**, 193 – 200.
- [192] H. Kessler, C. Griesinger, J. Lautz, A. Müller, W. F. van Gunsteren, H. J. C. Berendsen: Conformational Dynamics Detected by Nuclear Magnetic Resonance NOE-Values and J Coupling Constants. *J. Am. Chem. Soc.* **1988**, *110*, 3393 – 3396.
- [193] H. Kessler, M. Klein, K. Wagner: Conformation and biological activity of proline containing cyclic retro-analogues of somatostatin. *Int. J. Peptide Protein Res.* **1988**, *31*, 481 – 498.
- [194] H. Kessler, A. Haupt, M. Schudok, K. Ziegler, M. Frimmer: Synthesis and structure-activity-relationships of side chain modified peptides of cyclo(-D-Pro-Phe-Thr-Lys-Trp-Phe-). *Int. J. Peptide Protein Res.* **1988**, *32*, 183 – 193.

- [195] H. Kessler, G. Gemmecker, B. Haase: Relayed-NOE Experiments in the Rotating Frame for Sequence Analysis of Peptides. *J. Magn. Reson.* **1988**, *77*, 401–408.
- [196] H. Kessler, M. Will, G. M. Sheldrick, J. Antel: Assignment of Proton and Carbon NMR Signals of Didemnin A in Solution. *Magn. Reson. Chem.* **1988**, *26*, 501–506.
- [197] H. Kessler, G. Gemmecker, S. Steuernagel: NOESY-TOCSY, an Advanta-geous 2D NMR Technique for the Analysis of Peptide Sequences. *Angew. Chem., Int. Ed. Engl.* **1988**, *27*, 564–566; *Angew. Chem.* **1988**, *100*, 600–603.
- [198] G. Quinkert, H. G. Schmalz, E. Walzer, S. Grosss, T. Kowalczyk-Przewloka, C. Schierloh, G. Dürner, J. W. Bats, H. Kessler: Totalsynthese des Pseudoguaianolids (+)-Confertin. *Liebigs Ann. Chem.* **1988**, 283–315.
- [199] K. Ziegler, M. Frimmer, H. Kessler, A. Haupt: Azidobenzamido-008, a new photosensitive substrate for the "multispecific bile acid transporter" of hepatocytes: evidence for a common transport system for bile acids and cyclostatins in basolateral membranes. *Biochem. Biophys. Acta* **1988**, *945*, 263–272.
- [200] H. Kessler, U. Anders, G. Gemmecker: Determination of Heteronuclear Long-Range Coupling Constants by Soft-H,C-COSY. *J. Magn. Reson.* **1988**, *78*, 382–388.
- [201] H. Kessler, A. Haupt, M. Schudok: Structural Optimization of Peptides for cytoprotection of Rat Liver Cells. In *Peptide Chemistry 1987. Proc. Jap. Symp. on Peptide Chem., Sept. 28 – Oct. 2, 1987, Kobe, Japan* (Eds: T. Shiba, S. Sakakibara). Protein Research Foundation, Osaka, Japan, **1988**, 627–630.
- [202] H. Kessler, J. W. Bats, K. Wagner, M. Will: Conformational Analysis of Cyclic Peptides in Solution. *Biopolymers* **1989**, *28*, 385–395.
- [203] H. Kessler, S. Steuernagel, M. Will, G. Jung, R. Kellner, D. Gillissen, T. Kamiyama: The Structure of the Polycyclic Nonadecapeptide Ro 09-0198. *Helv. Chim. Acta* **1988**, *71*, 1924–1929.
- [204] H. Kessler, G. Gemmecker, B. Haase, S. Steuernagel: Improvement of Relayed NOESY Type Experiments by Implantation of Spin-Lock Sequences. *Magn. Reson. Chem.* **1988**, *26*, 919–926.
- [205] H. Kessler, A. Müller, K.-H. Pook: Assignment of All Proton, Carbon, and Nitrogen NMR Signals of Antamanide in Chloroform Solution. *Liebigs Ann. Chem.* **1989**, 903–912.
- [206] H. Kessler, J. W. Bats, J. Lautz, A. Müller: Conformation of Antamanide. *Liebigs Ann. Chem.* **1989**, 913–928.
- [207] H. Kessler, M. Kottenhahn: Synthesis of Linear and Cyclic O- α -Glycopeptides. In *Peptides 1988. Proc. 20th Europ. Peptide Symp., Sept. 4–9, 1988, Tübingen* (Eds.: G. Jung, E. Bayer). De Gruyter, Berlin, New York, **1989**, 331–333.
- [208] H. Kessler, R. Kerssebaum, A. G. Klein, R. Obermeier, M. Will: Synthese und Konformationsanalyse von cyclischen Alanin-Analogen des Thymopoietins durch NMR-Spektroskopie und Molecular-Dynamics-Rechnungen im Vakuum und in Lösung. *Liebigs Ann. Chem.* **1989**, 269–294.
- [209] J. Lautz, H. Kessler, W. F. van Gunsteren, H.-P. Weber, R. M. Wenger: On the Dependence of Molecular Conformation on the Type of Solvent Environment: A Molecular Dynamics Study of Cyclosporin A. *Biopolymers* **1990**, *29*, 1669–1687.
- [210] H. Kessler, M. Will, J. Antel, H. Beck, G. M. Sheldrick: Conformational Analysis of Didemnins. A Multidisciplinary Approach by Means of X-ray, NMR, Molecular Dynamics, and Molecular-Mechanics Techniques. *Helv. Chim. Acta* **1989**, *72*, 530–555.
- [211] H. Kessler, U. Anders, G. Gemmecker, S. Steuernagel: Improvement of NMR Experiments by Employing Semiselective Half-Gaussian-Shaped Pulses. *J. Magn. Reson.* **1989**, *85*, 1–14.
- [212] H. Kessler, M. Schudok, A. Haupt: Dimerization of Cyclic Hexapeptides: Strong Increase of Biological Activity. In *Peptides 1988. Proc. 20th Europ. Peptide Symp., Sept. 4–9, 1988, Tübingen* (Eds.: G. Jung, E. Bayer). De Gruyter, Berlin, New York, **1989**, 664–666.
- [213] M. Hofmann, M. Gehrke, W. Bermel, H. Kessler: Proton-Detected C,H-Correlation NMR Techniques for the Complete Assignment of All Proton and Carbon Resonances of a Cyclic Peptide. *Magn. Reson. Chem.* **1989**, *27*, 877–886.
- [214] H. Kessler, U. Anders, G. Gemmecker: Application of Half-Gaussian Shaped Pulses for Selective Excitation. *Bruker Report* **1989**, No. 1, 31–32.
- [215] H. Kessler, S. Steuernagel: Conformational Determination by NMR Spectroscopy. In *Peptide Pharmaceuticals – Approaches to the Design of Novel Drugs* (Ed.: D. Ward). Open Univ., Buckingham, **1991**, 18–46.
- [216] U. Anders, G. Gemmecker, H. Kessler, C. Griesinger: Conformational analysis of amino acid side chains in peptides by quantitative evaluation of cross-peaks in COLOC-spectra. *Fresenius Z. Anal. Chem.* **1987**, *327*, 72–73.

- [217] H. Kessler, P. Schmieder, M. Kurz: Implementation of the DEPT Sequence in Inverse Shift Correlation; the DEPT-HMQC. *J. Magn. Reson.* **1989**, *85*, 400 – 405.
- [218] J. Lautz, H. Kessler, W. F. van Gunsteren, H. J. C. Berendsen, R. M. Scheek, R. Kaptein, J. Blaney: Restrained Molecular Dynamics Simulations of Cyclic Peptides. In *Peptides 1988. Proc. 20th Europ. Peptide Symp., Sept. 4 – 9, 1988, Tübingen* (Eds.: G. Jung, E. Bayer). De Gruyter, Berlin, New York, **1989**, 438 – 438.
- [219] H. Kessler, G. Gemmecker, M. Köck, R. Osowski, P. Schmieder: Improvement of Carbon-Detected H,H-TOCSY Experiments by Employing a DEPT Transfer. *J. Magn. Reson.* **1990**, *28*, 62 – 62.
- [220] H. Kessler, M. Gehrke, J. Lautz, M. Köck, D. Seebach, A. Thaler: Complexation and medium effects on the conformation of Cyclosporin A studied by NMR spectroscopy and MD calculations. *Biochem. Pharmacol.* **1990**, *40*, 169 – 169.
- [221] H. Kessler: Peptide Engineering: Design of Biologically Active Peptides under Conformational Control. In *Trends in Drug Research. Proc. 7th Noordwijkerhout-Camerino Symp., Sept. 4 – 8, 1989, The Netherlands* (Ed.: V. Claassen). Elsevier, Amsterdam, **1990**, 73 – 84.
- [222] H. Kessler, S. Seip, S. Steuernagel, M. Will, D. Gillissen, T. Kamiyama: The Antibiotic Ro 09-0198, a Molecule with Two Different Active Sites. In *Chemistry of Peptides and Proteins, Vol. 5/6. Proc. 7th USSR-FRG Symp. on Chemistry of Peptides and Proteins, Dilizhan/USSR, Sept. 23 – 30, 1989 and 8th FRG-USSR Symp., Aachen, 29.9. – 3.10.1991* (Eds.: D. Brandenburg, V. Ivanov, W. Voelter). DWI Reports, Mainz, Aachen, **1993**, 351 – 356.
- [223] H. Kessler, M. Kottenhahn, A. Kling, H. Matter: *Synthesis and Conformational Studies of O-Glycopeptides*. Proc. 3rd Akabori Conf., German-Japanese Symp. on Peptide Chemistry, July 2 – 5, 1989, Prien/Chiemsee (Ed.: E. Wünsch). MPI für Biochemie, Martinsried, **1989**, 45 – 49.
- [224] H. Kessler, P. Schmieder, W. Bermel: Complete Assignment of the Noncarbonylic Carbon-13 Resonances of Tendamistat. *Biopolymers* **1990**, *30*, 465 – 475.
- [225] H. Kessler, S. Mronga, M. Will, U. Schmidt: Solution Structure of [Me-L-Leu⁷] Didemnin B Determined by NMR-Spectroscopy and Refined by MD Calculation. *Helv. Chim. Acta* **1990**, *73*, 25 – 47.
- [226] H. Kessler, A. Kling, M. Kottenhahn: Facile Synthesis of a $\beta(1-3)$ -Linked gal-galactal-Disaccharide and Its Use in N-Iodosuccinimide-Activated O-Glycopeptide Synthesis. *Angew. Chem., Int. Ed. Engl.* **1990**, *29*, 425 – 427; *Angew. Chem.* **1990**, *102*, 452 – 454.
- [227] H. Kessler, M. Schudok: Short and Efficient Synthesis of Statine and Isostatine-Derivatives. *Synthesis* **1990**, 457 – 458.
- [228] H. Kessler, P. Schmieder, M. Köck, M. Kurz: Improved Resolution in Proton-Detected Heteronuclear Long-Range Correlation. *J. Magn. Reson.* **1990**, *88*, 615 – 618.
- [229] H. Kessler, U. Anders, M. Schudok: An Unexpected Cis Peptide Bond in the Minor Conformation of a Cyclic Hexapeptide Containing Only Secondary Amide Bonds. *J. Am. Chem. Soc.* **1990**, *112*, 5908 – 5916.
- [230] P. Schmieder, H. Kessler, H. Oschkinat: Fast Heteronuclear-3D NMR Spectroscopy; *Angew. Chem.* **1990**, *102*, 588 – 589; *Angew. Chem., Int. Ed. Engl.* **1990**, *29*, 546 – 548.
- [231] H. Kessler, S. Mronga, G. Gemmecker: Zero-Quantum Spectroscopy with TOCSY Transfer. *J. Magn. Reson.* **1990**, *87*, 633 – 638.
- [232] H. Kessler, P. Schmieder, M. Köck, M. Regelin: Selection of Methyl Resonances in Proton-Detected Heteronuclear Shift Correlation, the HQQC Experiment. *J. Magn. Reson.* **1991**, *91*, 375 – 379.
- [233] H. Kessler, P. Schmieder, H. Oschkinat: 3D Heteronuclear NMR Techniques for Carbon-13 in Natural Abundance. *J. Am. Chem. Soc.* **1990**, *112*, 8599 – 8600.
- [234] H. Kessler, P. Schmieder: Heteronuclear Two- and Three-Dimensional NMR Spectroscopy of ¹³C in Natural Abundance by Multiplicity Selection and Editing: Application to Peptides. *Biopolymers* **1991**, *31*, 621 – 629.
- [235] P. Karuso, H. Kessler, D. F. Mierke: Solution Structure of FK 506 from NMR and Molecular Dynamics. *J. Am. Chem. Soc.* **1990**, *112*, 9434 – 9436.
- [236] H. Kessler, M. Köck, T. Wein, M. Gehrke: Reinvestigation of the Conformation of Cyclosporin A in Chloroform. *Helv. Chim. Acta* **1990**, *73*, 1818 – 1832.
- [237] H. Kessler, T. Wein: Solution Structure of Phalloidin Obtained by NMR Spectroscopy in [D₆]DMSO and Molecular Dynamics Calculation in Vacuo and in Water. *Liebigs Ann. Chem.* **1991**, 179 – 184.
- [238] P. Schmieder, S. Zimmer, H. Kessler: Increased Resolution in Proton Detected Heteronuclear NMR Experiments by Folding in the Hetero-Dimension. *Magn. Reson. Chem.* **1991**, *29*, 375 – 380.
- [239] P. Schmieder, T. Domke, D. G. Norris, M. Kurz, H. Kessler, D. Leibfritz: Editing of Multiplicity in Two- and Three-Dimensional

- Heteronuclear NMR Spectroscopy by Fourier Transformation of the Pulse-Angle Dependency. *J. Magn. Reson.* **1991**, *33*, 430–435.
- [240] H. Kessler, S. Seip, J. Saulitis: Determination of cross relaxation rates by 3D NOE-NOE spectroscopy. *J. Biomol. NMR* **1991**, *1*, 83–92.
- [241] M. Kottenhahn, H. Kessler: Synthese von 2-Desoxy- α -O-glycopeptiden mit dem N-Iodsuccinimid-(NIS-)Verfahren. *Liebigs Ann. Chem.* **1991**, 727–744.
- [242] H. Kessler, H. Matter, G. Gemmecker, A. Kling, M. Kottenhahn: Solution Structure of a Synthetic N-Glycosylated Cyclic Hexapeptide Determined by NMR Spectroscopy and MD Calculations. *J. Am. Chem. Soc.* **1991**, *113*, 7550–7563.
- [243] H. Kessler, S. Mronga, G. Müller, L. Moroder, R. Huber: Conformational Analysis of a IgG1 Hinge Peptide Derivative in Solution Determined by NMR Spectroscopy and Refined by Restrained Molecular Dynamics Simulations. *Biopolymers* **1991**, *31*, 1189–1204.
- [244] H. Kessler, S. Mronga, G. Gemmecker: Multi-Dimensional NMR Experiments Using Selective Pulses. *Magn. Reson. Chem.* **1991**, *29*, 527–557.
- [245] D. F. Mierke, H. Kessler: Molecular Dynamics with Dimethyl Sulfoxide as a Solvent. Conformation of a Cyclic Hexapeptide. *J. Am. Chem. Soc.* **1991**, *113*, 9466–9470.
- [246] W. Guba, G. Müller, H. Kessler: Rational drug design via molecular dynamics simulations of HIV-1 protease inhibitor complexes. *J. Chim. Phys.* **1991**, *88*, 2551–2556.
- [247] D. A. Kuntz, R. Osowski, M. Schudok, R. K. Wierenga, K. Müller, H. Kessler, F. R. Opperdoes: Inhibition of triosephosphate isomerase from *Trypanosoma brucei* with cyclic hexapeptides. *Eur. J. Biochem.* **1992**, *207*, 441–447.
- [248] H. Kessler, H. Matter, G. Gemmecker, M. Kottenhahn, J. W. Bats: Structure and Dynamics of a Synthetic O-Glycosylated Cyclopeptide in Solution Determined by NMR Spectroscopy and MD Calculations. *J. Am. Chem. Soc.* **1992**, *114*, 4805–4818.
- [249] J. Saulitis, D. F. Mierke, G. Byk, C. Gilon, H. Kessler: Conformation of Cyclic Analogues of Substance P: NMR and Molecular Dynamics in Dimethyl Sulfoxide. *J. Am. Chem. Soc.* **1992**, *114*, 4818–4827.
- [250] H. Kessler, D. F. Mierke, D. Donald, M. Furber: Toward the Understanding of Immunosuppression. *Angew. Chem.* **1991**, *103*, 968–969; *Angew. Chem., Int. Ed. Engl.* **1991**, *30*, 954–955.
- [251] P. Schmieder, M. Kurz, H. Kessler: Determination of heteronuclear long-range couplings to heteronuclei in natural abundance by two- and three-dimensional NMR spectroscopy. *J. Biomol. NMR* **1991**, *1*, 403–420.
- [252] D. F. Mierke, P. Schmieder, P. Karuso, H. Kessler: Conformational Analysis of the cis- and trans-Isomers of FK 506 by NMR and Molecular Dynamics. *Helv. Chim. Acta* **1991**, *74*, 1027–1047.
- [253] H. Kessler, S. Seip, T. Wein, S. Steuernagel, M. Will: Structure of cinnamycin (Ro 09-0198) in solution. In *Nisin and Novel Lantibiotics. Proc. 1st Int. Workshop on Lantibiotics, April 15–18, 1991, Bad Honnef* (Eds.: G. Jung, H.-G. Sahl). ESCOM, Leiden, **1991**, 76–90.
- [254] H. Kessler, B. Haase: Cyclic hexapeptides derived from the human thymopoietin III. *Int. J. Pept. Prot. Res.* **1992**, *39*, 36–40.
- [255] M. Kurz, P. Schmieder, H. Kessler: HETLOC, an Efficient Method for Determining Heteronuclear Long-Range Couplings with Heteronuclei in Natural Abundance. *Angew. Chem.* **1991**, *103*, 1341–1342; *Angew. Chem., Int. Ed. Engl.* **1991**, *30*, 1329–1331.
- [256] P. Schmieder, H. Kessler: Determination of the ϕ Angle in a Peptide Backbone by NMR Spectroscopy with a Combination of Homonuclear and Heteronuclear Coupling Constants. *Biopolymers* **1992**, *32*, 435–440.
- [257] H. Kessler, D. F. Mierke, J. Saulitis, S. Seip, S. Steuernagel, T. Wein, M. Will: The Structure of Ro 09-0198 in Different Environments. *Biopolymers* **1992**, *32*, 427–433.
- [258] M. Aumailley, M. Gurrath, G. Müller, J. Calvete, R. Timpl, H. Kessler: Arg-Gly-Asp constrained within cyclic pentapeptides: strong and selective inhibitors of cell adhesion to vitronectin and laminin fragment P1. *FEBS Lett.* **1991**, *291*, 50–54.
- [259] D. Seebach, S. Y. Ko, H. Kessler, M. Köck, M. Reggelin, P. Schmieder, M. D. Walkins-haw, J. J. Bölsterli, D. Bevec: Thioclosporins: Preparation, Solution and Crystal Structure, and Immunosuppressive Activity. *Helv. Chim. Acta* **1991**, *74*, 1953–1990.
- [260] H. Kessler, S. Mronga, B. Kutscher, A. Müller, W. S. Sheldrick: Synthesis of the 4-Pyridine Analog of Kostanecki's Triketone. Determination of Constitution and Stereochemistry by 2D-NMR Spectroscopy and X-ray Structural Analysis. *Liebigs Ann. Chem.* **1991**, 1337–1341.

- [261] M. Kurz, D. F. Mierke, H. Kessler: Calculation of Molecular Dynamics for Peptides in Dimethyl Sulfoxide: Elimination of Vacuum Effects. *Angew. Chem.* **1992**, *104*, 213–214; *Angew. Chem., Int. Ed. Engl.* **1992**, *31*, 210–212.
- [262] M. Köck, H. Kessler, D. Seebach, A. Thaler: Novel Backbone Conformation of Cyclosporin A: The Complex with Lithium Chloride. *J. Am. Chem. Soc.* **1992**, *114*, 2676–2686.
- [263] H. Kessler, A. Geyer, H. Matter, M. Köck: Unusual Thionation of a Cyclic Hexapeptide. Conformational Changes and Dynamics. *Int. J. Pept. Prot. Res.* **1992**, *40*, 25–40.
- [264] G. Müller, M. Gurrath, H. Kessler, R. Timpl: Dynamic Forcing, a Method for Evaluating Activity and Selectivity Profiles of RGD (Arg-Gly-Asp)-Peptides. *Angew. Chem., Int. Ed. Engl.* **1992**, *31*, 326–328; *Angew. Chem.* **1992**, *104*, 341–343.
- [265] G. Müller, M. Gurrath, H. Kessler, R. Timpl, M. Aumailley: Conformational Analysis and Structure-Activity Relationships of Bioactive RGD (Arg-Gly-Asp) Peptides. A Computational Approach. In *Chemistry of Peptides and Proteins*, Vol. 5/6. *Proc. 7th USSR-FRG Symp. on Chemistry of Peptides and Proteins, Dilizhan/USSR, Sept. 23–30, 1989 and 8th FRG-USSR Symp., Aachen, 29.9.–3.10.1991* (Eds.: D. Brandenburg, V. Ivanov, W. Voelter). DWI Reports, Mainz, Aachen, **1993**, *112A*, 499–511.
- [266] M. Gurrath, G. Müller, H. Kessler, R. Timpl, M. Aumailley: Structure and Conformation-Activity Studies Leading to Potent RGD Containing Vitronectin and Laminin P1 Antagonists. In *Chemistry of Peptides and Proteins*, Vol. 5/6. *Proc. 7th USSR-FRG Symp. on Chemistry of Peptides and Proteins, Dilizhan/USSR, Sept. 23–30, 1989 and 8th FRG-USSR Symp., Aachen, 29.9.–3.10.1991* (Eds.: D. Brandenburg, V. Ivanov, W. Voelter). DWI Reports, Mainz, Aachen, **1993**, *112A*, 489–498.
- [267] L. Moroder, K. Köcher, H.-J. Musiol, W. Guba, G. Müller, H. Kessler: The Conformational Space of Conjugated Peptide Hormones Affects Critically Their Bioactivity and Immunoreactivity. In *The Fourth Akabori Conference. Proc. 4th Akabori Conf., Japanese-German Symp. on Peptide Chem., Shizuoka/Japan, Oct. 7–10, 1991* (Eds.: N. Yanaiharu, E. Wünsch). Protein Research Foundation, Osaka, Japan, **1992**, 191–200.
- [268] H. Kessler, H. Matter, A. Geyer, H.-J. Diehl, M. Köck, G. Kurz, F. R. Oppendoes, M. Calens, R. K. Wierenga: Selective Inhibition of Trypanosomal Triosephosphate Isomerase by a Thiopeptide. *Angew. Chem.* **1992**, *104*, 343–345; *Angew. Chem., Int. Ed. Engl.* **1992**, *31*, 328–330.
- [269] D. F. Mierke, H. Kessler: Combined Use of Homo- and Heteronuclear Coupling Constants as Restraints in Molecular Dynamics Simulations. *Biopolymers* **1992**, *32*, 1277–1282.
- [270] D. F. Mierke, H. Dürr, H. Kessler, G. Jung: Neuropeptide Y: Optimized Solid Phase Synthesis and Conformational Analysis in Trifluoroethanol. *Eur. J. Biochem.* **1992**, *206*, 39–48.
- [271] H. Kessler, V. Wittmann, M. Köck, M. Kotenhahn: Synthesis of C-Glycopeptides via Free Radical Addition of Glycosyl Bromides to Dehydro-alanine Derivatives. *Angew. Chem.* **1992**, *104*, 874–877; *Angew. Chem., Int. Ed. Engl.* **1992**, *31*, 902–904.
- [272] G. Müller, M. Gurrath, M. Kurz, H. Kessler: β VI Turns in Peptides and Proteins: A Model Peptide Mimicry. *Proteins: Structure, Function, and Genetics* **1993**, *15*, 235–251.
- [273] C. Unverzagt, A. Geyer, H. Kessler: Chain Elongation of Thiodipeptides with Proteases. *Angew. Chem.* **1992**, *104*, 1231–1233; *Angew. Chem., Int. Ed. Engl.* **1992**, *31*, 1229–1230.
- [274] S. Seip, J. Balbach, H. Kessler: An Improved Technique for Correlating Backbone Amide Protons with ^{15}N and $^1\text{H}^\alpha$ Protons (HN(CA)H) in Isotopically Enriched Proteins. *J. Magn. Reson.* **1992**, *100*, 406–410.
- [275] D. F. Mierke, S. Golic Grdadolnik, H. Kessler: Use of One Bond $\text{C}^\alpha\text{-H}^\alpha$ Coupling Constants As Restraints in MD Simulations. *J. Am. Chem. Soc.* **1992**, *114*, 8283–8284.
- [276] H. Kessler: Structure and Design of Cyclic Peptides for the Regulation of the Immune System. *J. prakt. Chem.* **1992**, *334*, 549–557.
- [277] H. Kessler, S. Seip: NMR of Peptides. In *Two-Dimensional NMR Spectroscopy: Applications for Chemists and Biochemists* (Eds.: W. R. Croasmun, R. M. K. Carlson). VCH, New York, **1994**, 619–654.
- [278] P. Schmieder, J. H. Ippel, H. van den Elst, G. A. van der Marel, J. H. van Boom, C. Altona, H. Kessler: Heteronuclear NMR of DNA with the heteronucleus in natural abundance: Facilitated assignment and extraction of coupling constants. *Nucleic Acids Res.* **1992**, *20*, 4747–4751.
- [279] H. Kessler, R. Haessner, W. Schüler: Structure of Rapamycin: An NMR and Molecular-Dynamics Investigation. *Helv. Chim. Acta* **1993**, *76*, 117–130.
- [280] A. E. Torda, R. M. Brunne, T. Huber, H. Kessler, W. F. van Gunsteren: Structure refinement using time-averaged J-coupling constants restraints. *J. Biomol. NMR* **1993**, *3*, 55–66.

- [281] M. Gurrath, G. Müller, H. Kessler, M. Aumailley, R. Timpl: Conformation/activity studies of rationally designed potent anti-adhesive RGD peptides. *Eur. J. Biochem.* **1992**, *210*, 911 – 921.
- [282] M. Gerz, H. Matter, H. Kessler: S-Glycosylated Cyclic Peptides. *Angew. Chem.* **1993**, *105*, 311 – 313; *Angew. Chem., Int. Ed. Engl.* **1993**, *32*, 269 – 271.
- [283] D. F. Mierke, H. Kessler: Improved Molecular Dynamics Simulations for the Determination of Peptide Structures. *Biopolymers* **1993**, *33*, 1003 – 1017.
- [284] M. Eberstadt, D. F. Mierke, M. Köck, H. Kessler: Peptide Conformation from Coupling Constants: Scalar Couplings as Restraints in MD Simulations. *Helv. Chim. Acta* **1992**, *75*, 2583 – 2592.
- [285] S. Seip, J. Balbach, H. Kessler: Determination of the $^1\text{H}^{\text{N}}\text{-}^1\text{H}^{\alpha}$ Coupling Constant in Large Isotopically Enriched Proteins. *Angew. Chem.* **1992**, *104*, 1656 – 1658; *Angew. Chem., Int. Ed. Engl.* **1992**, *31*, 1609 – 1611.
- [286] S. Seip, J. Balbach, H. Kessler: A simple way for sequential assignment in isotopically enriched proteins using a H(N)CACO correlation. *J. Biomol. NMR* **1993**, *3*, 233 – 237.
- [287] H. Kessler, M. Gurrath, G. Müller, M. Aumailley, R. Timpl: Selective RGD peptides for inhibition of cell-cell interactions via backbone cyclization. In *Peptides 1992. Proc. 22nd Europ. Pept. Symp., Sept. 13 – 19, 1992, Interlaken, Switzerland* (Eds.: C. H. Schneider, A. N. Eberle). ESCOM Science Publishers, Leiden, The Netherlands, **1993**, 75 – 76.
- [288] V. Wittmann, H. Kessler: Synthesis of C-glycosyl amino acids and their use in SPPS. In *Peptides 1992. Proc. 22nd Europ. Pept. Symp., Sept. 13 – 19, 1992, Interlaken, Switzerland* (Eds.: C. H. Schneider, A. N. Eberle). ESCOM Science Publishers, Leiden, The Netherlands, **1993**, 369 – 370.
- [289] S. Zimmer, E. Hoffmann, G. Jung, H. Kessler: Synthesis and backbone cyclization studies of hexapeptides using the reagents TBTU, HBTU, DPPA, and PPA. In *Peptides 1992. Proc. 22nd Europ. Pept. Symp., Sept. 13 – 19, 1992, Interlaken, Switzerland* (Eds.: C. H. Schneider, A. N. Eberle). ESCOM Science Publishers, Leiden, The Netherlands, **1993**, 393 – 394.
- [290] M. Köck, G. Müller, H. Kessler: Structure-activity relationship of Cyclosporin A using dynamic forcing. In *Peptides 1992. Proc. 22nd Europ. Pept. Symp., Sept. 13 – 19, 1992, Interlaken, Switzerland* (Eds.: C. H. Schneider, A. N. Eberle). ESCOM Science Publishers, Leiden, The Netherlands, **1993**, 511 – 512.
- [291] A. Geyer, D. F. Mierke, C. Unverzagt, H. Kessler: Synthesis of cyclic thiohexapeptides. In *Peptides 1992. Proc. 22nd Europ. Pept. Symp., Sept. 13 – 19, 1992, Interlaken, Switzerland* (Eds.: C. H. Schneider, A. N. Eberle). ESCOM Science Publishers, Leiden, The Netherlands, **1993**, 599 – 600.
- [292] H. Kessler, D. F. Mierke: Conformational Analysis in Solution of Antibiotics with Immunosuppressive Activity. In *Antibiotics and Antiviral Compounds – Chemical Synthesis and Modification* (Eds.: K. Krohn, H. A. Kirst, H. Maag). VCH, Weinheim, **1993**, 241 – 250.
- [293] L. Moroder, H.-J. Musiol, K. Köcher, J. P. Bali, C. H. Schneider, W. Guba, G. Müller, D. F. Mierke, H. Kessler: Synthetic immunogens. The effect of the conformational space on biological and immunological responses to dimeric hormone constructs. *Eur. J. Biochem.* **1993**, *212*, 325 – 333.
- [294] M. Gerz, H. Matter, H. Kessler: Synthesis and solution structure of an S-glycosylated cyclic hexapeptide. Evidence for conformational change induced by glycosylation. *Int. J. Peptide Protein Res.* **1994**, *43*, 248 – 257.
- [295] S. Zimmer, E. Hoffmann, G. Jung, H. Kessler: 'Head-to-Tail' Cyclization of Hexapeptides Using Different Coupling Reagents. *Liebigs Ann. Chem.* **1993**, 497 – 501.
- [296] R. K. Konat, D. F. Mierke, H. Kessler, B. Kutscher, M. Bernd, R. Voegeli: Synthesis and Solvent Effects on the Conformation of Hymenistatin 1. *Helv. Chim. Acta* **1993**, *76*, 1649 – 1666.
- [297] H. Kessler, H. Matter, G. Gemmecker, H.-J. Diehl, C. Isernia, S. Mronga: The pseudo- β -turn. A new structural motif with a *cis* peptide bond in cyclic hexapeptides. *Int. J. Peptide Protein Res.* **1994**, *43*, 47 – 61.
- [298] H. Kessler: Peptoids – A New Approach to the Development of Pharmaceuticals. *Angew. Chem.* **1993**, *105*, 572 – 573; *Angew. Chem., Int. Ed. Engl.* **1993**, *32*, 543 – 544.
- [299] V. Wittmann, H. Kessler: Stereoselective Synthesis of C-Glycosides with a Glycosyl Dianion. *Angew. Chem.* **1993**, *105*, 1138 – 1140; *Angew. Chem., Int. Ed. Engl.* **1993**, *32*, 1091 – 1093.
- [300] A. H. van Oijen, S. Behrens, D. F. Mierke, H. Kessler, J. H. van Boom, R. M. J. Lis-kamp: Synthesis and Structure of Cyclic Phosphopeptides Containing a Phosphodiester Linkage. *J. Org. Chem.* **1993**, *58*, 3722 – 3730.
- [301] D. F. Mierke, M. Kurz, H. Kessler: Peptide Flexibility and Calculations of an Ensemble of Molecules. *J. Am. Chem. Soc.* **1994**, *116*, 1042 – 1049.

- [302] W. Schüler, U. Christians, P. Schmieder, H.-M. Schiebel, I. Holze, K.-F. Sewing, H. Kessler: Structural Investigations of 13-O-Demethyl-FK506 and Its Isomers Generated by *in vitro* Metabolism of FK506 Using Human-Liver Microsomes. *Helv. Chim. Acta* **1993**, *76*, 2288 – 2302.
- [303] D. F. Mierke, H. Kessler: Simple modifications of MD force fields for determination of peptide structures from NMR data. In *Trends in QSAR and Molecular Modelling 92. Proc. 9th Europ. Symp. on Structure-Activity Relationships: QSAR and Molecular Modelling*; Sept. 7 – 11, 1992, Strasbourg, France (Ed.: C. G. Wermuth). ESCOM Science, Leiden, The Netherlands **1993**, 59 – 66.
- [304] G. Gemmecker, W. Jahnke, H. Kessler: Measurement of Fast Proton Exchange Rates in Isotopically Labeled Compounds. *J. Am. Chem. Soc.* **1993**, *115*, 11620 – 11621.
- [305] D. F. Mierke, R. M. Scheek, H. Kessler: Coupling Constants as Restraints in Ensemble Distance Driven Dynamics. *Biopolymers* **1994**, *34*, 559 – 563.
- [306] D. F. Mierke, H. Kessler: Peptide structures from NMR. In *Peptides: Chemistry, Structure and Biology. Proc. 13th Am. Pept. Symp., June 20 – 25, 1993, Edmonton, Canada* (Eds.: R. S. Hodges, J. A. Smith). ESCOM Science, Leiden, The Netherlands **1994**, 1096 – 1098.
- [307] D. F. Mierke, H. Kessler: Solvent simulations and internal motions. In *Peptides: Chemistry, Structure and Biology. Proc. 13th Am. Pept. Symp., June 20 – 25, 1993, Edmonton, Canada* (Eds.: R. S. Hodges, J. A. Smith). ESCOM Science, Leiden, The Netherlands **1994**, 902 – 904.
- [308] L. Moroder, R. Romano, J. Winand, J. Christophe, W. Guba, D. F. Mierke, H. Kessler: A comparative study on the physical and conformational state of double-tailed lipo-gastrin and -CCK derivatives. In *Peptides: Chemistry, Structure and Biology. Proc. 13th Am. Pept. Symp., June 20 – 25, 1993, Edmonton, Canada* (Eds.: R. S. Hodges, J. A. Smith). ESCOM Science, Leiden, The Netherlands **1994**, 493 – 495.
- [309] M. Köck, G. Müller, H. Kessler: Computational Approach to the Receptor-Bound Conformation of Cyclosporin A. *Helv. Chim. Acta* **1994**, *77*, 171 – 181.
- [310] S. Seip, J. Balbach, H. Kessler: Determination of Backbone Conformation of Isotopically Enriched Proteins Based on Coupling Constants. *J. Magn. Reson.* **1994**, *B 104*, 172 – 179.
- [311] W. Guba, H. Kessler: A Novel Computational Mimetic of Biological Membranes in Molecular Dynamics Simulations. *J. Phys. Chem.* **1994**, *98*, 23 – 27.
- [312] L. Moroder, R. Romano, W. Guba, D. F. Mierke, H. Kessler, C. Delporte, J. Winand, J. Christophe: New Evidence for a Membrane-Bound Pathway in Hormone Receptor Binding. *Biochemistry* **1993**, *32*, 13551 – 13559.
- [313] D. F. Mierke, T. Huber, H. Kessler: Coupling constants again: Experimental restraints in structure refinement. *J. Comp.-Aided Mol. Des.* **1994**, *8*, 29 – 40.
- [314] W. Jahnke, D. F. Mierke, L. Béress, H. Kessler: Structure of Cobra Cardiotoxin CTXI as Derived from NMR Spectroscopy and Distance Geometry Calculations. *J. Mol. Biol.* **1994**, *240*, 445 – 458.
- [315] S. Golic Grdadolnik, M. Eberstadt, G. Gemmecker, H. Kessler, A. Buhr, B. Erni: The glucose transporter of *Escherichia coli*. Assignment of the ¹H, ¹³C and ¹⁵N resonances and identification of the secondary structure of the soluble IIB domain. *Eur. J. Biochem.* **1994**, *219*, 945 – 952.
- [316] D. F. Mierke, A. Geyer, H. Kessler: Coupling constants and hydrogen bonds as experimental restraints in a distance geometry refinement protocol. *Int. J. Pept. Protein Res.* **1994**, *44*, 325 – 331.
- [317] S. Seip, J. Balbach, S. Behrens, H. Kessler, K. Flükiger, R. de Meyer, B. Erni: Mannose Transporter of *Escherichia coli*. Backbone Assignments and Secondary Structure of the IIA Domain of the IIA^B Subunit. *Biochemistry* **1994**, *33*, 7174 – 7183.
- [318] E. Graf von Roedern, H. Kessler: A Sugar Amino Acid as a Novel Peptidomimetic. *Angew. Chem., Int. Ed. Engl.* **1994**, *33*, 687 – 689; *Angew. Chem.* **1994**, *106*, 684 – 686.
- [319] S. Golic Grdadolnik, D. F. Mierke, G. Byk, I. Zeltser, C. Gilon, H. Kessler: Comparison of the Conformation of Active and Nonactive Backbone Cyclic Analogs of Substance P as a Tool to Elucidate Features of the Bioactive Conformation: NMR and Molecular Dynamics in DMSO and Water. *J. Med. Chem.* **1994**, *37*, 2145 – 2152.
- [320] R. Haubner, M. Gurrath, G. Müller, M. Aumailley, H. Kessler: Synthetic peptides for the inhibition of cell-cell and cell-matrix adhesion. In *Prospects in Diagnosis and Treatment of Breast Cancer. Proc. of the Joint International Symposium on Prospects in Diagnosis and Treatment of Breast Cancer, Nov. 10 – 11, 1993, Munich, Germany* (Eds.: M. Schmitt, H. Graeff,

- G. Kindermann). International Congress Series No. 1050: Excerpta Medica. Elsevier, B. V. Amsterdam, **1994**, 133 – 143.
- [321] A. Geyer, G. Müller, H. Kessler: Conformational Analysis of a Cyclic RGD Peptide Containing a ψ [CH₂-NH] Bond: A Positional Shift in Backbone Structure Caused by a Single Dipeptide Mimetic. *J. Am. Chem. Soc.* **1994**, *116*, 7735 – 7743.
- [322] W. Guba, R. Haeßner, G. Breipohl, S. Henke, J. Knolle, V. Santagada, H. Kessler: A Novel Combined Approach of NMR and Molecular Dynamics within a Biphasic Membrane Mimetic: Conformation and Orientation of the Bradykinin Antagonist Hoe 140. *J. Am. Chem. Soc.* **1994**, *116*, 7532 – 7540.
- [323] M. Pfaff, K. Tangemann, B. Müller, M. Gurath, G. Müller, H. Kessler, R. Timpl, J. Engel: Selective Recognition of Cyclic RGD Peptides of NMR Defined Conformation by α IIb β 3, α V β 3 and α 5 β 1 Integrins. *J. Biol. Chem.* **1994**, *269*, 20233 – 20238.
- [324] H. Kessler, K. Michael, M. Kottenhahn: TMS Triflate-Promoted O-Glycosylation of Amino Acids and Peptides by L-Acosaminal and L-Ristosaminal. *Liebigs Ann. Chem.* **1994**, 811 – 816.
- [325] G. Müller, M. Gurrath, H. Kessler: Pharmacophore refinement of gpIIb/IIIa antagonists based on comparative studies of antiadhesive cyclic and acyclic RGD peptides. *J. Comp-Aided Mol. Design* **1994**, *8*, 709 – 730.
- [326] J. Balbach, H. Kessler: ¹³C-Edited Double-Quantum Spectroscopy of Peptides and Proteins. *J. Magn. Reson.* **1994**, *105 B*, 83 – 87.
- [327] W. Jahnke, H. Kessler: Enhanced sensitivity of rapidly exchanging amide protons by improved phase cycling and the constructive use of radiation damping. *J. Biomol. NMR* **1994**, *4*, 735 – 740.
- [328] M. Hoffmann, H. Kessler: A Stereoselective Synthesis of 2-Acetamido-2-deoxy-C-glucosides: Glycosyl Dianions as Key Intermediates. *Tetrahedron Lett.* **1994**, *35*, 6067 – 6070.
- [329] M. Eberstadt, G. Gemmecker, D. F. Mierke, H. Kessler: Scalar Coupling Constants – Their Analysis and Their Application for the Elucidation of Structures. *Angew. Chem.* **1995**, *107*, 1813 – 1838. *Angew. Chem., Int. Ed. Engl.* **1995**, *34*, 1671 – 1695.
- [330] H. Matter, G. Gemmecker, H. Kessler: Influence of Serine in Position i on Conformation and Dynamics of Reverse Turns. *Int. J. Peptide Protein Res.* **1995**, *45*, 430 – 440.
- [331] M. Eberstadt, W. Guba, H. Kessler, H. Kogler, D. F. Mierke: Conformation and Dynamics of Dimeric Ureido-Balhimycin. *Biopolymers* **1995**, *36*, 429 – 437.
- [332] W. Jahnke, H. Kessler: Modified Triple Resonance NMR Experiments with Optimized Sensitivity for Rapidly Exchanging Protons. *Angew. Chem.* **1995**, *107*, 536 – 538; *Angew. Chem., Int. Ed. Engl.* **1995**, *34*, 469 – 471.
- [333] W. Jahnke, M. Baur, G. Gemmecker, H. Kessler: Improved Accuracy of NMR Structures by a Modified NOESY-HSQC Experiment. *J. Magn. Reson.* **1995**, *106 B*, 86 – 88.
- [334] H. Kessler, M. Eberstadt, W. Schmitt: Multidimensional NMR Spectroscopy of Proteins. In *NMR of Biological Macromolecules* (Ed.: C. I. Stassinopoulou). NATO ASI Series, Vol. H 87. Springer, Berlin, **1994**, 171 – 188.
- [335] E. Noiri, J. Gailit, D. Sheth, H. Magazine, M. Gurrath, G. Müller, H. Kessler, M. S. Goligorsky: Cyclic RGD peptides ameliorate ischemic acute renal failure in rats. *Kidney International* **1994**, *46*, 1050 – 1058.
- [336] H. Matter, H. Kessler: Structures, Dynamics and Biological Activities of 15 Cyclic Hexapeptide Analogs of the α -Amylase Inhibitor Tendamistat (HOE 467) in Solution. *J. Am. Chem. Soc.* **1995**, *117*, 3347 – 3359.
- [337] O. Frey, M. Hoffmann, V. Wittmann, H. Kessler, P. Uhlmann, A. Vasella: Preparation and Transmetalation of a Triphenylstannyl β -D-Glucopyranoside: A Highly Stereoselective Route to β -D-C-Glycosides via Glycosyl Dianions. *Helv. Chim. Acta* **1994**, *77*, 2060 – 2069.
- [338] H. Kessler: Dynamics by NMR. In *Encyclopedia of Nuclear Magnetic Resonance, Vol. 1: Historical Perspectives* (Eds.: D. M. Grant, R. K. Harris). John Wiley & Sons, Chichester, **1996**, 424 – 425.
- [339] H. Kessler, W. Schmitt: Peptides & Polypeptides. In *Encyclopedia of Nuclear Magnetic Resonance, Vol. 6* (Eds.: D. M. Grant, R. K. Harris). John Wiley & Sons, Chichester, **1996**, 3527 – 3537.
- [340] R. K. Konat, B. Mathä, J. Winkler, H. Kessler: Axinastatin 1 or Malaysiatin? Proof of Constitution and 3D Structure in Solution of a Cyclic Heptapeptide with Cytostatic Properties. *Liebigs Ann. Chem.* **1995**, 765 – 774.
- [341] H. Kessler, E. Graf von Roedern, E. Lohof, R. Haubner, A. Geyer, V. Wittmann: New Peptidomimetics and Conformational Consequences. In *5th Akabori Conference. Proc. 5th Akabori Conference, German-Ja-*

- panese Symp. on Peptide Chemistry, May 8–12, 1994, Dresden (Ed.: E. Wunsch). Max-Planck-Gesellschaft, Berlin, **1994**, 110–115.
- [342] G. Gemmecker, H. Kessler: Methodology and Applications of Heteronuclear and Multidimensional ^{13}C NMR to the Elucidation of Molecular Structure and Dynamics in the Liquid State. In *Carbon-13 NMR Spectroscopy of Biological Systems* (Ed.: N. Beckmann). Academic Press, London et al., **1995**, 7–64.
- [343] O. Frey, M. Hoffmann, H. Kessler: Stereoselective Syntheses of Retro-Isomers of *N*-Glucoasparagine. *Angew. Chem., Int. Ed. Engl.* **1995**, *34*, 2026–2028; *Angew. Chem.* **1995**, *107*, 2194–2195.
- [344] R. K. Konat, S. Golic Grdadolnik, W. Schmitt, H. Kessler: Conformational studies on cyclic tetrapeptides. Hydrophobic cluster formation. In *Peptides 1994. Proc. 23rd Europ. Peptide Symp., Sept. 4–10, 1994, Braga, Portugal* (Ed.: H. L. S. Maia). ESCOM, Leiden, **1995**, 521–522.
- [345] J. Wermuth, S. Goodman, H. Kessler: Conformational differences of cyclic RGD-peptides and their retro-inverso isomers. The effect on antiadhesive activities. In *Peptides 1994. Proc. 23rd Europ. Peptide Symp., Sept. 4–10, 1994, Braga, Portugal* (Ed.: H. L. S. Maia). ESCOM, Leiden, **1995**, 648–649.
- [346] D. Besse, S. Pegoraro, T. Diercks, H. Kessler, L. Moroder: Controlled Disulfide Bridging in Multiple Cysteine-Containing Peptides with Built-In Selenocysteines. In *The Sixth Akabori Conference. Proc. 6th Akabori Conf., Japanese-German Symp. on Peptide Chem., April 17–20, 1996, Ohtsu, Japan* (Ed.: Y. Shimonishi). Protein Research Foundation, Osaka, Japan, **1996**, 24–29.
- [347] H. Kessler, R. Gratias, G. Hessler, M. Gurrath, G. Müller: Conformation of cyclic peptides. Principle concepts and the design of selectivity and superactivity in bioactive sequences by "spatial screening". *Pure & Appl. Chem.* **1996**, *68*, 1201–1205.
- [348] K. Michael, V. Wittmann, W. König, J. Sandow, H. Kessler: *S*- and *C*-glycopeptide derivatives of an LH-RH agonist. *Int. J. Peptide Protein Res.* **1996**, *48*, 59–70.
- [349] B. Kutscher, M. Bernd, T. Beckers, T. Klenner, E. E. Polymeropoulos, J. Engel, A. Kleemann, M. Bachelin, T. Diercks, H. Kessler: Synthetic Peptides as Ligands for the Characterization of the Human LHRH-Receptor. In *The Sixth Akabori Conference. Proc. 6th Akabori Conf., Japanese-German Symp. on Peptide Chem., April 17–20, 1996, Ohtsu, Japan* (Ed.: Y. Shimonishi). Protein Research Foundation, Osaka, Japan, **1996**, 127–132.
- [350] H. Kessler, B. Diefenbach, D. Finsinger, A. Geyer, M. Gurrath, S. L. Goodman, G. Hölzemann, R. Haubner, A. Jonczyk, G. Müller, E. Graf von Roedern, J. Wermuth: Design of superactive and selective integrin receptor antagonists containing the RGD sequence. *Lett. Pept. Sci.* **1995**, *2*, 155–160.
- [351] E. Lioy, H. Kessler: Synthesis of a New Chiral Peptide Analogue of DNA Using Ornithine Subunits and Solid-Phase Peptide Synthesis Methodologies. *Liebigs Ann.* **1996**, 201–204.
- [352] V. Magdolen, P. Rettenberger, M. Koppitz, L. Goretzki, H. Kessler, U. H. Weidle, B. König, H. Graeff, M. Schmitt, O. Wilhelm: Systematic mutational analysis of the receptor-binding region of the human urokinase-type plasminogen activator. *Eur. J. Biochem.* **1996**, *237*, 743–751.
- [353] G. Bitan, S. Behrens, B. Mathä, Y. Mashriki, M. Hanani, H. Kessler, C. Gilon: New backbone cyclic substance P analogs. *Lett. Pept. Sci.* **1995**, *2*, 121–124.
- [354] W. Schmitt, G. Zanotti, T. Wieland, H. Kessler: Conformation of Different *S*-Deoxy-Xaa³-amaninamide-Analogues in DMSO Solution as Determined by NMR-Spectroscopy. Strong CD Effects Induced by βI , βII Conformational Change. *J. Am. Chem. Soc.* **1996**, *118*, 4380–4387.
- [355] R. Haubner, R. Gratias, B. Diefenbach, S. L. Goodman, A. Jonczyk, H. Kessler: Structural and Functional Aspects of RGD-Containing Cyclic Pentapeptides as Highly Potent and Selective Integrin $\alpha_v\beta_3$ Antagonists. *J. Am. Chem. Soc.* **1996**, *118*, 7461–7472.
- [356] M. Koppitz, T. Spellig, R. Kahmann, H. Kessler: Lipoconjugates: structure-activity studies for pheromone analogues of *Ustilago maydis* with varied lipophilicity. *Int. J. Peptide Protein Res.* **1996**, *48*, 377–390.
- [357] R. Haubner, W. Schmitt, G. Hölzemann, S. L. Goodman, A. Jonczyk, H. Kessler: Cyclic RGD Peptides Containing β -Turn Mimetics. *J. Am. Chem. Soc.* **1996**, *118*, 7881–7891.
- [358] M. Eberstadt, S. Golic Grdadolnik, G. Gemmecker, H. Kessler, A. Buhr, B. Erni: Solution Structure of the IIB Domain of the Glucose Transporter of *Escherichia coli*. *Biochemistry* **1996**, *35*, 11286–11292.
- [359] K. Michael, H. Kessler: MICHAEL-Type Additions in the Synthesis of α -*O*- and -*S*-2-Deoxyglycosides. *Tetrahedron Lett.* **1996**, *37*, 3453–3456.
- [360] E. Graf von Roedern, E. Lohof, G. Hessler, M. Hoffmann, H. Kessler: Synthesis and Conformational Analysis of Linear and

- Cyclic Peptides Containing Sugar Amino Acids. *J. Am. Chem. Soc.* **1996**, *118*, 10156 – 10167.
- [361] H. Kessler, W. Guba, B. Mathä, M. Koppitz, R. Haeßner, J. Lutz, L. Moroder: Peptides at Hydrophilic-Lipophilic Interphases. In *The Sixth Akabori Conference. Proc. 6th Akabori Conf., Japanese-German Symp. on Peptide Chem., April 17 – 20, 1996, Ohtsu, Japan* (Ed.: Y. Shimonishi). Protein Research Foundation, Osaka, Japan, **1996**, 172 – 177.
- [362] H. Kessler, R. K. Konat, W. Schmitt: Conformational Analysis of Peptides: Application to Drug Design. In *NMR in Drug Design* (Ed.: D. J. Craik). CRC Press, Boca Raton, New York, London, Tokyo, **1996**, 215 – 244.
- [363] O. Mechnich, H. Kessler: Synthesis of Axinastatins 2 – 5. *Tetrahedron Lett.* **1996**, *37*, 5355 – 5358.
- [364] M. Kranz, H. Kessler: Novel Synthesis of a Phe-Gly *E*-Alkene Dipeptide Isostere. *Tetrahedron Lett.* **1996**, *37*, 5359 – 5362.
- [365] J. Wermuth, S. L. Goodman, A. Jonczyk, H. Kessler: Stereoisomerism and Biological Activity of the Selective and Superactive $\alpha_v\beta_3$ Integrin Inhibitor cyclo(-RGDFV-) and Its Retro-Inverso Peptide. *J. Am. Chem. Soc.* **1997**, *119*, 1328 – 1335.
- [366] M. Hoffmann, F. Burkhart, G. Hessler, H. Kessler: C-Glycoside Analogues of N^4 -(2-Acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine: Synthesis and Conformational Analysis of a Cyclic C-Glycopeptide. *Helv. Chim. Acta* **1996**, *79*, 1519 – 1532.
- [367] S. Behrens, B. Mathä, G. Bitan, C. Gilon, H. Kessler: Structure-activity relationship of the ring portion in backbone-cyclic C-terminal hexapeptide analogs of substance P. NMR and molecular dynamics. *Int. J. Peptide Protein Res.* **1996**, *48*, 569 – 578.
- [368] L. Käsbeck, H. Kessler: Synthesis of S- α -D-Glucosylated L-Cysteine – A Novel S-Glycosyl Amino Acid. *Liebigs Ann./Recl.* **1997**, 165 – 167.
- [369] L. Käsbeck, H. Kessler: Convenient Syntheses of 2,3,4,6-Tetra-*O*-alkylated D-Glucose and D-Galactose. *Liebigs Ann./Recl.* **1997**, 169 – 173.
- [370] M. Koppitz, R. Haeßner, T. Spellig, R. Kahmann, H. Kessler: Synthesis, Activities and Conformational Analysis of Pheromone Derivatives of *Ustilago maydis*. In *Peptides: Chemistry, Structure and Biology. Proc. 14th American Peptide Symp., June 18 – 23, 1995, Columbus, Ohio, USA* (Eds.: P. T. P. Kaumaya, R. S. Hodges). Mayflower Scientific, Amherst (UK), **1996**, 201 – 202.
- [371] R. Haubner, R. Gratias, S. L. Goodman, H. Kessler: RGD plus X: Structure/Activity Investigations on Cyclic RGD-peptides. In *Peptides: Chemistry, Structure and Biology. Proc. 14th American Peptide Symp., June 18 – 23, 1995, Columbus, Ohio, USA* (Eds.: P. T. P. Kaumaya, R. S. Hodges). Mayflower Scientific, Amherst (UK), **1996**, 205 – 206.
- [372] E. Graf von Roedern, E. Lohof, M. Hoffmann, G. Hessler, H. Kessler: Sugar Amino Acids as Novel Peptidomimetics. In *Peptides: Chemistry, Structure and Biology. Proc. 14th American Peptide Symp., June 18 – 23, 1995, Columbus, Ohio, USA* (Eds.: P. T. P. Kaumaya, R. S. Hodges). Mayflower Scientific, Amherst (UK), **1996**, 682 – 684.
- [373] R. K. Konat, D. F. Mierke, H. Kessler: Conformational Homogeneity and Solvent Effects in Cyclic Peptides. In *Peptides: Chemistry, Structure and Biology. Proc. 14th American Peptide Symp., June 18 – 23, 1995, Columbus, Ohio, USA* (Eds.: P. T. P. Kaumaya, R. S. Hodges). Mayflower Scientific, Amherst (UK), **1996**, 839 – 840.
- [374] J. Lutz, R. Romano-Götsch, C. Escrieut, D. Fourmy, B. Mathä, G. Müller, H. Kessler, L. Moroder: Mapping of Ligand Binding Sites of the Cholecystokinin-B/Gastrin Receptor with Lipo-Gastrin Peptides and Molecular Modeling. *Biopolymers* **1997**, *41*, 799 – 817.
- [375] R. Weinkauff, P. Schanen, A. Metsala, E. W. Schlag, M. Bürgle, H. Kessler: Highly Efficient Charge Transfer in Peptide Cations in the Gas Phase: Threshold Effects and Mechanism. *J. Phys. Chem.* **1996**, *100*, 18567 – 18585.
- [376] D. Besse, F. Siedler, T. Diercks, H. Kessler, L. Moroder: The Redox Potential of Selenocysteine in Unconstrained Cyclic Peptides. *Angew. Chem.* **1997**, *109*, 915 – 917; *Angew. Chem., Int. Ed. Engl.* **1997**, *36*, 883 – 885.
- [377] G. Gemmecker, M. Eberstadt, A. Buhr, R. Lanz, S. Golic Gradolnik, H. Kessler, B. Erni: Glucose Transporter of *Escherichia coli*: NMR Characterization of the Phosphocysteine Form of the IIB^{Glc} Domain and Its Binding Interface with the IIA^{Glc} Subunit. *Biochemistry* **1997**, *36*, 7408 – 7417.
- [378] R. M. Gschwind, G. Gemmecker, M. Leutner, H. Kessler, R. Gutknecht, R. Lenz, K. Flükiger, B. Erni: Secondary structure of the IIB domain of the *Escherichia coli* mannose transporter, a new fold in the class of α/β twisted open-sheet structures. *FEBS Lett.* **1997**, *404*, 45 – 50.

- [379] M. Baur, H. Kessler: An Easy Way for Resolution Enhancement in Out-and-Back Triple-Resonance Experiments Applied to the HCACO Sequence. *J. Magn. Reson.* **1997**, *126*, 270 – 273.
- [380] M. Koppitz, M. Huenges, R. Gratias, H. Kessler, S. L. Goodman, A. Jonczyk: Synthesis of Unnatural Lipophilic *N*-(9*H*-Fluoren-9-ylmethoxy)carbonyl-Substituted α -Amino Acids and Their Incorporation into Cyclic RGD-Peptides: A Structure-Activity Study. *Helv. Chim. Acta* **1997**, *80*, 1280 – 1300.
- [381] M. Leutner, R. M. Gschwind, J. Liermann, C. Schwarz, G. Gemmecker, H. Kessler: Automated backbone assignment of labeled proteins using the threshold accepting algorithm. *J. Biomol. NMR* **1998**, *11*, 31 – 43.
- [382] H. Kessler: Structure-Activity Relationships by NMR: A New Procedure for Drug Discovery by a Combinatorial-Rational Approach. *Angew. Chem.* **1997**, *109*, 857 – 859; *Angew. Chem., Int. Ed. Engl.* **1997**, *36*, 829 – 831.
- [383] R. Haubner, D. Finsinger, H. Kessler: Stereoisomeric Peptide Libraries and Peptidomimetics for Designing Selective Inhibitors of the $\alpha_5\beta_3$ Integrin for a New Cancer Therapy. *Angew. Chem., Int. Ed.* **1997**, *36*, 1374 – 1389; *Angew. Chem.* **1997**, *109*, 1440 – 1456.
- [384] F. Burkhart, M. Hoffmann, H. Kessler: Stereoselective Synthesis of a C-Glycosidic Analog of *N*-Glucoasparagine. *Angew. Chem., Int. Ed. Engl.* **1997**, *36*, 1191 – 1192; *Angew. Chem.* **1997**, *109*, 1240 – 1241.
- [385] O. Mechnich, H. Kessler: What are the structures of phakellistatin 2 and phakellistatin 4? *Lett. Pept. Sci.* **1997**, *4*, 21 – 28.
- [386] M. Hoffmann, H. Kessler: Competition of Deprotonation and Tin-Lithium Exchange in the Generation of a Glycosyl Dianion. *Tetrahedron Lett.* **1997**, *38*, 1903 – 1906.
- [387] T. Diercks, M. Schwaiger, H. Kessler: HSQC-based Methyl Group Selection via Gradients in Multidimensional NMR Spectroscopy of Proteins. *J. Magn. Reson.* **1998**, *130*, 335 – 340.
- [388] T. Luther, V. Magdolen, S. Albrecht, M. Kasper, C. Riemer, H. Kessler, H. Graeff, M. Müller, M. Schmitt: Epitope-Mapped Monochloral Antibodies as Tools for Functional and Morphological Analyses of the Human Urokinase Receptor in Tumor Tissue. *Amer. J. Pathol.* **1997**, *150*, 1231 – 1244.
- [389] M. Bürgle, M. Koppitz, C. Riemer, H. Kessler, B. König, U. H. Weidle, J. Kellermann, F. Lottspeich, H. Graeff, M. Schmitt, L. Goretzki, U. Reuning, O. Wilhelm, V. Magdolen: Inhibition of the Interaction of Urokinase-Type Plasminogen Activator (uPA) with Its Receptor (uPAR) by Synthetic Peptides. *Biol. Chem.* **1997**, *378*, 231 – 237.
- [390] O. Mechnich, G. Hessler, H. Kessler, M. Bernd, B. Kutscher: Cyclic Heptapeptides Axinastatin 2, 3, and 4: Conformational Analysis and Evaluation of the Biological Potential. *Helv. Chim. Acta* **1997**, *80*, 1338 – 1354.
- [391] L. Goretzki, J. Bognacki, M. Koppitz, P. Rettenberger, V. Magdolen, S. Creutzburg, J. Hammelburger, U. H. Weidle, O. Wilhelm, H. Kessler, H. Graeff, M. Schmitt: Quantitative assessment of interaction of urokinase-type plasminogen activator and its receptor (CD87) by use of a solid-phase uPA-ligand binding assay. *Fibrinolysis & Proteolysis* **1997**, *11*, 11 – 19.
- [392] F. Berglechner, G. Richter, M. Fischer, A. Bacher, R. M. Gschwind, M. Huenges, G. Gemmecker, H. Kessler: Studies on the NusB protein of *Escherichia coli*. Expression and determination of secondary-structure elements by multinuclear NMR spectroscopy. *Eur. J. Biochem.* **1997**, *248*, 338 – 346.
- [393] V. Romanov, E. Noiri, G. Czerwinski, D. Finsinger, H. Kessler, M. S. Goligorsky: Two novel probes reveal tubular and vascular Arg-Gly-Asp (RGD) binding sites in the ischemic rat kidney. *Kidney International* **1997**, *52*, 93 – 102.
- [394] M. Baur, H. Kessler: Novel Suppression of the Diagonal Signals in the NOESY Experiment. *Magn. Reson. Chem.* **1997**, *35*, 877 – 882.
- [395] M. S. Goligorsky, E. Noiri, H. Kessler, V. Romanov: Therapeutic potential of RGD peptides in acute renal injury. *Kidney International* **1997**, *51*, 1487 – 1492.
- [396] R. Gratias, H. Kessler: Molecular Dynamics Study on Microheterogeneity and Preferential Solvation in Methanol/Chloroform Mixtures. *J. Phys. Chem. B* **1998**, *102*, 2027 – 2031.
- [397] R. Gratias, R. Konat, H. Kessler, M. Crisma, G. Valle, A. Polese, F. Formaggio, C. Toniolo, Q. B. Broxterman, J. Kamphuis: First Step Towards the Quantitative Identification of Peptide 3_{10} -Helix Conformation with NMR Spectroscopy: NMR and X-Ray Diffraction Structural Analysis of a Fully-Developed 3_{10} -Helical Peptide Standard. *J. Am. Chem. Soc.* **1998**, *120*, 4763 – 4770.
- [398] M. Schwaiger, M. Lebendiker, H. Yershalmi, M. Coles, A. Gröger, C. Schwarz, S. Schuldiner, H. Kessler: NMR investigation of the multidrug transporter EmrE, an integral membrane protein. *Eur. J. Biochem.* **1998**, *254*, 610 – 619.

- [399] M. Baur, G. Gemmecker, H. Kessler: ^{13}C -NOESY-HSQC with Split Carbon Evolution for Increased Resolution with Uniformly Labeled Proteins. *J. Magn. Reson.* **1998**, *132*, 191–196.
- [400] R. M. Gschwind, G. Gemmecker, H. Kessler: A spin labeled and highly resolved ed-H(CCO)NH-TOCSY experiment for the facilitated assignment of proton side chains in partially deuterated samples. *J. Biomol. NMR* **1998**, *11*, 191–198.
- [401] C. Gilon, M. Huenges, B. Mathä, G. Gellerman, V. Hornik, M. Afargan, O. Amitay, O. Ziv, E. Feller, A. Gamliel, D. Shohat, M. Wanger, O. Arad, H. Kessler: A Backbone-Cyclic, Receptor 5-Selective Somatostatin Analogue: Synthesis, Bioactivity, and Nuclear Magnetic Resonance Conformational Analysis. *J. Med. Chem.* **1998**, *41*, 919–929.
- [402] M. A. Dechantsreiter, F. Burkhart, H. Kessler: A Stereoselective Synthesis of a C-Glycosylated Peptoid Building Block. *Tetrahedron Lett.* **1998**, *39*, 253–254.
- [403] F. Burkhart, H. Kessler: C-Glycosides: A Stereoselective Synthesis of α -C-Galactosamines with a Glycosyl Dianion. *Tetrahedron Lett.* **1998**, *39*, 255–256.
- [404] J. Schmitt, M. Bernd, B. Kutscher, H. Kessler: Synthesis of Dolastatin 15 Mimetic Peptoids. *Bioorg. & Med. Chem. Lett.* **1998**, *8*, 385–388.
- [405] M. A. Dechantsreiter, E. Planker, B. Mathä, E. Lohof, G. Hölzemann, A. Jonczyk, S. L. Goodman, H. Kessler: N-Methylated Cyclic RGD Peptides as Highly Active and Selective $\alpha_v\beta_3$ Integrin Antagonists. *J. Med. Chem.* **1999**, *42*, 3033–3040.
- [406] R. Haubner, H.-J. Wester, U. Reuning, R. Senekowitsch-Schmidtko, B. Diefenbach, H. Kessler, G. Stöcklin, M. Schwaiger: Radiolabeled $\alpha_v\beta_3$ Integrin Antagonists: A New Class of Tracers for Tumor Targeting. *J. Nucl. Med.* **1999**, *40*, 1061–1071.
- [407] R. M. Gschwind, G. Gemmecker, H. Kessler: New Multi-quantum Version of the HBHA(CBCACO)NH Experiment with Enhanced Sensitivity for Partially Deuterated Samples. *J. Magn. Reson.* **1999**, *137*, 285–288.
- [408] S. F. Martin, G. O. Dorsey, T. Gane, M. C. Hillier, H. Kessler, M. Baur, B. Mathä, J. W. Erickson, T. N. Bhat, S. Munshi, S. V. Gulnik, I. A. Topol: Cyclopropane-Derived Peptidomimetics. Design, Synthesis, Evaluation, and Structure of Novel HIV-1 Protease Inhibitors. *J. Med. Chem.* **1998**, *41*, 1581–1597.
- [409] M. Bachelin, G. Hessler, G. Kurz, J. G. Hacia, P. B. Dervan, H. Kessler: Structure of a stereoregular phosphorothioate DNA/RNA duplex. *Nat. Struct. Biol.* **1998**, *5*, 271–276.
- [410] K. Fischer, V. Lutz, O. Wilhelm, M. Schmitt, H. Graeff, P. Heiss, T. Nishiguchi, N. Harbeck, H. Kessler, T. Luther, V. Magdolen, U. Reuning: Urokinase induces proliferation of human ovarian cancer cells: characterization of structural elements required for growth factor function. *FEBS Letters* **1998**, *438*, 101–105.
- [411] M. Huenges, C. Rölz, R. Gschwind, R. Peteranderl, F. Berglechner, G. Richter, A. Bacher, H. Kessler, G. Gemmecker: Solution structure of the antitermination protein NusB of *Escherichia coli*: a novel all-helical fold for an RNA-binding protein. *EMBO J.* **1998**, *17*, 4092–4100.
- [412] V. Magdolen, S. Albrecht, M. Kotsch, C. Haller, M. Bürgle, U. Jacob, M. Großer, H. Kessler, H. Graeff, M. Müller, M. Schmitt, T. Luther: Immunological and Functional Analyses of the Extracellular Domain of Human Tissue Factor. *Biol. Chem.* **1998**, *379*, 157–165.
- [413] M. S. Goligorsky, H. Kessler, V. I. Romanov: Molecular mimicry of integrin ligation: therapeutic potential of arginine-glycine-aspartic acid (RGD) peptides. *Nephrol. Dial. Transplant.* **1998**, *13*, 254–263.
- [414] F. Burkhart, M. Hoffmann, H. Kessler: C-Glycosides: A Stereoselective Synthesis of α - and β -C-Galactosides with Glycosyl Dianions. *Tetrahedron Lett.* **1998**, *39*, 7699–7702.
- [415] H. Kessler, G. Gemmecker: NMR-Based Modeling of Protein-Protein Complexes and Interaction of Peptides and Proteins with Anisotropic Solvents. In *NMR in Supramolecular Chemistry. Proc. of the NATO Advanced Workshop on Applications of NMR to the Study of Structure and Dynamics of Supramolecular Complexes, May 5–9, 1998, Sitges, Spain* (Ed.: M. Pons). NATO ASI Ser. C, Vol. 526. Kluwer Academic Publishers, Dordrecht (NL), **1999**, 255–266.
- [416] M. Kantlehner, D. Finsinger, J. Meyer, P. Schaffner, A. Jonczyk, B. Diefenbach, B. Nies, H. Kessler: Selective RGD-Mediated Adhesion of Osteoblasts at Surfaces of Implants. *Angew. Chem., Int. Ed.* **1999**, *38*, 560–562; *Angew. Chem.* **1999**, *111*, 587–590.
- [417] D. Besse, S. Pegoraro, T. Diercks, H. Kessler, L. Moroder: Selenocysteine as Useful Device for Selective Disulfide Pairings in Multiple Cysteine Peptides. In *Peptides 1996. Proc. 24th European Peptide Symp., Sept. 8–13, 1996, Edinburgh, Scotland* (Eds.: R. Ramage, R. Epton). Mayflower Scientific, Amherst (UK), **1998**, 253–254.

- [418] M. A. Dechantsreiter, B. Mathä, A. Jonczyk, S. L. Goodman, H. Kessler: Synthesis and Conformational Studies of N-methylated Cyclic RGD-peptides. In *Peptides 1996. Proc. 24th European Peptide Symp., Sept. 8–13, 1996, Edinburgh, Scotland* (Eds.: R. Ramage, R. Epton). Mayflower Scientific, Amherst (UK), **1998**, 329–330.
- [419] D. Finsinger, R. K. Konat, W. Schmitt, H. Kessler: Regioselective Thionylation of Tertiary Amide Bonds in Cyclic Tetrapeptides – A Conformational Approach. In *Peptides 1996. Proc. 24th European Peptide Symp., Sept. 8–13, 1996, Edinburgh, Scotland* (Eds.: R. Ramage, R. Epton). Mayflower Scientific, Amherst (UK), **1998**, 381–382.
- [420] H. Kessler, M. Koppitz, B. Mathä: Peptides at Hydrophilic-Lipophilic Interphase. In *Peptides 1996. Proc. 24th European Peptide Symp., Sept. 8–13, 1996, Edinburgh, Scotland* (Eds.: R. Ramage, R. Epton). Mayflower Scientific, Amherst (UK), **1998**, 535–536.
- [421] J. Lutz, R. Romano-Götsch, C. Escrieut, D. Fourmy, B. Mathä, G. Müller, H. Kessler, L. Moroder: Mapping of the Ligand Binding Site of CCK-B/Gastrin Receptor with Lipo-Gastrin Peptides. In *Peptides 1996. Proc. 24th European Peptide Symp., Sept. 8–13, 1996, Edinburgh, Scotland* (Eds.: R. Ramage, R. Epton). Mayflower Scientific, Amherst (UK), **1998**, 603–604.
- [422] O. Mechnich, G. Hessler, M. Bernd, R. Voegeli, B. Kutscher, H. Kessler: Synthesis and Conformational Analysis of Axinastatin 4. In *Peptides 1996. Proc. 24th European Peptide Symp., Sept. 8–13, 1996, Edinburgh, Scotland* (Eds.: R. Ramage, R. Epton). Mayflower Scientific, Amherst (UK), **1998**, 629–630.
- [423] J. S. Schmitt, S. L. Goodman, A. Jonczyk, H. Kessler: Synthesis of cyclic RGD-tetra-peptoids and optimization of the submonomer solid phase coupling protocol. In *Peptides – Frontiers of Peptide Science. Proc. 15th Amer. Peptide Symp., June 14–19, 1997, Nashville, Tennessee, USA* (Eds.: J. P. Tam, P. T. P. Kaumaya). Kluwer Academic Publishers, Dordrecht (NL), **1999**, 206–207.
- [424] J. Balbach, S. Seip, H. Kessler, M. Scharf, N. Kashani-Poor, J. W. Engels: Structure and Dynamic Properties of the Single Disulfide-Deficient α -Amylase Inhibitor [C45A/C73A]Tendamistat: An NMR Study. *Proteins: Structure, Function, and Genetics* **1998**, 33, 285–294.
- [425] M. Coles, T. Diercks, B. Muehlenweg, S. Bartsch, V. Zölzer, H. Tschesche, H. Kessler: The Solution Structure and Dynamics of Human Neutrophil Gelatinase-associated Lipocalin. *J. Mol. Biol.* **1999**, 289, 139–157.
- [426] H. Kessler, M. Schwaiger, M. Bürgle, A. Gröger, M. Coles, M. Lebendiker, H. Yerushalmi, S. Schuldiner: The Multi-Drug-Resistance Protein EmrE – high resolution NMR investigations and secondary structure. In *Proc. 7th Akabori Conference. Japanese-German Symp. on Peptide Chem., April 27–30, 1998, Heidelberg, Germany* (Ed.: H. Kunz). University Mainz, **1998**, 30–35.
- [427] G. Hölzemann, S. L. Goodman, W. Schmitt, R. Haubner, H. Kessler: From Peptides to Non-Peptides. First Applications with Cyclic RGD Peptides. In *Proc. 7th Akabori Conference. Japanese-German Symp. on Peptide Chem., April 27–30, 1998, Heidelberg, Germany* (Ed.: H. Kunz). University Mainz, **1998**, 62–66.
- [428] F. Burkhart, G. Hessler, H. Kessler: Synthesis and conformational analysis of C- and N-glycopeptide. In *Peptides – Frontiers of Peptide Science. Proc. 15th Amer. Peptide Symp., June 14–19, 1997, Nashville, Tennessee, USA* (Eds.: J. P. Tam, P. T. P. Kaumaya). Kluwer Academic Publishers, Dordrecht (NL), **1999**, 449–450.
- [429] O. Mechnich, G. Hessler, M. Bernd, B. Kutscher, H. Kessler: Synthesis and conformational analysis of axinastatin 5 and derivatives. In *Peptide Science – Present and Future. Proc. 1st International Peptide Symposium, Nov. 30–Dec. 5, 1997, Kyoto, Japan* (Ed.: Y. Shimonishi). Kluwer Academic Publishers, Dordrecht (NL), **1999**, 465–466.
- [430] G. Hölzemann, S. L. Goodman, C. Rölz, H. Kessler: Cyclic RGD peptides with a novel mimetic. In *Peptide Science – Present and Future. Proc. 1st International Peptide Symposium, Nov. 30–Dec. 5, 1997, Kyoto, Japan* (Ed.: Y. Shimonishi). Kluwer Academic Publishers, Dordrecht (NL), **1999**, 430–431.
- [431] H. Kessler, F. Burkhart, M. Koppitz, E. Lohof: Non-natural peptide modifications using sugars and lipophilic side chains. In *Peptide Science – Present and Future. Proc. 1st International Peptide Symposium, Nov. 30–Dec. 5, 1997, Kyoto, Japan* (Ed.: Y. Shimonishi). Kluwer Academic Publishers, Dordrecht (NL), **1999**, 587–594.
- [432] H. Kessler, M. Bürgle, C. Riemer, V. Magdolen, O. Wilhelm, M. Schmitt: Inhibition of uPA/uPAR-Interaction by Cyclic uPA-Derived Peptides. In *Peptides 1998. Proc. 25th European Peptide Symposium, Aug. 30–Sep. 4, 1998, Budapest, Ungarn* (Eds.: S. Bajusz, F. Hudecz). Akadémiai Kiadó, Budapest, Ungarn, **1999**, 72–73.

- [433] T. Bayer, C. Riemer, H. Kessler: Synthesis of Orthogonally Protected 2,4-Diaminoglutaric Acid Containing Peptides by Solid Phase Ugi Four Component Condensation. In *Peptides 1998. Proc. 25th European Peptide Symposium, Aug. 30 – Sep. 4, 1998, Budapest, Ungarn* (Eds.: S. Bajusz, F. Hudecz). Akadémiai Kiadó, Budapest, Ungarn, **1999**, 652 – 653.
- [434] C. Riemer, T. Bayer, H. Kessler: Chiral Pool Derived Synthesis of 2,3-Diaminosuccinic Acid as a Peptidomimetic Building Block. In *Peptides 1998. Proc. 25th European Peptide Symposium, Aug. 30 – Sep. 4, 1998, Budapest, Ungarn* (Eds.: S. Bajusz, F. Hudecz). Akadémiai Kiadó, Budapest, Ungarn, **1999**, 690 – 691.
- [435] V. Yu. Orekhov, D. M. Korzhnev, T. Diercks, H. Kessler, A. S. Arseniev: ¹H-¹⁵N NMR dynamic study of an isolated α -helical peptide (1-36)-bacteriorhodopsin reveals the equilibrium helix-coil transitions. *J. Biomol. NMR* **1999**, *14*, 345 – 356.
- [436] D. M. Korzhnev, V. Y. Orekhov, A. S. Arseniev, R. Gratiás, H. Kessler: Mechanism of the Unfolding of Transmembrane α -Helical Segment (1-36)-Bacteriorhodopsin Studied by Molecular Dynamics Simulations. *J. Phys. Chem. B* **1999**, *103*, 7036 – 7043.
- [437] E. Lohof, F. Burkhart, M. A. Born, E. Planker, H. Kessler: Sugar Amino Acids and Carbohydrates as Scaffolds and Peptidomimetics. In *Advances in Amino Acid Mimetics and Peptidomimetics, Vol. 2* (Ed.: A. Abell). JAI Press, Stamford, Connecticut, **1999**, 263 – 292.
- [438] C. Gibson, S. L. Goodman, D. Hahn, G. Hölzemann, H. Kessler: Novel Solid-Phase Synthesis of Azapeptides and Azapeptoids via Fmoc-Strategy and Its Application in the Synthesis of RGD-Mimetics. *J. Org. Chem.* **1999**, *64*, 7388 – 7394.
- [439] M. Coles, T. Diercks, J. Liermann, A. Gröger, B. Rockel, W. Baumeister, K. K. Koretke, A. Lupas, J. Peters, H. Kessler: The solution structure of VAT-N reveals a 'missing link' in the evolution of complex enzymes from a simple $\beta\alpha\beta$ element. *Current Biology* **1999**, *9*, 1158 – 1168.
- [440] H. Kessler, R. Konat, M. Kurz, C. Gilon: Conformational Design of Bioactive Peptides. In *Future Aspects in Peptide Chemistry. Collection Symp. Ser., Vol. 1* (Eds.: W. Voelter, G. Fischer). Academy of Sciences, Prague, Czech Republic, **1999**, 86 – 94.
- [441] M. Koppitz, B. Mathä, H. Kessler: Structure Investigation of Amphiphilic Cyclopeptides in Isotropic and Anisotropic Environments – A Model Study Simulating Peptide-Membrane Interactions. *J. Peptide Sci.* **1999**, *5*, 507 – 518.
- [442] T. Diercks, M. Coles, H. Kessler: An efficient strategy for assignment of cross-peaks in 3D heteronuclear NOESY experiments. *J. Biomol. NMR* **1999**, *15*, 177 – 180.
- [443] X.-A. Mao, T. Zhang, M. Baur, H. Kessler: Two-field-NOESY for precise determination of proton-proton distances and correlation times. *J. Chem. Phys.* **1999**, *111*, 8253 – 8254.
- [444] P. Schaffner, J. Meyer, M. Dard, R. Wenz, B. Nies, S. Verrier, H. Kessler, M. Kantleher: Induced tissue integration of bone implants by coating with bone selective RGD-peptides *in vitro* and *in vivo* studies. *J. Mater. Sci.: Mater. Med.* **1999**, *10*, 837 – 839.
- [445] M. Huenges, H. Kessler: Structural Chemistry Using NMR Spectroscopy, Peptides. In *Encyclopedia of Spectroscopy and Spectrometry* (Eds.: J. C. Lindon, G. E. Trauter, J. L. Holmes). Academic Press, London, **1999**, 2246 – 2260.
- [446] T. Zhang, X.-A. Mao, M. Baur, H. Kessler: NOESY around the critical point $\omega\tau_c = 1.12$. Precise determination of proton-proton distances and reorientation correlation times with two-field NOESY. *Mol. Phys.* **2000**, *98*, 201 – 210.
- [447] C. Gibson, H. Kessler: 2-Fluoropyrimidine as an efficient reagent in solid-phase synthesis of *N*-aryl- and *N*-alkyl-*N*-pyrimidin-2-ylamines. *Tetrahedron Lett.* **2000**, *41*, 1725 – 1728.
- [448] B. Muehlenweg, E. Guthaus, N. Arroyo de Prada, M. Schmitt, N. Schmiedeberg, M. Kotsch, S. Creutzburg, M. D. Kramer, H. Kessler, O. G. Wilhelm, V. Magdolen: Epitope Mapping of Monoclonal Antibodies Directed to PAI-1 Using PAI-1/PAI-2 Chimera and PAI-1-Derived Synthetic Peptides. *Thromb. Res.* **2000**, *98*, 73 – 81.
- [449] M. Schmitt, O. G. Wilhelm, U. Reuning, A. Krüger, N. Harbeck, E. Lengyel, H. Graeff, B. Gänsbacher, H. Kessler, M. Bürgle, J. Stürzebecher, S. Sperl, V. Magdolen: The urokinase plasminogen activator system as a novel target for tumor therapy. *Fibrinol. Proteol.* **2000**, *14*, 114 – 132.
- [450] E. Lohof, E. Planker, C. Mang, F. Burkhart, M. A. Dechantsreiter, R. Haubner, H.-J. Wester, M. Schwaiger, G. Hölzemann, S. L. Goodman, H. Kessler: Carbohydrate Derivatives for Use in Drug Design: Cyclic α_v -Selective RGD Peptides. *Angew. Chem., Int. Ed.* **2000**, *39*, 2761 – 2764; *Angew. Chem.* **2000**, *112*, 2868 – 2871.

- [451] M. Kantlehner, P. Schaffner, D. Finsinger, J. Meyer, A. Jonczyk, B. Diefenbach, B. Nies, G. Hölzemann, S. L. Goodman, H. Kessler: Surface Coating with Cyclic RGD Peptides Stimulates Osteoblast Adhesion and Proliferation as well as Bone Formation. *ChemBioChem* **2000**, *1*, 107 – 114.
- [452] C. Glaubitz, A. Gröger, K. Gottschalk, P. Spooner, A. Watts, S. Schuldiner, H. Kessler: ^{31}P -CP-MAS NMR studies on TPP⁺ bound to the ion-coupled multidrug transport protein EmrE. *FEBS Lett.* **2000**, *480*, 127 – 131.
- [453] B. Hu, D. Finsinger, K. Peter, Z. Guttenberg, M. Bärmann, H. Kessler, A. Escherich, L. Moroder, J. Böhm, W. Baumeister, Sen-fang Sui, E. Sackmann: Intervesicle Cross-Linking with Integrin $\alpha_{10}\beta_3$ and Cyclic-RGD-Lipopeptide. A Model of Cell-Adhesion Processes. *Biochemistry* **2000**, *39*, 12284 – 12294.
- [454] C. Gibson, G. Sulyok, J. S. Schmitt, M. A. Dechantsreiter, R. Haubner, G. Hölzemann, S. L. Goodman, H. Kessler: From Proteins to Drugs: The RGD Story. In *The 8th Akabori Conference. Proc. 8th Akabori Conference, Japanese-German Symposium on Peptide Science, April 26 – 29, 2000, Nagoya, Japan* (Ed.: T. Shioiri). Akabori Conference Association, Nagoya, Japan, **2000**, 1 – 5.
- [455] H. Kessler: Hoffnung auf neues Krebsmedikament. *Spektrum der Wissenschaft* **2000**, H. 11, 48 – 53.
- [456] H. Kessler, M. Kantlehner, C. Gibson, R. Haubner, D. Finsinger, M. Dechantsreiter, E. Planker, J. Wermuth, J. S. Schmitt, J. Meyer, P. Schaffner, G. Hölzemann, M. Wiesner, S. L. Goodman, D. Hahn, A. Jonczyk, H. J. Wester, M. Schwaiger: Recent progress in the field of α_v -integrin antagonists. In *Peptides for the New Millennium. Proc. 16th American Peptide Symposium, June 26-July 1, 1999, Minneapolis, Minnesota, USA* (Eds.: G. B. Fields, J. P. Tam, G. Barany). Kluwer, Dordrecht (NL), **2000**, 235 – 237.
- [457] N. Schmiedeberg, M. Bürgle, O. Wilhelm, F. Lottspeich, H. Graeff, M. Schmitt, V. Magdolen, H. Kessler: Design and biological activity of new high-affinity ligands for the urokinase-type plasminogen activator receptor (CD87). In *Peptides for the New Millennium. Proc. 16th American Peptide Symposium, June 26-July 1, 1999, Minneapolis, Minnesota, USA* (Eds.: G. B. Fields, J. P. Tam, G. Barany). Kluwer, Dordrecht (NL), **2000**, 543 – 545.
- [458] C. Gibson, G. A. G. Sulyok, D. Hahn, S. L. Goodman, G. Hölzemann, H. Kessler: Nonpeptidic $\alpha_v\beta_3$ Integrin-Antagonist Libraries: On-Bead-Screening and Mass Spectrometric Identification without Tagging. *Angew. Chem., Int. Ed.* **2001**, *40*, 165 – 169; *Angew. Chem.* **2001**, *113*, 169 – 173.
- [459] V. Marchi-Artzner, B. Lorz, U. Hellerer, M. Kantlehner, H. Kessler, E. Sackmann: Selective Adhesion of Endothelial Cells to Artificial Membranes with a Synthetic RGD-Lipopeptide. *Chem. Eur. J.* **2001**, *7*, 1095 – 1095.
- [460] R. Haubner, H.-J. Wester, F. Burkhart, R. Senekowitsch-Schmidtke, W. Weber, S. L. Goodman, H. Kessler, M. Schwaiger: Glycosylated RGD-Containing Peptides: Tracer for Tumor Targeting and Angiogenesis Imaging with Improved Biokinetics. *J. Nucl. Med.* **2001**, *42*, 326 – 336.
- [461] S. Gruner, H. Kessler: Linear and Cyclic Oligomers of Two New Furanoid Sugar Amino Acids. In *Peptides 2000. Proc. 26th European Peptide Symposium, Sept. 10 – 15, 2000, Montpellier, France* (Eds.: J. Martinez, J.-A. Fehrentz). Éditions EDK, Paris, **2001**, 313 – 314.
- [462] R. Haubner, H.-J. Wester, W. A. Weber, C. Mang, S. I. Ziegler, S. L. Goodman, R. Senekowitsch-Schmidtke, H. Kessler, M. Schwaiger: Noninvasive Imaging of $\alpha_v\beta_3$ Integrin Expression Using ^{18}F -labeled RGD-containing Glycopeptide and Positron Emission Tomography. *Cancer Res.* **2001**, *61*, 1781 – 1785.
- [463] T. Bayer, C. Riemer, H. Kessler: A New Strategy for the Synthesis of Cyclopeptides Containing Diaminoglutaric Acid. *J. Peptide Sci.* **2001**, *7*, 250 – 261.
- [464] T. Diercks, M. Coles, H. Kessler: Applications of NMR in drug discovery. *Curr. Opin. Chem. Biol.* **2001**, *5*, 285 – 291.
- [465] G. A. G. Sulyok, C. Gibson, S. L. Goodman, G. Hölzemann, M. Wiesner, H. Kessler: Solid-Phase Synthesis of a Nonpeptidic RGD Mimetic Library: New Selective $\alpha_v\beta_3$ Integrin Antagonists. *J. Med. Chem.* **2001**, *44*, 1938 – 1950.
- [466] V. Truffault, M. Coles, T. Diercks, K. Abelman, S. Eberhardt, H. Lüttgen, A. Bacher, H. Kessler: The Solution Structure of the N-terminal Domain of Riboflavin Synthase. *J. Mol. Biol.* **2001**, *309*, 949 – 960.
- [467] A. Dehner, E. Planker, G. Gemmecker, Q. B. Broxterman, W. Bisson, F. Formaggio, M. Crisma, C. Toniolo, H. Kessler: Solution Structure, Dimerization, and Dynamics of a Lipophilic $\alpha/3_{10}$ -Helical, C^α-Methylated Peptide. Implications for Folding Membrane Proteins. *J. Am. Chem. Soc.* **2001**, *123*, 6678 – 6686.

- [468] S. Hapke, H. Kessler, N. Arroyo de Prada, A. Benge, M. Schmitt, E. Lengyel, U. Reuning: Integrin $\alpha_v\beta_3$ /Vitronectin Interaction Affects Expression of the Urokinase System in Human Ovarian Cancer Cells. *J. Biol. Chem.* **2001**, *276*, 26340 – 26348.
- [469] J. Boer, D. Gottschling, A. Schuster, M. Semmrich, B. Holzmann, H. Kessler: Design and Synthesis of Potent and Selective $\alpha_4\beta_7$ Integrin Antagonists. *J. Med. Chem.* **2001**, *44*, 2586 – 2592.
- [470] V. Magdolen, M. Bürgle, N. Arroyo de Prada, N. Schmiedeberg, C. Riemer, F. Schroeck, J. Kellermann, K. Degitz, O. G. Wilhelm, M. Schmitt, H. Kessler: Cyclo^{19,31}[D-Cys¹⁹]-uPA₁₉₋₃₁ Is a Potent Competitive Antagonist of the Interaction of Urokinase-Type Plasminogen Activator with Its Receptor (CD87). *Biol. Chem.* **2001**, *382*, 1197 – 1205.
- [471] E. Locardi, M. Stöckle, S. Gruner, H. Kessler: Cyclic Homooligomers from Sugar Amino Acids: Synthesis, Conformational Analysis, and Significance. *J. Am. Chem. Soc.* **2001**, *123*, 8189 – 8196.
- [472] J. Boer, D. Gottschling, A. Schuster, B. Holzmann, H. Kessler: Design, Synthesis, and Biological Evaluation of $\alpha_4\beta_1$ Integrin Antagonists Based on β -D-Mannose as Rigid Scaffold. *Angew. Chem., Int. Ed.* **2001**, *40*, 3870 – 3873; *Angew. Chem.* **2001**, *113*, 3988 – 3991.
- [473] R. Haubner, W. A. Weber, H. J. Wester, S. I. Ziegler, E. Vabuliene, E. K. Chorianopoulos, H. Kessler, M. Schwaiger: Non-Invasive Determination of the $\alpha_v\beta_3$ Integrin Expression Using [¹⁸F]Galacto-RGD and PET (14. Intern. Symp. on Radiopharmaceutical Chemistry, Interlaken, Schweiz, 10. – 15.6.2001). *J. Labelled Cpd. Radiopharm.* **2001**, *44*, Suppl. 1, S96 – S98.
- [474] R. Haubner, H. J. Wester, W. A. Weber, W. Linke, C. Bodenstein, H. Kessler, M. Schwaiger: Improved Pharmacokinetics of [¹⁸F]RGD-Peptides by Serine-Conjugation (14. Intern. Symp. on Radiopharmaceutical Chemistry, Interlaken, Schweiz, 10. – 15.6.2001). *J. Labelled Cpd. Radiopharm.* **2001**, *44*, Suppl. 1, S157 – S159.
- [475] M. Heller, H. Kessler: NMR spectroscopy in drug design (Hungarian-German-Italian-Polish Joint Meeting on Medicinal Chemistry, September 2 – 6, 2001, Budapest, Hungary). *Pure Appl. Chem.* **2001**, *73*, 1429 – 1436.
- [476] D. Gottschling, J. Boer, A. Schuster, B. Holzmann, H. Kessler: Cellular Solid-Phase Binding Assay and Mass Spectrometry for Screening of $\alpha_v\beta_7$ Integrin Antagonists. *Bioorg. Med. Chem. Lett.* **2001**, *11*, 2997 – 3000.
- [477] S. A. W. Gruner, G. Kéri, R. Schwab, A. Venetianer, H. Kessler: Sugar Amino Acid Containing Somatostatin Analogues that Induce Apoptosis in Both Drug-Sensitive and Multidrug-Resistant Tumor Cells. *Org. Lett.* **2001**, *3*, 3723 – 3725.
- [478] C. Klein, E. Planker, T. Diercks, H. Kessler, K.-P. Künkele, K. Lang, S. Hansen, M. Schwaiger: NMR Spectroscopy Reveals the Solution Dimerization Interface of p53 Core Domains Bound to Their Consensus DNA. *J. Biol. Chem.* **2001**, *276*, 49020 – 49027.
- [479] J. Boer, E. Locardi, A. Schuster, B. Holzmann, H. Kessler: β -D-Mannose Based Peptidomimetics in the Design of $\alpha_4\beta_1$ and $\alpha_v\beta_7$ Antagonists. In *Peptides: The Wave of the Future. Proc. 2nd Intern. and 17th American Peptide Symp., June 9 – 14, 2001, San Diego, California, USA* (Eds.: M. Lebl, R. A. Houghten). American Peptide Society, San Diego, **2001**, 612 – 613.
- [480] H. Kessler, J. Boer, D. Gottschling, N. Schmiedeberg, C. Rölz, V. Truffault, B. Holzmann, A. Schuster, M. Bürgle, O. Wilhelm, V. Magdolen, M. Schmitt: Peptidic Inhibitors for Protein-Protein Interactions at Cell Surfaces. In *Peptides: The Wave of the Future. Proc. 2nd Intern. and 17th American Peptide Symp., June 9 – 14, 2001, San Diego, California, USA* (Eds.: M. Lebl, R. A. Houghten). American Peptide Society, San Diego, **2001**, 647 – 649.
- [481] S. A. W. Gruner, H. Kessler, G. Kéri, A. Venetianer: Active Somatostatin Analogues Containig Sugar Amino Acids. In *Peptides: The Wave of the Future. Proc. 2nd Intern. and 17th American Peptide Symp., June 9 – 14, 2001, San Diego, California, USA* (Eds.: M. Lebl, R. A. Houghten). American Peptide Society, San Diego, **2001**, 664 – 665.
- [482] N. Schmiedeberg, H. Kessler: Reversible Backbone Protection Enables Combinatorial Solid-Phase Ring-Closing Metathesis Reaction (RCM) in Peptides. *Org. Lett.* **2002**, *4*, 59 – 62.
- [483] S. A. W. Gruner, E. Locardi, E. Lohof, H. Kessler: Carbohydrate-Based Mimetics in Drug Design: Sugar Amino Acids and Carbohydrate Scaffolds. *Chem. Rev.* **2002**, *102*, 491 – 514.
- [484] S. L. Goodman, G. Hölzemann, G. A. G. Sulyok, H. Kessler: Nanomolar Small Molecule Inhibitors for $\alpha_v\beta_6$, $\alpha_v\beta_5$, and $\alpha_v\beta_3$ Integrins. *J. Med. Chem.* **2002**, *45*, 1045 – 1051.

- [485] E. Guthaus, M. Bürgle, N. Schmiedeberg, S. Hocke, A. Eickler, M. D. Kramer, C. G. J. F. Sweep, V. Magdolen, H. Kessler, M. Schmitt: uPA-Silica-Particles (SP-uPA): A Novel Analytical System to Investigate uPA-uPAR Interaction and to Test Synthetic uPAR Antagonists as Potential Cancer Therapeutics. *Biol. Chem.* **2002**, *383*, 207–216.
- [486] H. Lüttgen, R. Robelek, R. Mühlberger, T. Diercks, S. C. Schuster, P. Köhler, H. Kessler, A. Bacher, G. Richter: Transcriptional Regulation by Antitermination. Interaction of RNA with NusB Protein and NusB/NusE Protein Complex of *Escherichia coli*. *J. Mol. Biol.* **2002**, *316*, 875–885.
- [487] K. E. Gottschalk, R. Günther, H. Kessler: A Three-State Mechanism of Integrin Activation and Signal Transduction for Integrin $\alpha_5\beta_3$. *ChemBioChem* **2002**, *3*, 470–473.
- [488] D. Gottschling, J. Boer, L. Marinelli, G. Voll, M. Haupt, A. Schuster, B. Holzmann, H. Kessler: Synthesis and NMR Structure of Peptidomimetic $\alpha_4\beta_7$ -Integrin Antagonists. *ChemBioChem* **2002**, *3*, 575–578.
- [489] K. E. Gottschalk, P. D. Adams, A. T. Brunger, H. Kessler: Transmembrane signal transduction of the $\alpha_{11b}\beta_3$ integrin. *Protein Science* **2002**, *11*, 1800–1812.
- [490] K. Prechtel, A. R. Bausch, V. Marchi-Artzner, M. Kantlehner, H. Kessler, R. Merkel: Dynamic Force Spectroscopy to Probe Adhesion Strength of Living Cells. *Phys. Rev. Lett.* **2002**, *89*, 028101-1–028101-4.
- [491] B. Jeschke, J. Meyer, A. Jonczyk, H. Kessler, P. Adamietz, N. M. Meenen, M. Kantlehner, C. Goepfert, B. Nies: RGD-peptides for tissue engineering of articular cartilage. *Biomaterials* **2002**, *23*, 3455–3463.
- [492] M. Stöckle, G. Voll, R. Günther, E. Lohof, E. Locardi, S. Gruner, H. Kessler: Synthesis and NMR Studies of Cyclopeptides Containing a Sugar Amino Acid. *Org. Lett.* **2002**, *4*, 2501–2504.
- [493] D. Weber, C. Berger, T. Heinrich, P. Eickelmann, J. Antel, H. Kessler: Systematic Optimization of a Lead-Structure Identities for a Selective Short Peptide Agonist for the Human Orphan Receptor BRS-3. *J. Peptide Sci.* **2002**, *8*, 461–475.
- [494] D. Gottschling, J. Boer, A. Schuster, B. Holzmann, H. Kessler: Combinatorial and Rational Strategies To Develop Nonpeptidic $\alpha_4\beta_7$ -Integrin Antagonists from Cyclic Peptides. *Angew. Chem.* **2002**, *114*, 3133–3137; *Angew. Chem., Int. Ed.* **2002**, *41*, 3007–3011.
- [495] S. A. W. Gruner, V. Truffault, G. Voll, E. Locardi, M. Stöckle, H. Kessler: Design, Synthesis, and NMR Structure of Linear and Cyclic Oligomers Containing Novel Furanoid Sugar Amino Acids. *Chem. Eur. J.* **2002**, *8*, 4365–4376.
- [496] S. Sato, C. Kopitz, W. A. Schmalix, B. Muehlenweg, H. Kessler, M. Schmitt, A. Krüger, V. Magdolen: High-affinity urokinase-derived cyclic peptides inhibiting urokinase/urokinase receptor-interaction: effects on tumor growth and spread. *FEBS Lett.* **2002**, *528*, 212–216.
- [497] K.-E. Gottschalk, H. Kessler: The Structures of Integrins and Integrin-Ligand Complexes: Implications for Drug Design and Signal Transduction. *Angew. Chem., Int. Ed.* **2002**, *41*, 3767–3774; *Angew. Chem.* **2002**, *114*, 3919–3927.
- [498] M. Bürgle, S. Sperl, J. Stürzebecher, A. Krüger, W. Schmalix, H. Kessler, L. Moroder, V. Magdolen, O. G. Wilhelm, M. Schmitt: The urokinase-type plasminogen activator (uPA) system: a new target for tumor therapy. In *Proteinase and Peptidase Inhibition: Recent potential targets for drug Development* (Eds.: H. J. Smith, C. Simons). Taylor & Francis, London, New York, **2002**, 231–248.
- [499] N. Schmiedeberg, M. Schmitt, C. Rölz, V. Truffault, M. Sukopp, M. Bürgle, O. G. Wilhelm, W. Schmalix, V. Magdolen, H. Kessler: Synthesis, Solution Structure, and Biological Evaluation of Urokinase Type Plasminogen Activator (uPA)-Derived Receptor Binding Domain Mimetics. *J. Med. Chem.* **2002**, *45*, 4984–4994.
- [500] Z. Szabó, M. Tönnis, H. Kessler, M. Feldbrügge: Structure-function analysis of lipopeptide pheromones from the plant pathogen *Ustilago maydis*. *Mol. Genet. Genomics* **2002**, *268*, 362–370.
- [501] M. Sukopp, L. Marinelli, M. Heller, T. Brandl, S. L. Goodman, R. W. Hoffmann, H. Kessler: Designed Beta-Turn Mimic Based on the Allylic-Strain Concept: Evaluation of Structural and Biological Features by Incorporation into a Cyclic RGD Peptide (Cyclo(-L-arginylglycyl-L- α -aspartyl-)). *Helv. Chim. Acta* **2002**, *85*, 4442–4452.
- [502] T. Arndt, D. Gottschling, J. Boer, A. Schuster, B. Holzmann, H. Kessler: Peptide derived non-peptidic $\alpha_4\beta_7$ -integrin antagonists. In *Peptides 2002. Proc. 27th European Peptide Symp., Aug. 31 – Sept. 6, 2002, Sorrento, Italy* (Eds.: E. Benedetti, C. Pedone). Edizioni Ziino, Napoli, **2002**, 22–23.

- [503] G. Thumshirn, G. A. G. Sulyok, D. Weber, S. L. Goodman, M. Wiesner, H. Kessler: Synthesis and biological evaluation of highly active nonpeptidic $\alpha_v\beta_3$ integrin antagonists. In *Peptides 2002. Proc. 27th European Peptide Symp., Aug. 31 – Sept. 6, 2002, Sorrento, Italy* (Eds.: E. Benedetti, C. Pedone). Edizioni Ziino, Napoli, **2002**, 298 – 299.
- [504] C. Dahmen, U. Hersel, M. Kantlehner, J. Auernheimer, D. Finsinger, J. Meyer, P. Schaffner, A. Jonczyk, B. Diefenbach, B. Nies, H. Kessler: Biofunctionalization of different surface types via $\alpha_v\beta_3$ integrin selective RGD peptides. In *Peptides 2002. Proc. 27th European Peptide Symp., Aug. 31 – Sept. 6, 2002, Sorrento, Italy* (Eds.: E. Benedetti, C. Pedone). Edizioni Ziino, Napoli, **2002**, 456 – 457.
- [505] M. Sukopp, L. Marinelli, M. Heller, T. Brandl, R. W. Hoffmann, H. Kessler: Evaluation of structural features of a designed beta-turn mimic by incorporation into a cyclic RGD peptide. In *Peptides 2002. Proc. 27th European Peptide Symp., Aug. 31 – Sept. 6, 2002, Sorrento, Italy* (Eds.: E. Benedetti, C. Pedone). Edizioni Ziino, Napoli, **2002**, 898 – 899.
- [506] C. Gilon, C. Mang, E. Lohof, A. Friedler, H. Kessler: Synthesis of Cyclic Peptides. In *Houben-Weyl: Methods of Organic Chemistry. Vol. E22b: Synthesis of Peptides and Peptidomimetics* (Eds.: M. Goodman, A. Felix, L. Moroder, C. Toniolo). Thieme, Stuttgart, New York, **2003**, 461 – 542.
- [507] E. Locardi, H. Kessler: High Resolution NMR Spectroscopy. In *Houben-Weyl: Methods of Organic Chemistry. Vol. E22b: Synthesis of Peptides and Peptidomimetics* (Eds.: M. Goodman, A. Felix, L. Moroder, C. Toniolo). Thieme, Stuttgart, New York, **2003**, 670 – 679.
- [508] C. Gilon, M. A. Dechantsreiter, F. Burkhart, A. Friedler, H. Kessler: Synthesis of N-Alkylated Peptides. In *Houben-Weyl: Methods of Organic Chemistry. Vol. E22c: Synthesis of Peptides and Peptidomimetics* (Eds.: M. Goodman, A. Felix, L. Moroder, C. Toniolo). Thieme, Stuttgart, New York, **2003**, 215 – 271.
- [509] J. Gante, H. Kessler, C. Gibson: Synthesis of Azapeptides. In *Houben-Weyl: Methods of Organic Chemistry. Vol. E22c: Synthesis of Peptides and Peptidomimetics* (Eds.: M. Goodman, A. Felix, L. Moroder, C. Toniolo). Thieme, Stuttgart, New York, **2003**, 311 – 323.
- [510] E. Gräfin von Roedern, M. A. Born, M. Stöckle, H. Kessler: Synthesis of Peptides with Sugar Amino Acids. In *Houben-Weyl: Methods of Organic Chemistry. Vol. E22c: Synthesis of Peptides and Peptidomimetics* (Eds.: M. Goodman, A. Felix, L. Moroder, C. Toniolo). Thieme, Stuttgart, New York, **2003**, 807 – 821.
- [511] V. Marchi-Artzner, B. Lorz, C. Gosse, L. Jullien, R. Merkel, H. Kessler, E. Sackmann: Adhesion of Arg-Gly-Asp (RGD) Peptide Vesicles onto an Integrin Surface: Visualization of the Segregation of RGD Ligands into the Adhesion Plaques by Fluorescence. *Langmuir* **2003**, *19*, 835 – 841.
- [512] H. Kessler, M. Heller, G. Gemmecker, T. Diercks, E. Planker, M. Coles: NMR in Medicinal Chemistry. In *Small Molecule – Protein Interactions. Ernst Schering Research Foundation, Workshop 42* (Eds.: H. Waldmann, M. Koppitz). Springer, Berlin, Heidelberg, **2003**, 59 – 85.
- [513] C. Dahmen, A. Janotta, D. Dimova-Malinovska, S. Marx, B. Jeschke, B. Nies, H. Kessler, M. Stutzmann: Surface functionalization of amorphous silicon and silicon suboxides for biological applications. *Thin Solid Films* **2003**, *427*, 201 – 207.
- [514] R. Mühlberger, R. Robelek, W. Eisenreich, C. Ettenhuber, E. K. Sinner, H. Kessler, A. Bacher, G. Richter: RNA DNA Discrimination by the Antitermination Protein NusB. *J. Mol. Biol.* **2003**, *327*, 973 – 983.
- [515] E. Guthaus, N. Schmiedeberg, M. Bürgle, V. Magdolen, H. Kessler, M. Schmitt: The Urokinase Receptor (uPAR, CD87) as a Target for Tumor Therapy: uPA-Silica Particles (SP-uPA) as a New Tool for Assessing Synthetic Peptides to Interfere with uPA/uPA-Receptor Interaction. *Recent Results Cancer Res.* **2003**, *162*, 3 – 14.
- [516] D. Weber, C. Berger, P. Eickelmann, J. Antel, H. Kessler: Design of Selective Peptidomimetic Agonists for the Human Orphan Receptor BRS-3. *J. Med. Chem.* **2003**, *46*, 1918 – 1930.
- [517] G. Thumshirn, U. Hersel, S. L. Goodman, H. Kessler: Multimeric Cyclic RGD Peptides as Potential Tools for Tumor Targeting: Solid-Phase Peptide Synthesis and Chemo-selective Oxime Ligation. *Chem. Eur. J.* **2003**, *9*, 2717 – 2725.
- [518] R. M. van Well, L. Marinelli, K. Erkelens, G. A. van der Marel, A. Lavecchia, H. S. Overkleeft, J. H. van Boom, H. Kessler, M. Overhand: Synthesis and Structural Analysis of Cyclic Oligomers Consisting of Furanoid and Pyranoid ϵ -Sugar Amino Acids. *Eur. J. Org. Chem.* **2003**, 2303 – 2313.

- [519] S. Hapke, H. Kessler, B. Lubner, A. Benge, P. Hutzler, H. Höfler, M. Schmitt, U. Reuning: Ovarian Cancer Cell Proliferation and Motility Is Induced by Engagement of Integrin $\alpha_v\beta_3$ /Vitronectin Interaction. *Biol. Chem.* **2003**, *384*, 1073 – 1083.
- [520] J. Furrer, A. Enthart, A. Kühlewein, A. Dehner, C. Klein, S. Hansen, M. Schwaiger, H. Kessler, G. Gemmecker: Letter to the Editor: Backbone ^1H , ^{13}C and ^{15}N resonance assignments for the 25.8 kDa DNA binding domain of the human p63 protein. *J. Biomol. NMR* **2003**, *26*, 377 – 378.
- [521] U. Reuning, S. Sperl, C. Kopitz, H. Kessler, A. Krüger, M. Schmitt, V. Magdolen: Urokinase-type Plasminogen Activator (uPA) and its Receptor (uPAR): Development of Antagonists of uPA/uPAR Interaction and their Effects *In Vitro* and *In Vivo*. *Curr. Pharm. Des.* **2003**, *9*, 1529 – 1543.
- [522] B. Dittrich, T. Koritsánky, M. Grosche, W. Scherer, R. Flaig, A. Wagner, H. G. Krane, H. Kessler, C. Riemer, A. M. M. Scheurs, P. Luger: Reproducibility and transferability of topological properties; experimental charge density of the hexapeptide cyclo-(D,L-Pro)₂-(L-Ala)₄ monohydrate. *Acta Cryst.* **2002**, *B58*, 721 – 727.
- [523] U. Hersel, C. Dahmen, H. Kessler: RGD modified polymers: biomaterials for stimulated cell adhesion and beyond. *Biomaterials* **2003**, *24*, 4385 – 4415.
- [524] M. Coles, M. Heller, H. Kessler: NMR-based screening technologies. *Drug Discovery Today* **2003**, *8*, 803 – 810.
- [525] A. Dehner, J. Furrer, K. Richter, I. Schuster, J. Buchner, H. Kessler: NMR Chemical Shift Perturbation Study of the N-Terminal Domain of Hsp90 upon Binding of ADP, AMP-PNP, Geldanamycin, and Radicicol. *ChemBioChem* **2003**, *4*, 870 – 877.
- [526] R. M. van Well, L. Marinelli, C. Altona, K. Erkelens, G. Siegal, M. van Raaij, A. L. Llamas-Saiz, H. Kessler, E. Novellino, A. Lavecchia, J. M. van Boom, M. Overhand: Conformational Analysis of Furanoid ϵ -Sugar Amino Acid Containing Cyclic Peptides by NMR Spectroscopy, Molecular Dynamics Simulation, and X-ray Crystallography: Evidence for a Novel Turn Structure. *J. Am. Chem. Soc.* **2003**, *125*, 10822 – 10829.
- [527] R. Dawson, L. Müller, A. Dehner, C. Klein, H. Kessler, J. Buchner: The N-terminal Domain of p53 is Natively Unfolded. *J. Mol. Biol.* **2003**, *332*, 1131 – 1141.
- [528] L. Marinelli, A. Lavecchia, K.-E. Gottschalk, E. Novellino, H. Kessler: Docking Studies on $\alpha_v\beta_3$ Integrin Ligands: Pharmacophore Refinement and Implications for Drug Design. *J. Med. Chem.* **2003**, *46*, 4393 – 4404.
- [529] E. Mann, H. Kessler: New Oxazole-Based Peptidomimetics: Useful Building Blocks for the Synthesis of Orthogonally Protected Macrocyclic Scaffolds. *Org. Lett.* **2003**, *5*, 4567 – 4570.
- [530] E. Locardi, J. Boer, A. Modlinger, A. Schuster, B. Holzmann, H. Kessler: Synthesis and Structure-Activity Relationship of Manno-se-Based Peptidomimetics Selectively Blocking Integrin $\alpha_4\beta_7$ Binding to Mucosal Addressin Cell Adhesion Molecule-1. *J. Med. Chem.* **2003**, *46*, 5752 – 5762.
- [531] K.-E. Gottschalk, H. Kessler: Evidence for hetero-association of transmembrane helices of integrins. *FEBS Lett.* **2004**, *557*, 253 – 258.
- [532] R. Haubner, B. Kuhnast, C. Mang, W. A. Weber, H. Kessler, H.-J. Wester, M. Schwaiger: [^{18}F]Galacto-RGD: Synthesis, Radiolabeling, Metabolic Stability, and Radiation Dose Estimates. *Bioconjugate Chem.* **2004**, *15*, 61 – 69.
- [533] M. Heller, M. John, M. Coles, G. Bosch, W. Baumeister, H. Kessler: NMR Studies on the Substrate-binding Domains of the Thermosome: Structural Plasticity in the Protrusion Region. *J. Mol. Biol.* **2004**, *336*, 717 – 729.
- [534] B. Luy, K. Kobzar, H. Kessler: An Easy and Scalable Method for the Partial Alignment of Organic Molecules for Measuring Residual Dipolar Couplings. *Angew. Chem., Int. Ed.* **2004**, *43*, 1092 – 1094; *Angew. Chem.* **2004**, *116*, 1112 – 1115.
- [535] D. D. Boyd, H. Wang, H. Avila, N. U. Parikh, H. Kessler, V. Magdolen, G. E. Gallick: Combination of an Src Kinase Inhibitor with a Novel Pharmacological Antagonist of the Urokinase Receptor Diminishes *In Vitro* Colon Cancer Invasiveness. *Clinical Cancer Res.* **2004**, *10*, 1545 – 1555.
- [536] M. Wendeler, J. Hoernschemeyer, M. John, N. Werth, M. Schoeniger, T. Lemm, R. Hartmann, H. Kessler, K. Sandhoff: Expression of the GM2-activator protein in the methylotrophic yeast *Pichia pastoris*, purification, isotopic labeling, and biophysical characterization. *Protein Expr. Purif.* **2004**, *34*, 147 – 157.
- [537] R. Haubner, F. Bruchertseifer, M. Bock, H. Kessler, M. Schwaiger, H.-J. Wester: Synthesis and biological evaluation of a $^{99\text{m}}\text{Tc}$ -labelled cyclic RGD peptide for imaging the $\alpha_v\beta_3$ expression. *Nuklearmedizin* **2004**, *43*, 26 – 32.

- [538] M. John, M. Heller, M. Coles, G. Bosch, W. Baumeister, H. Kessler: Letter to the Editor: ^1H , ^{15}N and ^{13}C resonance assignments of α -ADT and β -ADT. *J. Biomol. NMR* **2004**, *29*, 209 – 210.
- [539] F. Kramer, M. V. Deshmukh, H. Kessler, S. J. Glaser: Residual Dipolar Coupling Constants: An Elementary Derivation of Key Equations. *Concepts Magn. Reson.* **2004**, *21A*, 10 – 21.
- [540] M. Arnold, E. A. Cavalcanti-Adam, R. Glass, J. Blümmel, W. Eck, M. Kantelehner, H. Kessler, J. P. Spatz: Activation of Integrin Function by Nanopatterned Adhesive Interfaces. *ChemPhysChem* **2004**, *5*, 383 – 388.
- [541] C. Riemer, T. Bayer, H. Schmitt, H. Kessler: 3-Azido-aspartic acid derivatives – orthogonally protected precursors for the stereoselective incorporation of 2,3-diaminosuccinic acid into peptide structures. *J. Peptide Res.* **2004**, *63*, 196 – 199.
- [542] T. Poethko, M. Schottelius, G. Thumshirn, U. Hersel, M. Herz, G. Henriksen, H. Kessler, M. Schwaiger, H.-J. Wester: Two-Step Methodology for High-Yield Routine Radiohalogenation of Peptides: ^{18}F -Labeled RGD and Octreotide Analogs. *J. Nucl. Med.* **2004**, *45*, 892 – 902.
- [543] K.-E. Gottschalk, M. Soskine, S. Schuldiner, H. Kessler: A Structural Model of EmrE, a Multi-Drug Transporter from *Escherichia coli*. *Biophys. J.* **2004**, *86*, 3335 – 3348.
- [544] K.-E. Gottschalk, H. Kessler: A Computational Model of Transmembrane Integrin Clustering. *Structure* **2004**, *12*, 1109 – 1116.
- [545] S. Pallu, R. Baillel, M. Dard, H. Kessler, A. Jonczyk, M. Vernizeau, J. Amédée-Vilamitjana: A cyclo peptide activates signaling events and promotes growth and the production of the bone matrix. *Peptides* **2003**, *24*, 1349 – 1357.
- [546] M. Haupt, M. Coles, V. Truffault, M. Bramkamp, K. Altendorf, H. Kessler: Letter to the Editor: ^1H , ^{13}C and ^{15}N resonance assignment of the nucleotide binding domain of KdpB from *Escherichia coli*. *J. Biomol. NMR* **2004**, *29*, 437 – 438.
- [547] L. Marinelli, K.-E. Gottschalk, A. Meyer, E. Novellino, H. Kessler: Human Integrin $\alpha_v\beta_5$: Homology Modeling and Ligand Binding. *J. Med. Chem.* **2004**, *47*, 4166 – 4177.
- [548] A. Kühlewein, G. Voll, B. Hernandez Alvarez, H. Kessler, G. Fischer, J.-U. Rahfeld, G. Gemmecker: Solution structure of *Escherichia coli* Par10: The prototypic member of the Parvulin family of peptidyl-prolyl *cis/trans* isomerases. *Protein Sci.* **2004**, *13*, 2378 – 2387.
- [549] M. Haupt, M. Bramkamp, M. Coles, K. Altendorf, H. Kessler: Inter-domain Motions of the N-domain of the KdpFABC Complex, a P-type ATPase, are not Driven by ATP-induced Conformational Changes. *J. Mol. Biol.* **2004**, *342*, 1547 – 1558.
- [550] J. C. Freudenberger, P. Spittler, R. Bauer, H. Kessler, B. Luy: Stretched Poly(dimethylsiloxane) Gels as NMR Alignment Media for Apolar and Weakly Polar Organic Solvents: In Ideal Tool for Measuring RDCs at Low Molecular Concentrations. *J. Am. Chem. Soc.* **2004**, *126*, 14690 – 14691.
- [551] C. Dahmen, J. Auernheimer, A. Meyer, A. Enderle, S. L. Goodman, H. Kessler: Improving Implant Materials by Coating with Nonpeptidic, Highly Specific Integrin Ligands. *Angew. Chem., Int. Ed.* **2004**, *43*, 6649 – 6652; *Angew. Chem.* **2004**, *116*, 6818 – 6821.
- [552] M. Schottelius, T. Poethko, M. Herz, J.-C. Reubi, H. Kessler, M. Schwaiger, H.-J. Wester: First ^{18}F -Labeled Tracer Suitable for Routine Clinical Imaging of sst Receptor-Expressing Tumors Using Positron Emission Tomography. *Clinical Cancer Res.* **2004**, *10*, 3593 – 3606.
- [553] T. Poethko, M. Schottelius, G. Thumshirn, M. Herz, R. Haubner, G. Henriksen, H. Kessler, M. Schwaiger, H.-J. Wester: Chemoselective pre-conjugate radiohalogenation of unprotected mono- and multimeric peptides via oxime formation. *Radiochimica Acta* **2004**, *92*, 317 – 327.
- [554] J. C. Freudenberger, S. Knör, K. Kobzar, D. Heckmann, T. Paululat, H. Kessler, B. Luy: Stretched Poly(vinyl acetate) Gels as NMR Alignment Media for the Measurement of Residual Dipolar Couplings in Polar Organic Solvents. *Angew. Chem., Int. Ed.* **2005**, *44*, 423 – 426; *Angew. Chem.* **2005**, *117*, 427 – 430.
- [555] V. Beck, H. Herold, A. Benge, B. Luber, P. Hutzler, H. Tschesche, H. Kessler, M. Schmitt, H.-G. Geppert, U. Reuning: ADAM15 decreases integrin $\alpha_v\beta_3$ /vitronectin-mediated ovarian cancer cell adhesion and motility in an RGD-dependent fashion. *Int. J. Biochem. & Cell Biol.* **2005**, *37*, 590 – 603.
- [556] E. Lieb, M. Hacker, J. Tessmar, L. A. Kunz-Schughart, J. Fiedler, C. Dahmen, U. Hersel, H. Kessler, M. B. Schulz, A. Göpferich: Mediating specific cell adhesion to low-adhesive diblock copolymers by instant modification with cyclic RGD peptides. *Biomaterials* **2005**, *26*, 2333 – 2341.

- [557] M. V. Deshmukh, G. Voll, A. Kühlewein, H. Mäcke, J. Schmitt, H. Kessler, G. Gemmecker: NMR Studies Reveal Structural Differences between the Gallium and Yttrium Complexes of DOTA-D-Phe¹-Tyr³-octreotide. *J. Med. Chem.* **2005**, *48*, 1506 – 1514.
- [558] M. Sukopp, R. Schwab, L. Marinelli, E. Biron, M. Heller, E. Várkonyi, A. Pap, E. Novellino, G. Kéri, H. Kessler: Structure-Activity Relationship Studies Optimizing the Antiproliferative Activity of Novel Cyclic Somatostatin Analogues Containing a Restrained Cyclic β -Amino Acid. *J. Med. Chem.* **2005**, *48*, 2916 – 2926.
- [559] R. Haubner, W. A. Weber, A. J. Beer, E. Vabulienė, D. Reim, M. Sarbia, K.-F. Becker, M. Goebel, R. Hein, H.-J. Wester, H. Kessler, M. Schwaiger: Noninvasive Visualization of the Activated $\alpha_v\beta_3$ Integrin in Cancer Patients by Positron Emission Tomography and [¹⁸F]Galacto-RGD. *PLoS Medicine* **2005**, *2*, 244 – 252.
- [560] K. Kobzar, H. Kessler, B. Luy: Stretched Gelatin Gels as Chiral Alignment Media for the Discrimination of Enantiomers by NMR Spectroscopy. *Angew. Chem., Int. Ed.* **2005**, *44*, 3145 – 3147; *Angew. Chem.* **2005**, *117*, 3205 – 3207.
- [561] B. Luy, K. Kobzar, S. Knör, J. Furrer, D. Heckmann, H. Kessler: Orientational Properties of Stretched Polystyrene Gels in Organic Solvents and the Suppression of Their Residual ¹H NMR Signals. *J. Am. Chem. Soc.* **2005**, *127*, 6459 – 6465.
- [562] E. Biron, H. Kessler: Convenient Synthesis of N-Methylamino Acids Compatible with Fmoc Solid-Phase Peptide Synthesis. *J. Org. Chem.* **2005**, *70*, 5183 – 5189.
- [563] L. Marinelli, A. Meyer, D. Heckmann, A. Lavecchia, E. Novellino, H. Kessler: Ligand Binding Analysis for Human $\alpha_5\beta_1$ Integrin: Strategies for Designing New $\alpha_5\beta_1$ Integrin Antagonists. *J. Med. Chem.* **2005**, *48*, 4204 – 4207.
- [564] T. Arndt, U. Arndt, U. Reuning, H. Kessler: Integrins in Angiogenesis: Implications for Tumor Therapy. In *Cancer Therapy. Molecular Targets in Tumor-Host Interactions* (Ed.: G. F. Weber). Horizon Bioscience, Norfolk (UK), **2005**, 93 – 141.
- [565] A. Dehner, C. Klein, S. Hansen, L. Müller, J. Buchner, M. Schwaiger, H. Kessler: Cooperative Binding of p53 to DNA: Regulation by Protein-Protein Interactions through a Double Salt Bridge. *Angew. Chem., Int. Ed.* **2005**, *44*, 5247 – 5251; *Angew. Chem.* **2005**, *117*, 5381 – 5386.
- [566] H. Schwalbe, H. U. Stilz, H. Kessler: NMR Spectroscopy of Biomacromolecules in Drug Discovery and Beyond. *ChemBioChem* **2005**, *6*, 1475 – 1478.
- [567] A. Dehner, H. Kessler: Diffusion NMR Spectroscopy: Folding and Aggregation of Domains in p53. *ChemBioChem* **2005**, *6*, 1550 – 1565.
- [568] J. Klages, C. Neubauer, M. Coles, H. Kessler, B. Luy: Structure Refinement of Cyclosporin A in Chloroform by Using RDCs Measured in a Stretched PDMS-Gel. *ChemBioChem* **2005**, *6*, 1672 – 1678.
- [569] J. Auernheimer, D. Zukowski, C. Dahmen, M. Kantlehner, A. Enderle, S. L. Goodman, H. Kessler: Titanium Implant Materials with Improved Biocompatibility via Coating with Cyclic RGD-Peptides via Phosphonates. *ChemBioChem* **2005**, *6*, 2034 – 2040.
- [570] K. Kobzar, H. Kessler, B. Luy: Stretched Gelatin Gels as Chiral Alignment Media for the Discrimination of Enantiomers by NMR Spectroscopy. *Angew. Chem., Int. Ed.* **2005**, *44*, 3145 – 3147; *Angew. Chem.* **2005**, *117*, 3205 – 3207.
- [571] H.-J. Wester, H. Kessler: Molecular Targeting with Peptides or Peptide-Polymer-Conjugates: just a question of size? *J. Nucl. Med.* **2005**, *46*, 1940 – 1945.
- [572] J. Auernheimer, C. Dahmen, U. Hersel, A. Bausch, H. Kessler: Photoswitched cell adhesion on surfaces with RGD peptides. *J. Am. Chem. Soc.* **2005**, *127*, 16107 – 16110.
- [573] T. Weide, L. Arve, H. Prinz, H. Waldmann, H. Kessler: 3-Substituted Indolizine-1-carbonitrile Derivatives as Phosphatase Inhibitors. *Bioorg. Med. Chem. Lett.* **2006**, *16*, 59 – 63.
- [574] J. Auernheimer, H. Kessler: Benzylprotected aromatic phosphonic acids for anchoring peptides on titanium. *Bioorg. Med. Chem. Lett.* **2006**, *16*, 271 – 273.
- [575] S. Cesana, J. Auernheimer, R. Jordan, H. Kessler, O. Nuyken: First Poly(2-oxazoline)s with Pendant Amino Groups. *Macromol. Chem. Phys.* **2006**, *207*, 183 – 192.
- [576] Y. Tomita, N. Marchenko, S. Erster, A. Nemajerova, A. Dehner, C. Klein, H. Pan, H. Kessler, P. Pancoska, U. M. Moll: WT p53 but not tumor-derived mutants bind to Bcl2 via the DNA binding domain and induce mitochondrial permeabilization. *J. Biol. Chem.* **2006**, *281* (14), 8600 – 8606.
- [577] E. Biron, J. Chatterjee, H. Kessler: Optimized Selective N-Methylation of Peptides on Solid Support. *J. Peptide Sci.* **2006**, *12*, 213 – 219.

- [578] K. Richter, S. Moser, F. Hagn, R. Friedrich, O. Hainzl, M. Heller, S. Schlee, H. Kessler, J. Reinstein, J. Buchner: Intrinsic Inhibition of the Hsp90 ATPase activity. *J. Biol. Chem.* **2006**, *281*, 11301 – 11311.
- [579] J. Auernheimer, R. Haubner, M. Schottelius, H.-J. Wester, H. Kessler: Radio-analytical determination of the coating efficiency of cyclic RGD-peptides. *Helv Chim Acta* **2006**, *89*, 833 – 840.
- [580] N. Walter, C. Selhuber, H. Kessler, J. P. Spatz: Cellular Unbinding Forces of Initial Adhesion processes on Nanopatterned Surfaces Probed with Magnetic Tweezers: *Nano Lett.* **2006**, *6*, 3, 398 – 402.
- [581] E. A. Cavalcanti-Adam, A. Micoulet, J. Blümmel, J. Auernheimer, H. Kessler, J. P. Spatz: Lateral spacing of integrin ligands influences cell spreading and focal adhesion assembly. *Eur. J. Cell Biol.* **2006**, *85* (3 – 4), 219 – 224.
- [582] M. Haupt, M. Bramkamp, M. Heller, M. Coles, G. Deckers-Hebestreit, B. Herkenhoff-Hesselmann, K. Altendorf, H. Kessler: The Holo-form of the Nucleotide Binding Domain of the KdpFABC Complex from *E. coli* Reveals a New Binding Mode. *J. Biol. Chem.* **2006**, *281*(14), 9641 – 9649.
- [583] M. Haupt, M. Bramkamp, M. Coles, H. Kessler, K. Altendorf: The Prokaryotic Kdp-ATPase: Recent Insights in Structure and Function of KdpB. *J. Mol. Microbiol. Biotechnol.* **2006**, *10*, 120 – 131.
- [584] J. Klages, M. Coles, H. Kessler: NMR-Based Screening: A Powerful Tool in Fragment-Based Drug Discovery. In *Exploiting Chemical Diversity for Drug Discovery, Chapter 12* (Eds.: P. A. Bartlett, M. Entzeroth). RSC Publishing, Cambridge (UK), 2006, 263 – 290 and *Mol. BioSyst.* **2006**, *2*, 318 – 332 or *Analyst* **2007**, *132*, 693 – 705.
- [585] M. John, M. Wendeler, M. Heller, K. Sandhoff, H. Kessler: Characterization of Human Saposins by NMR Spectroscopy. *Biochemistry* **2006**, *45*, 5206 – 5216.
- [586] E. Biron, J. Chatterjee, H. Kessler: Solid-Phase Synthesis of Azole-Based Peptides and Peptidomimetics. *Org. Lett.* **2006**, *8* (11), 2417 – 2420.
- [587] U. Magdolen, J.-Auernheimer, C. Dahmen, J. Schauwecker, H. Gollwitzer, J. Tübel, R. Gradinger, H. Kessler, M. Schmitt, P. Diehl: Growth promoting in vitro effect of synthetic cyclic RGD-peptides on human osteoblast-like cells attached to cancellous bond. *Internat. J. Molecular Medicine* **2006**, *17*, 1017 – 1021.
- [588] D. Lössner, H. Kessler, G. Thumshirn, C. Dahmen, M. Tanaka, W. Knoll, E.-K. Sinner, U. Reuning: Monitoring of the Binding of Small Mono- and Oligomeric Integrin Ligands to Membrane-Embedded Integrins by Surface Plasmon-Enhanced Fluorescence Spectroscopy. *Analytical Chemistry* **2006**, *78* (13), 4524 – 4533.
- [589] M. V. Deshmukh, M. John, M. Coles, J. Peters, W. Baumeister, H. Kessler: Inter-domain orientation and motions in VAT-N explored by RDCs and ¹⁵N backbone relaxation. *Magn. Res. Chem.* **2006**, *44*, S89 – S100.
- [590] T. Weide, A. Modlinger, H. Kessler: Spatial Screening for the Identification of the Bioactive Conformation of Integrin Ligands. *Topics in Curr. Chemistry* **2007**, *272*, 1 – 50.
- [591] S. Knoer, B. Laufer, H. Kessler: Efficient enantioselective synthesis of condensed and aromatic ring-substituted tyrosine derivative. *J. Org. Chem.* **2006**, *71*, 15, 5625 – 5630.
- [592] A. Meyer, J. Auernheimer, A. Modlinger, H. Kessler: Targeting RGD Recognizing Integrins: Drug Development, Biomaterial Research, Tumor Imaging and Targeting. *Curr. Pharmaceutical Design* **2006**, *12*, 22, 2723 – 2747.
- [593] L. Römer, C. Klein, A. Dehner, H. Kessler, J. Buchner: p53 – a Natural Cancer Killer: Structural Insights and Therapeutic Concepts. *Angew. Chem., Int. Ed.* **2006**, *45*, 39, 6440 – 6460.
- [594] M. G. Friedel, J. C. Pieck, J. Klages, C. Dauth, H. Kessler, T. Carell: Synthesis and Stereochemical Assignment of DNA Spore Photoproduct Analogues. *Chem. Eur. J.* **2006**, *12*, 6081 – 6094.
- [595] M. Heller, M. Sukopp, N. Tsomaia, M. John, D. F. Mierke, B. Reif, H. Kessler: The Conformation of Cyclo(D-Pro-Ala₄): a Model for DL₄ Cyclic Pentapeptides. *J. Am. Chem. Soc.* **2006**, *128*, 13806 – 13814.
- [596] A. J. Beer, R. Haubner, M. Sarbia, M. Goebel, S. Luderschmidt, A. Ligia Grosu, O. Schnell, M. Niemeyer, H. Kessler, H.-J. Wester, W. A. Weber, M. Schwaiger: Positron Emission Tomography Using [¹⁸F] Galacto-RGD Identifies the Level of Integrin α_vβ₃ Expression in Man. *Clinical Cancer Res.* **2006**, *12* (13), 3942 – 3949.
- [597] J. Chatterjee, D. Mierke, H. Kessler: N-methylated Cyclic Penta-Alanine Peptides as Template Structures. *J. Am. Chem. Soc.* **2006**, *128*, 15164 – 15172.

- [598] M. J. Feige, F. Hagn, J. Eßer, H. Kessler, J. Buchner: Influence of the internal disulfide bridge on the folding pathway of the CL antibody domain. *J. Mol. Biol.* **2006**, 365, 1232–1244.
- [599] H. Kessler, J. Klages: NMR in Drug Discovery. In *Comprehensive Medicinal Chemistry II, Vol. 3* (Eds.: D. J. Triggle and J. B. Taylor). Elsevier, Oxford, 2006, 901–920.
- [600] J. Furrer, M. John, H. Kessler, B. Luy: J-Spectroscopy in the Presence of Residual Dipolar Couplings: Determination of One-Bond Coupling Constants and Scalable Resolution. *J. Biomol. NMR*, **2007**, 37 (3), 231–243.
- [601] D. Heckmann, A. Meyer, L. Marinelli, G. Zahn, R. Stragies, H. Kessler: Probing Integrin Selectivity: Rational Design of Highly Active and Selective Ligands for the $\alpha_5\beta_1$ and $\alpha_v\beta_3$ Integrin Receptor. *Angew. Chem., Int. Ed.* **2007**, 46, 3571–3574; *Angew. Chem.* **2007**, 119, 19, 3641–3644.
- [602] B. Luy, H. Kessler: Partial Alignment for Structure Determination of Organic Molecules. In *Handbook of Modern NMR-Methods* (Eds.: G. Webb, D. Craik). Kluwer Academic Publishers, Dordrecht (NL), **2007**, 1261–1267.
- [603] E. Ada Cavalcanti-Adam, T. Volberg, A. Micoulet, H. Kessler, B. Geiger, J. P. Spatz: Cell Spreading and Focal Adhesion Dynamics are Regulated by Spacing of Integrin Ligands. *Biophys. J.* **2007**, 92, 2964–2974.
- [604] F. Manzenrieder, A. Frank, T. Huber, C. Dorner-Ciossek, H. Kessler: Synthesis and biological evaluation of phosphino dipeptide isostere inhibitor of human β -secretase (BACE1). *Bioorg. & Med. Chem.*, **2007**, 15, 4136–4143.
- [605] S. Knör, A. Modlinger, T. Poethko, M. Schotelius, H.-J. Wester, H. Kessler: Synthesis of Novel 1,4,7,10-Tetraazacyclodecane-1,4,7,10-Tetraacetic Acid (DOTA) Derivatives for Chemospecific Attachment to Unprotected Polyfunctionalized Compounds. *Chemistry Eur. J.* **2007**, 13, 21, 6082–6090.
- [606] S. Takahashi, M. Leiss, M. Moser, T. Ohashi, T. Kitao, D. Heckmann, A. Pfeifer, H. Kessler, J. Takagi, H. P. Erickson, R. Fässler: The RGD motif in fibronectin is essential for development but dispensable for fibril assembly. *J. Cell Biol.* **2007**, 178, 1, 167–178.
- [607] M. López-García, H. Kessler: Stimulation of Bone growth on implants by integrin ligands. In *Handbook of Biomineralization, Chap. 8* (Eds.: M. Epple, E. Baeuerlein). Wiley, Weinheim, **2007**, 109–126.
- [608] S. V. Graeter, J. Huang, N. Perschmann, M. Lopez-Garcia, H. Kessler, J. Ding, J. P. Spatz: Mimicking Cellular Environments by Nanostructured Soft Interfaces. *Nanoletters*, **2007**, 7, 5, 1413–1418.
- [609] S. Knör, A. V. Khrenov, B. Laufer, E. L. Saenko, C. A. E. Hauser, H. Kessler: Development of a peptidomimetic ligand for efficient isolation and purification of factor VIII via affinity chromatography. *J. Med. Chem.* **2007**, 50, 4329–4339.
- [610] J. Blümmel, N. Perschmann, D. Aydin, J. Drinjakovic, T. Surrey, M. López-García, H. Kessler, J. P. Spatz: Protein Repellent Properties of Covalently Attached PEG Coatings on Nanostructured SiO₂ Based Interfaces. *Biomaterials* **2007**, 28, 4739–4747.
- [611] D. Heckmann, H. Kessler: Design and Chemical Synthesis of Integrin Ligands. *Methods in Enzymology* **2007**, 426, 463–503.
- [612] J. Furrer, M. John, H. Kessler, B. Luy: J-Spectroscopy in the Presence of Residual Dipolar Couplings: Determination of One-Bond Coupling Constants and Scalable Resolution. *J. Biomol. NMR* **2007**, 37, 231–243.
- [613] J. Klages, H. Kessler, S. J. Glaser, B. Luy: J-ONLY-TOCSY: Efficient Suppression of RDC-Induced Transfer in Homonuclear TOCSY Experiments Using JESTER-1-Derived Multiple Pulse Sequences. *J. Magn. Res.* **2007**, 189, 217–227.
- [614] O. Lieleg, M. López-García, C. Semmrich, J. Auernheimer, H. Kessler, A. R. Bausch: Specific integrin labelling in living cells using functionalized nanocrystals. *Small*, **2007**, 3, 9, 1560–1565.
- [615] S. Knör, S. Sato, T. Huber, A. Morgenstern, F. Bruchertseifer, M. Schmitt, H. Kessler, R. Senekowitsch-Schmidtke, V. Magdolen, C. Seidl: Development and evaluation of peptidic ligands targeting tumour-associated urokinase plasminogen activator receptor (uPAR) for use in α -emitter therapy of disseminated ovarian cancer. *Eur. J. of Nuclear Med. Mol. Imag.* **2008**, 35, 53–64.
- [616] J. Chatterjee, O. Ovadia, G. Zahn, L. Marinelli, A. Hoffman, C. Gilon, H. Kessler: Multiple N-Methylation by a Designed Approach Enhances Receptor Selectivity. *J. Med. Chem.* **2007**, 50, 5878–5881.
- [617] B. Luy, A. Frank, H. Kessler: Conformational Analysis of Drugs by NMR Spectroscopy. In *Molecular Drug Properties: Measurement and Prediction* (Eds.: R. Mannhold, H. Kubinyi, G. Folkers). Methods and Principles in Medicinal Chemistry, Vol. 37. Wiley, Weinheim, **2007**, 207–254.

- [618] J. Chatterjee, D. Mierke, H. Kessler: Conformational Preference and Potential Templates of N-Methylated Cyclic Pentaalanine Peptides, *Chemistry Eur. J.* **2008**, *14*, 5, 1508 – 1517.
- [619] S. Knör, A. Khrenov, B. Laufer, A. Benhida, S. C. Grailly, R. Schwaab, J. Oldenburg, J.-M. R. Saint-Remy, E. L. Saenko, C. A. E. Hauser, H. Kessler: Efficient factor VIII affinity purification using a small synthetic ligand. *J. Thromb. Haemostasis* **2008**, *6*, 3, 470 – 477.
- [620] E. Biron, J. Chatterjee, O. Ovadia, D. Lange-egger, J. Bruegger, D. Hoyer, H. Schmid, R. Jelinek, C. Gilon, A. Hoffman, H. Kessler: Improving Oral Bioavailability of Peptides by Multiple N-Methylation: Somatostatin Analogues. *Angew. Chem., Int. Ed.* **2008**, *47*, 14, 2595 – 2599.
- [621] T. Higuchi, F. M. Bengel, S. Seidl, P. Watzlowik, H. Kessler, R. Hegenloh, S. Reder, S. G. Nekolla, H.-J. Wester, M. Schwaiger: Assessment of $\alpha_v\beta_3$ Integrin Expression after Myocardial Infarction by Positron Emission Tomography. *Cardiovasc. Res.* **2008**, *78*, 395 – 403.
- [622] F. Manzenrieder, A. O. Frank, H. Kessler: Phosphorus NMR as Versatile Tool for Compound Library Screening. *Angew. Chem., Int. Ed.* **2008**, *47*, 14, 2608 – 2611.
- [623] A. O. Frank, H. Kessler: The sweetest candy for the virus. *Nature (News and Views)* **2008**, *452*, 822 – 823.
- [624] D. Heckmann, A. Meyer, B. Laufer, G. Zahn, R. Stragies, H. Kessler: Rational Design of Highly Active and Selective Ligands for $\alpha_5\beta_1$ Integrin Receptor. *ChemBioChem* **2008**, *9*, 1397 – 1407.
- [625] V. C. Hirschfeld-Warneken, M. Arnold, A. Cavalcanti-Adam, M. López-García, H. Kessler, J. P. Spatz: Cell Adhesion and Polarisation on Molecularly Defined Spacing Gradient Surfaces of Cyclic RGDfK Peptide Patches. *Eur. J. Cell Biol.* **2008**, *87*, 743 – 750.
- [626] S. Kalinina, H. Gliemann, M. Lopez-Garcia, J. Auernheimer, T. Schimmel, M. Bruns, A. Schambony, H. Kessler: D. Wedlich, Isothiocyanate-functionalized RGD-peptides as useful alternative in tailoring cell-adhesive surface patterns. *Biomaterials* **2008**, *29*, 3004 – 3013.
- [627] O. Demmer, I. Dijkgraaf, M. Schottelius, H.-J. Wester, H. Kessler: Introduction of Functional Groups into Peptides via N-Alkylation. *Org. Lett.* **2008**, *10*, 10, 2015 – 2018.
- [628] D. Kaufmann, A. Fiedler, A. Junger, J. Auernheimer, H. Kessler, R. Weberskirch: Chemical conjugation of linear and cyclic RGD moieties to a recombinant elastin-mi-metic polypeptide – A versatile approach towards bioactive protein hydrogels. *Macromol. Biosci.* **2008**, *8*, 6, 577 – 588.
- [629] J. Chatterjee, C. Gilon, A. Hoffman, H. Kessler: N-Methylation of Peptides: A New Perspective in Medicinal Chemistry. *Acc. Chem. Res.* **2008**, *41*, 1331 – 1342.
- [630] M. Arnold, V. C. Hirschfeld-Warneken, T. Lohmüller, P. Heil, J. Blummel, E. A. Cavalcanti-Adam, M. López-García, P. Walter, H. Kessler, B. Geiger, J. P. Spatz: Induction of cell polarization and migration by a gradient of nanoscale variations in adhesive ligand spacing. *Nanoletters*, **2008**, *8*, 7, 2063 – 2069.
- [631] M. J. Feige, S. Groscurth, M. Marcinowski, Z. T. Yew, V. Truffault, E. Paci, H. Kessler, J. Buchner: The structure of a folding intermediate explains differences in immunoglobulin amyloidogenicity. *PNAS* **2008**, *105*, 36, 13373 – 13378.
- [632] A. Enthart, J. C. Freudenberger, J. Furrer, H. Kessler, B. Luy: The CLIP/CLAP-HSQC: Pure Absorptive Spectra for the Measurement of One-Bond Couplings. *J. Magn. Res.* **2008**, *192*, 2, 314 – 322.
- [633] M. Pellecchia, I. Bertini, D. Cowburn, C. Dalvit, E. Giralt, W. Jahnke, T. L. James, S. W. Homans, H. Kessler, C. Luchinat, B. Meyer, H. Oshkinat, J. Peng, H. Schwalbe, G. Siegal: Perspectives on NMR in Drug Discovery: A Technique Comes of Age. *Nat. Rev. Drug Disc.* **2008**, *7*, 738 – 745.
- [634] G. Kummerlöwe, S. Knör, A. Frank, T. Paululat, H. Kessler, B. Luy: Deuterated Polymer Gels for Measuring Anisotropic NMR Parameters with Strongly Reduced Artefacts. *Chem. Comm.* **2008**, 5722 – 5724.
- [635] J. Klages, A. Kotsch, M. Coles, J. Nickel, T. Müller, H. Kessler: The solution structure of BMPR-1A reveals a local disorder-to-order transition upon BMP-2 binding. *Biochemistry* **2008**, *47*, 11930 – 11939.
- [636] C. Selhuber-Unkel, M. López-García, H. Kessler, J. P. Spatz: Cooperativity in Adhesion Cluster Formation during Initial Cell Adhesion. *Biophys. J.* **2008**, *95*, 5424 – 5431.
- [637] B. Laufer, J. Chatterjee, A. O. Frank, H. Kessler: Can N-Methylated Amino Acids Serve as Substitute for Prolines in Conformational Design of Cyclic Pentapeptides? *J. Pept. Sci.* **2009**, *15*, 141 – 146.
- [638] M. Arnold, M. Schwieder, J. Blummel, E. A. Cavalcanti-Adam, M. López-García, H. Kessler, B. Geiger, J. P. Spatz: Cell interactions with hierarchically structured nano-patterned adhesive surfaces: *Soft Matter* **2009**, *5*, 1, 72 – 77.

- [639] D. Heckmann, B. Laufer, L. Marinelli, V. Limongelli, E. Novellino, G. Zahn, R. Stragies, H. Kessler: Breaking the dogma of the Metal-Coordinating Carboxylate Group in Integrin ligands: Introducing Hydroxamic Acids to the MIDAS To Tune Potency and Selectivity. *Angew. Chem., Int. Ed.* **2009**, *48*, 4436 – 4440.
- [640] J. H. Huang, S. V. Graeter, F. Corbellini, S. Rinck, E. Bock, R. Kernkerner, H. Kessler, J. D. Ding, J. P. Spatz: Impact of Order and Disorder in RGD Nanopatterns on Cell Adhesion. *Nanoletters* **2009**, *9*, 1111 – 1116.
- [641] M. J. Pandya, H. Bendz, F. Manzenrieder, E. Noessner, H. Kessler, J. Buchner, R. D. Issels: Interaction of human heat shock protein 70 with tumour-associated peptides. *Biol. Chem.* **2009**, *390*, 305 – 312.
- [642] M. Spichthy, A. Taly, F. Hagn, H. Kessler, N. Winssinger, M. Karplus: The Hsp90 binding mode of a radicicol-like E-oxime from docking, binding free energy estimations, and NMR shifts. *Biophys. Chem.* **2009**, *143*, 111 – 123.
- [643] O. Schnell, B. Krebs, J. Carlsen, I. Stangier, C. Goetz, R. H. Goldbrunner, H.-J. Wester, R. Haubner, G. Pöpperl, M. Holtmannspötter, H. Kessler, J.-C. Tonn, M. Schwaiger, A. J. Beer: Imaging of Integrin $\alpha_v\beta_3$ Expression in Patients with Malignant Glioma by [^{18}F]Galacto-RGD Positron Emission Tomography. *Neuro-Oncology*, **2009**, *11*, 861 – 870.
- [644] M. Schottelius, B. Laufer, H. Kessler, H.-J. Wester: Ligands for mapping $\alpha_v\beta_3$ -integrin expression in vivo. *Acc. Chem. Res.* **2009**, *42*, 969 – 980.
- [645] M. J. Feige, S. Groscurth, M. Marciniowski, Y. Shimizu, H. Kessler, L. M. Hendershot, J. Buchner: An Unfolded C_1H_1 Domain Controls the Assembly and Secretion of IgG Antibodies. *Molecular Cell* **2009**, *34*, 5, 569 – 579.
- [646] T. Huber, F. Manzenrieder, C. A. Kuttruff, C. Dorner-Ciossek, H. Kessler: Prolonged stability by cyclization: Macrocyclic phosphino dipeptide isostere inhibitors of β -secretase (BACE1). *Bioorg. Med. Chem. Lett.* **2009**, *19*, 4427 – 4431.
- [647] M. Hoefling, H. Kessler, K.-E. Gottschalk: The Transmembrane Structure of Integrin $\alpha\text{IIb}\beta_3$: Significance to Signal Transduction. *Angew. Chem., Int. Ed.* **2009**, *48*, 6590 – 6593.
- [648] O. Demmer, A. O. Frank, H. Kessler: Design of Cyclic Peptides. In *Peptide and Protein Design for Biopharmaceutical Applications* (Ed.: K. J. Jensen). Wiley, Weinheim, **2009**, 133 – 176.
- [649] M. Retzlaff, M. Stahl, H. C. Eberl, S. Lagleder, J. Beck, H. Kessler, J. Buchner: Hsp90 is regulated by a switch point in the C-terminal domain. *EMBO Reports* **2009**, *10*, 1147 – 1153.
- [650] K.-H. Altmann, J. Buchner, H. Kessler, F. Diederich, B. Kräutler, S. Lippard, R. Liskamp, K. Müller, E. M. Nolan, B. Samori, G. Schneider, S. L. Schreiber, H. Schwalbe, C. Toniolo, C. A. A. van Boeckel, H. Waldmann, C. T. Walsh: The State of Art of Chemical Biology. *ChemBioChem* **2009**, *15*, 16 – 29.
- [651] F. Hagn, C. Klein, O. Demmer, N. Marchenko, A. Vaseva, U. M. Moll, H. Kessler: Bcl-xL Changes Conformation upon Binding to Wild-type but Not Mutant p53 DNA Binding Domain. *J. Biol. Chem.* **2010**, *285*(5), 3439 – 3450.
- [652] M. Retzlaff, F. Hagn, L. Mitschke, M. Hesslering, F. Gugel, H. Kessler, K. Richter, J. Buchner: Asymmetric activation of the Hsp90 dimer by its co-chaperone Aha1. *Mol. Cell* **2010**, *37*, 344.
- [653] C. Selhuber-Unkel, T. Erdmann, M. Lopez-Garcia, H. Kessler, U. S. Schwarz, J. P. Spatz: Cell Adhesion Strength is controlled by Intermolecular Spacing of Adhesion Receptors (featured article). *Biophys. J.* **2010**, *98*, 543 – 551.
- [654] F. Hagn, L. Eisoldt, J. Hardy, C. Vendrely, M. Coles, T. Scheibel, H. Kessler: A highly conserved spider silk domain acts as a molecular switch that controls fibre assembly. *Nature* **2010**, *465*, 239 – 242.
- [655] B. Laufer, A. O. Frank, J. Chatterjee, T. Neubauer, C. Mas-Moruno, G. Kummerlöwe, H. Kessler: The Impact of Amino Acid Side Chain Mutations in Conformational Design of Peptides and Proteins. *Chemistry Eur. J.* **2010**, *16*, 5385 – 5390.
- [656] O. Ovadia, S. Greenberg, B. Laufer, C. Gilon, A. Hofmann, H. Kessler: Improvement of Drug Like Properties of Peptides: The Somatostatin paradigm. *Expert Opin. Drug Discov.* **2010**, *5*, 7, 655 – 671.
- [657] A. G. F. de Beer, E. A. Cavalcanti-Adam, G. Majer, M. Lopez-Garcia, H. Kessler, J. P. Spatz, Force induced destabilization of adhesion complexes at defined integrin spacings on nanostructured surfaces. *Phys. Rev. E* **2010**, *81*, 051914 (1 – 7).
- [658] L. Doedens, F. Opperer, M. Cai, J. G. Beck, M. Dedek, E. Palmer, V. J. Hruba, H. Kessler: Multiple N-methylation of MT-II backbone amide bonds leads to melanocortin receptor subtype hMC1R selectivity. Pharmacological and conformational studies. *J. Amer. Chem. Soc.* **2010**, *132*, 23, 8115 – 8128.

- [659] S. Welker, B. Rudolph, E. Frenzel, F. Hagn, G. Liebisch, G. Schmitz, J. Scheuring, A. Kerth, A. Blume, S. Weinkauff, M. Haslbeck, H. Kessler, J. Buchner: Hsp12 is an Intrinsically Unstructured Stress Protein which folds upon Membrane Association and Modulates Membrane Function. *Mol. Cell*, **2010**, *39*, 4, 507 – 520.
- [660] D. Aydin, I. Louban, N. Perschmann, J. Blümmel, T. Lohmüller, E. A. Cavalcanti-Adam, T. L. Haas, H. Walczak, H. Kessler, R. Fiammengo, J. P. Spatz: Polymeric Substrates with Tunable Elasticity and Nanoscopically Controlled Biomolecule Presentation. *Langmuir* **2010**, *26*, 19, 15472 – 15480.
- [661] I. Varnay, V. Truffault, S. Djuranovic, A. Ursinus, M. Coles, H. Kessler: Optimized measurement temperature gives access to the solution structure of a 49 kDa homohe-xameric β -propeller. *J. Amer. Chem. Soc.* **2010**, *132*, 15692 – 15698.
- [662] A. O. Frank, E. Otto, C. Mas-Moruno, H. B. Schiller, L. Marinelli, S. Cosconati, A. Bochen, D. Vossmeier, G. Zahn, R. Stragies, E. Novellino, H. Kessler: Conformational Control of Integrin Subtype Selectivity in *iso*DGR Peptide Motifs: A Biological Switch. *Angew. Chem., Int. Ed.* **2010**, *49*, 9278 – 9281; *Angew. Chem.* **2010**, *122*, 9465 – 9468.
- [663] S. Kruss, T. Wolfram, R. Martin, S. Neubauer, H. Kessler, J. P. Spatz: Stimulation of Cell Adhesion at Nanostructured Teflon Interfaces. *Adv. Mater.* **2010**, *22*, 5499 – 5506.
- [664] F. Hagn, C. Thamm, T. Scheibel, H. Kessler: pH Dependent Dimerisation and Salt Dependent Stabilisation of the N-terminal Domain of Spider Dragline Silk – Implications for Fibre Formation. *Angew. Chem., Int. Ed.* **2011**, *50*, 310 – 313.
- [665] J. Fiedler, J. Groll, E. Engelhardt, P. Gasteier, C. Dahmen, H. Kessler, M. Moeller, R. E. Brenner: NCO-sP(EO-stat-PO) surface coatings preserve biochemical properties of RGD peptides. *Int. J. Mol. Medicine* **2011**, *27*, 139 – 146.
- [666] M. Amela-Cortes, V. Roullier, C. Wolpert, S. Neubauer, H. Kessler, O. Bedel, S. Mignani, V. Marchi-Artzner: Stable PEGylated Quantum Dots Micelles and their covalent coupling to small ligand of biological interest. *Chemcomm* **2011**, *47*, 1246 – 1248.
- [667] C. Mas-Moruno, F. Rechenmacher, H. Kessler: Cilengitide: the first anti-angiogenic small molecule drug candidate. Design, synthesis and clinical evaluation. *Anti-Cancer Agents Med. Chem.* **2010**, *10*, 753 – 768.
- [668] O. Ovadia, S. Greenberg, J. Chatterjee, B. Laufer, F. Opperer, H. Kessler, C. Gilon, A. Hoffman: The effect of multiple *N*-methylation on intestinal permeability of cyclic hexapeptides. *Mol. Pharmaceutics*, **2011**, *8*, 479 – 487.
- [669] J. Deeg, I. Louban, D. Aydin, C. Selhuber-Unkel, H. Kessler, J. Spatz: Impact of Local versus Global Ligand Density on Cellular Adhesion. *Nano Lett.* **2011**, *11*, 4, 1469 – 1476.
- [670] J. Chatterjee, B. Laufer, J. G. Beck, Z. Helyes, E. Pintér, J. Szolcsányi, A. Horvath, J. Mandl, J. C. Reubi, G. Kéri, H. Kessler: *N*-Methylated sst₂ Selective Somatostatin Cyclic Peptide Analogue as Potent Candidate for Treating Neurogenic Inflammation. *ACS Med. Chem. Lett.* **2011**, *2*, 7, 509 – 514.
- [671] A. J. Beer, H. Kessler, H.-J. Wester, M. Schwaiger: PET imaging of integrin $\alpha_v\beta_3$ expression. *Theranostics*, **2011**, *1*, 48 – 57.
- [672] T. A. Knappe, F. Manzenrieder, C. Mas-Moruno, U. Linne, F. Sasse, H. Kessler, X. Xie, M. A. Marahiel: Introducing Lasso Peptides as Molecular Scaffolds for Drug Design: Engineering of an Integrin Antagonist. *Angew. Chem., Int. Ed.* **2011**, *50*, 8873 – 8876.
- [673] F. Hagn, S. Lagleder, M. Retzlaff, J. Rohrbach, O. Demmer, K. Richter, J. Buchner, H. Kessler: Structural analysis of the interaction of the heat shock protein 90 with the tumor suppressor protein p53. *Nature Struct. Mol. Biol.*, **2011**, *18*, 1086 – 2114.
- [674] R. Knöll, W. Linke, P. Zou, S. Miocic, S. Kostin, C. H. Ku, S. Neef, M. Bug, K. Schafer, G. Knöll, L. E. Felkin, K. Toischer, F. Hagn, H. Kessler, M. Diddie, B. Buyandelger, T. Quentin, L. S. Maier, N. Teucher, B. Unsold, A. Schmidt, E. J. Birks, S. Gunkel, P. Lang, H. Granzier, W. Zimmermann, L. Field, G. Faulkner, M. Döbelstein, P. Barton, M. Sattler, M. Wilmanns, K. R. Chien: Telethonin deficiency is associated with maladaptation to biomechanical stress in the mammalian heart. *Circulation Res.*, **2011**, *109*, 7, 758 – 769.
- [675] O. Demmer, E. Gourni, U. Schumacher, H. Kessler, H.-J. Wester: PET imaging of CXCR4 receptors in cancer by a new optimized ligand. *ChemMedChem* **2011**, *6*, 10, 1789 – 1791.
- [676] C. Mas-Moruno, J. G. Beck, L. Doedens, A. O. Frank, L. Marinelli, S. Cosconati, E. Novellino, H. Kessler: Increasing $\alpha_v\beta_3$ Selectivity of the Anti-Angiogenic Drug Cilengitide by *N*-Methylation. *Angew. Chem., Int. Ed.* **2011**, *50*, 9496 – 9500; *Angew. Chem.* **2011**, *123*, 9668 – 9672.

- [677] E. Gourni, O. Demmer, M. Schottelius, C. D'Alessandria, I. Dijkgraaf, U. Schumacher, M. Schwaiger, H. Kessler, H.-J. Wester: PET-imaging of CXCR4 expression by a ^{68}Ga -labeled highly-specific targeted contrast agent. *J. Nucl. Med.* **2011**, *52*, 1803 – 1810.
- [678] O. Demmer, I. Dijkgraaf, U. Schumacher, L. Marinelli, S. Cosconati, E. Gourni, H.-J. Wester, H. Kessler: Design, Synthesis, and Functionalization of Dimeric Peptides Targeting Chemokine Receptor CXCR4. *J. Med. Chem.* **2011**, *54*, 7648 – 7662.
- [679] H. Kessler, F. Hagn, Struktur und Funktion von Spinnenseiden-Proteinen mit der NMR-Spektroskopie. *GIT* **2011**, *12*, 836 – 840.
- [680] A. B. Schmid, S. Lagleder, M. A. Gräwert, A. Röhl, F. Hagn, S. K. Wandinger, M. B. Cox, O. Demmer, K. Richter, M. Groll, H. Kessler, J. Buchner: The architecture of functional modules in the Hsp90 co-chaperone Sti1/Hop. *EMBO J.* **2012**, *31*, 1506 – 1517.
- [681] S. Weigelt, T. Huber, F. Hofmann, M. Jost, M. Ritzefeld, B. Luy, C. Freudenberger, Z. Majer, E. Vass, J.-C. Greie, L. Panella, B. Kaptein, Q. B. Broxterman, H. Kessler, K. Altendorf, M. Hollósi, N. Sewald: Synthesis and Conformational Analysis of Efraeptins. *Chem. – Eur. J.* **2012**, *18*, 478 – 487.
- [682] M. Bollinger, F. Manzenrieder, R. Kolb, A. Bochen, S. Neubauer, L. Marinelli, V. Limongelli, E. Novellino, G. Moessmer, R. Pell, W. Lindner, J. Fanous, A. Hoffman, H. Kessler: Tailoring of Integrin Ligands: Probing the Charge Capability of the Metal-Ion-Dependent Adhesion Site. *J. Med. Chem.* **2012**, *55*, 871 – 882.
- [683] J. Chatterjee, B. Laufer, H. Kessler: Synthesis of N-methylated cyclic peptides. *Nature protocols*, **2012**, *7*, 3, 432 – 444.
- [684] J. E. Mathejczyk, J. Pauli, C. Dullin, J. Napp, L.-F. Tietze, H. Kessler, U. Resch-Genger, F. Alves: Spectroscopically Well-Characterized RGD Optical Probe as a Prerequisite for Lifetime-Gated Tumor Imaging. *Mol. Imaging* **2011**, *10*, 6, 469 – 480.
- [685] M. Joner, Qi Cheng, S. Schönhofer-Merl, M. Lopez, S. Neubauer, C. Mas-Moruno, B. Laufer, F. D. Kolodgie, H. Kessler, R. Virmani: Polymer-Free Immobilization of a Cyclic RGD Peptide on a Nitinol Stent Promotes Integrin-dependent Endothelial Coverage of Strut Surfaces. *J. Biomedical Materials Research: Part B – Applied Biomaterials* **2012**, *100B*, 3, 637 – 645.
- [686] I. Martin, C. Dohmen, C. Mas-Moruno, C. Troiber, P. Kos, D. Schaffert, U. Lächelt, M. Teixidó, M. Günther, H. Kessler, E. Giralt, E. Wagner: Solid-phase-assisted synthesis of targeting peptide-PEG-oligo(ethane amino)amides for receptor-mediated gene delivery. *Org. Biomol. Chem.* **2012**, *10*, 16, 3258 – 3268.
- [687] F. C. Gaertner, H. Kessler, H.-J. Wester, M. Schwaiger, A. J. Beer: Radiolabelled RGD peptides for imaging and therapy. *Eur. J. Nucl. Med. Mol. Imaging* **2012**, *39*, Suppl. 1, 126 – 138.
- [688] M. L. Hovlid, N. F. Steinmetz, B. Laufer, J. L. Lau, J. Kuzelka, Q. Wang, T. Hyypiä, G. R. Nemerow, H. Kessler, M. Manchester, M. G. Finn: Guiding Plant Virus Particles to Integrin-Displaying Cells. *RSC Nanoscale*, **2012**, *4*, 3698 – 3705.
- [689] J. Spiegel, C. Mas-Moruno, H. Kessler, W. D. Lubell: Cyclic azapeptide integrin ligand synthesis and biological activity. *J. Org. Chem.* **2012**, *77*, 5271 – 5278.
- [690] O. Demmer, A. O. Frank, F. Hagn, M. Schottelius, L. Marinelli, S. Cosconati, R. Brack-Werner, S. Kremb, H.-J. Wester, H. Kessler: A Conformationally Frozen Peptoid Boosts CXCR4 Affinity and Anti-HIV Activity. *Angew. Chem., Int. Ed.* **2012**, *51*, 8110 – 8113.
- [691] K. Pohle, J. Notni, J. Bussemer, H. Kessler, M. Schwaiger, A. J. Beer: ^{68}Ga -NODAGA-RGD is a suitable substitute for ^{18}F -Galacto-RGD and can be produced with high specific activity in a cGMP compliant automated process. *Nuclear Medicine Biology*, **2012**, *39*, 6, 777 – 784.
- [692] C. Mas-Moruno, P. M. Dorfner, F. Manzenrieder, S. Neubauer, U. Reuning, R. Burgkart, H. Kessler: Behavior of primary human osteoblasts on trimmed and sandblasted Ti6Al4V surfaces functionalized with integrin $\alpha_v\beta_3$ -selective cyclic RGD peptides. *J. Biomet. Mat. Res. Part A* **2013**, *101A*, 1, 87 – 97.
- [693] J. G. Beck, J. Chatterjee, B. Laufer, M. Udaya Kiran, A. O. Frank, S. Neubauer, O. Ovidia, S. Greenberg, C. Gilon, A. Hoffman, H. Kessler: Intestinal Permeability of Cyclic Peptides: Common Key Backbone Motifs Identified. *J. Amer. Chem. Soc.* **2012**, *134*, 12125 – 12133.
- [694] S. Wohlrab, S. Müller, A. Schmidt, S. Neubauer, H. Kessler, A. Leal-Egaña, T. Scheibel: Cell adhesion and proliferation on RGD-modified recombinant spider silk proteins. *Biomaterials* **2012**, *33*, 6650 – 6659.
- [695] J. Chatterjee, F. Rechenmacher, H. Kessler: N-Methylation of Peptides and Proteins: An Important Element for Modulating Biological Functions. *Angew. Chem., Int. Ed.* **2013**, *52*, 1, 254 – 269; *Angew. Chem.* **2013**, *125*, 268 – 283.

- [696] F. Rechenmacher, S. Neubauer, J. Polleux, C. Mas-Moruno, M. De Simone, E. A. Cavalcanti-Adam, J. P. Spatz, R. Fässler, H. Kessler: Functionalizing $\alpha_v\beta_3$ - or $\alpha_5\beta_1$ -Selective Integrin Antagonists for Surface Coating: A Method to Discriminate Integrin Subtypes In Vitro. *Angew. Chem., Int. Ed.* **2013**, *52*, 1572 – 1575; *Angew. Chem.* **2013**, *125*, 1612 – 1616.
- [697] M. Retzlaff, J. Rohrberg, N. J. Küpper, S. Lagleder, A. Bepperling, F. Manzenrieder, J. Peschek, H. Kessler, J. Buchner: The Regulatory Domain Stabilizes the p53 Tetramer by Intersubunit Contacts with the DNA Binding Domain. *J. Mol. Biol.* **2013**, *425*, 144 – 155.
- [698] A. Bochen, U. Kiran Marelli, E. Otto, D. Pallarola, C. Mas-Moruno, F. Saverio Di Leva, H. Boehm, J. P. Spatz, E. Novellino, H. Kessler, L. Marinelli: Biselectivity of isoDGR Peptides for Fibronectin Binding Integrin Subtypes $\alpha_5\beta_1$ and $\alpha_v\beta_3$: Conformational Control through Flanking Amino Acids. *J. Med. Chem.* **2013**, *56*, 1509 – 1519.
- [699] S. Evellin, F. Galvagni, A. Zippo, F. Neri, M. Orlandini, D. Incarnato, D. Dettori, S. Neubauer, H. Kessler, E. Wagner, S. Oliviero: FOSL1 controls the assembly of endothelial cells into capillary tubes by 2 direct repression of α_v and β_3 integrin transcription. *Mol. Cell. Biol.* **2013**, *33*, 6, 1198 – 1209.
- [700] J. Simecek, P. Hermann, J. Havlíčková, E. Herdtweck, T. G. Kapp, N. Engelbogen, H. Kessler, H.-J. Wester, J. Notni: A cyclen-based tetraphosphinate chelator for preparation of radiolabeled tetrameric bioconjugates. *Chemistry Eur. J.* **2013**, *19*, 7748 – 7757.
- [701] I. Laitinen, J. Notni, K. Pohle, M. Rudelius, E. Farrell, S. G. Nekolla, G. Henriksen, S. Neubauer, H. Kessler, H.-J. Wester, M. Schwaiger: Comparison of cyclic RGD peptides for $\alpha_v\beta_3$ integrin detection in a rat model of myocardial infarction. *Eur. J. Nucl. Med. Mol. Imaging Research* **2013**, *3*, 38.
- [702] F. Rechenmacher, S. Neubauer, C. Mas-Moruno, P. M. Dorfner, J. Polleux, J. Guasch, B. Conings, H.-G. Boyen, A. Bochen, T. R. Sobahi, R. Burgkart, J. P. Spatz, R. Fässler, H. Kessler: A Molecular Toolkit for the Functionalization of Ti-Based Biomaterials That Selectively Control Integrin-Mediated Cell Adhesion. *Chemistry – A European J.* **2013**, *19*, 9218 – 9223.
- [703] S. Rahmouni, A. Lindner, F. Rechenmacher, S. Neubauer, T. R. Sobahi, H. Kessler, E. A. Cavalcanti-Adam, J. P. Spatz: Hydrogel Micropillars with Integrin Selective Peptidomimetic Functionalized Nanopatterned Tops for the Separate Measurement of Cell Traction Forces Transmitted through $\alpha_v\beta_3$ - or $\alpha_5\beta_1$ -Integrins. *Adv. Mater.* **2013**, *25*, 5869 – 74.
- [704] M. A. Müller, J. Opfer, L. A. Volkhardt, L. Brunie, E.-K. Sinner, D. Boettiger, A. Bochen, H. Kessler, K.-E. Gottschalk, U. Reuning: The glycophorin A transmembrane sequence within integrin $\alpha_v\beta_3$ creates a non-signalling integrin with low basal affinity that is strongly adhesive under force. *J. Mol. Biol.* **2013**, *425*, 2988 – 3006.
- [705] U. Kiran Marelli, F. Rechenmacher, T. R. Ali Sobahi, C. Mas-Moruno, H. Kessler: Tumor targeting via integrin ligands. *Frontiers in Pharmacology of Anti-Cancer Drugs* **2013**, *3*, 222.
- [706] T. G. Kapp, F. Rechenmacher, T. R. Sobahi, H. Kessler: Integrin modulators: a patent review. *Exp. Opin. Patent Reviews* **2013**, *23*, 1273 – 1295.
- [707] S. Neubauer, F. Rechenmacher, A. J. Beer, F. Curnis, K. Pohle, C. D'Alessandria, H.-J. Wester, U. Reuning, A. Corti, M. Schwaiger, H. Kessler: Selective imaging of the angiogenic relevant integrins $\alpha_5\beta_1$ and $\alpha_v\beta_3$. *Angew. Chem., Int. Ed.* **2013**, *52*, 11656 – 11659; *Angew. Chem.* **2013**, *125*, 11870 – 11873.
- [708] D. Pallarola, A. Bochen, H. Boehm, F. Rechenmacher, T. R. Sobahi, J. P. Spatz, H. Kessler: Interface Immobilization Chemistry of cRGD-based Peptides Regulates Integrin Mediated Cell Adhesion. *Advanced Functional Materials*, **2014**, *24*, 943 – 956.
- [709] J. Beck, A. O. Frank, H. Kessler: NMR of Peptides. In *NMR of Biomolecules: Towards Mechanistic Systems Biology* (Eds.: I. Bertini, K. S. McGreivy, G. Parigi). Wiley-VCH, Weinheim, **2012**, 328 – 344.
- [710] A. C. Conibear, A. Bochen, K. J. Rosengren, P. Stupar, C. Wang, H. Kessler, D. J. Craik: The cyclic cystine ladder of theta-defensins as a stable, bi-functional scaffold: A proof-of-concept study using the integrin-binding RGD motif. *ChemBioChem* **2014**, *15*, 451 – 459.
- [711] R. Medda, A. Helth, P. Herre, D. Pohl, B. Rellinghaus, N. Perschmann, S. Neubauer, H. Kessler, S. Oswald, J. Eckert, J. P. Spatz, A. Gebert, E. A. Cavalcanti-Adam: Investigation of early cell-surface interactions of human mesenchymal stem cells on nanopatterned β -type titanium-niobium alloy surfaces. *Interface Focus* **2014**, *4*, 20130046.
- [712] J. Šimeček, J. Notni, T. G. Kapp, H. Kessler, H.-J. Wester: Benefits of NOPO as chelator in Gallium-68 peptides, Exemplified by Preclinical Characterization of ^{68}Ga -NOPO-c(RGDfK). *Mol. Pharmaceutics*, **2014**, *11*, 1687 – 1695.

- [713] A. J. Beer, J. Pelisek, P. Heider, A. Saraste, C. Reeps, S. Metz, S. Seidl, H. Kessler, H.-J. Wester, H. H. Eckstein, M. Schwaiger: PET/CT Imaging of Integrin $\alpha_v\beta_3$ Expression in Human Carotid Atherosclerosis. *JACC_Cardiovascular Imaging*, **2014**, *7*(2), 178 – 187.
- [714] S. Neubauer, F. Rechenmacher, R. Brimioulle, F. Saverio Di Leva, A. Bochen, T. R. Sobahi, M. Schottelius, E. Novellino, C. Mas-Moruno, L. Marinelli, H. Kessler: Pharmacophoric Modifications Lead to Superpotent $\alpha_v\beta_3$ Integrin Ligands with Suppressed $\alpha_5\beta_1$ Activity. *J. Med. Chem.* **2014**, *57*(8), 3410 – 3417.
- [715] J. Buchner, H. Kessler: Protein Folding by Interaction. *Structure* **2014**, *22*, 936 – 937.
- [716] F. Rechenmacher, K. Steigerwald, B. Lauffer, S. Neubauer, T. G. Kapp, L. Li, C. Mas-Moruno, M. Joner, H. Kessler: The Integrin Ligand c(RGDf(NMe)Na) Reduces Neointimal Hyperplasia in a Polymer-Free Drug-Eluting Stent System. *ChemMedChem* **2014**, *9*(7), 1413 – 1418.
- [717] J. D. Hegemann, M. De Simone, M. Zimmermann, T. A. Knappe, X. Xie, F. S. Di Leva, E. Novellino, L. Marinelli, S. Zahler, H. Kessler, M. A. Marahiel: Rational Improvement of the Affinity and Selectivity of Integrin Binding of Grafted Lasso Peptides. *J. Med. Chem.* **2014**, *57*, 5829 – 5834.
- [718] A.-M. Ray, F. Schaffner, H. Janouškova, F. Noulet, D. Rognan, I. Lelong-Rebel, L. Choulier, A.-F. Blandin, M. Lehmann, S. Martin, T. Kapp, S. Neubauer, F. Rechenmacher, H. Kessler, M. Döntenwill: Single cell tracking assay reveals an opposite effect of selective small non-peptidic $\alpha_5\beta_1$ or $\alpha_v\beta_3/\beta_5$ integrins antagonists in U87MG glioma cells. *Biochem. Biophys. Acta* **2014**, *1840* (9), 2978 – 2987.
- [719] M. A. Müller, L. Brunie, A.-S. Bächer, H. Kessler, K.-E. Gottschalk, U. Reuning: Cytoplasmic salt bridge formation in integrin $\alpha_v\beta_3$ stabilizes its inactive state affecting integrin-mediated cell biological effects. *Cellular Signalling* **2014**, *26*, 2493 – 2503.
- [720] U. Kiran Marelli, A. O. Frank, T. Reiner, B. Wahl, V. La Pietra, E. Novellino, L. Marinelli, M. Groll, H. Kessler: The Solution Conformation of Cilengitide Represents the Receptor Bound Conformation better than the X-Ray Structure of Cilengitide. *Chemistry Eur. J.* **2014**, *20*, 14201 – 14206.
- [721] H. J. Wester, U. Keller, M. Schottelius, A. Beer, K. Philipp-Abbrederis, F. Hoffmann, J. Šimeček, C. Gerngross, M. Lassmann, K. Herrmann, N. Pellegata, M. Rudehus, H. Kessler, M. Schwaiger: Disclosing the CXCR4 Expression in Lymphoproliferative Diseases by Targeted Molecular Imaging. *Teranostics*, **2015**, *5*(6), 618 – 630.
- [722] A. O. Frank, J. C. Freudenberger, A. Shaytan, H. Kessler, B. Luy: Direct prediction of residual dipolar couplings of small molecules in a stretched gel by stochastic molecular dynamics simulations. *Magn. Res. Chem.* **2015**, *53* (3), 213 – 217.
- [723] R. Fraioli, F. Rechenmacher, S. Neubauer, J. M. Manero, J. Gil, H. Kessler, C. Mas-Moruno: Integrin ($\alpha_v\beta_3$ or $\alpha_5\beta_1$)-Selective Peptidomimetics Enhance Osteoblast-like Cells Adhesion, Proliferation, and Differentiation on Titanium. *Colloids Surf., B* **2015**, *128*, 191 – 200.
- [724] A. Röhl, D. Wengler, T. Madl, S. Lagleder, F. Tippel, M. Herrmann, J. Hendrix, K. Richter, G. Hack, A. B. Schmid, H. Kessler, D. C. Lamb, J. Buchner: Hsp90 regulates the dynamics of its cochaperone Sti1 and the transfer of Hsp70 between modules. *Nat. Commun.* **2015**, *6*, 6655.
- [725] U. Kiran Marelli, J. Bezençon, E. Puig, B. Ernst, H. Kessler: Enantiomeric cyclic peptides with different Caco-2 permeability suggest carrier-mediated transport. *Chemistry Eur. J.* **2015**, *21*, 8023 – 8027.
- [726] Y. Shen, M. Schottelius, K. Zelenka, M. De Simone, K. Pohle, H. Kessler, H.-J. Wester, P. Schmutz, R. Alberto: Orthogonally Protected Artificial Amino Acid as Tripod Ligand for Automated Peptide Synthesis and Labeling with $[^{99m}\text{Tc}(\text{OH}_2)_3(\text{CO})_3]^+$. *Bioconj. Chem.* **2013**, *24*, 26 – 35.
- [727] J. Guasch, B. Conings, S. Neubauer, F. Rechenmacher, K. Ende, C. G. Rolli, C. Kappel, V. Schaufler, A. Micoulet, H. Kessler, H.-G. Boyen, E. Ada Cavalcanti-Adam, J. P. Spatz: Segregation Versus Colocalization: Orthogonally Functionalized Binary Micropatterned Substrates Regulate the Molecular Distribution in Focal Adhesions. *Adv. Mater.* **2015**, *27*, 3737 – 3747.
- [728] M. Cai, U. Kiran Marelli, J. Bao, J. G. Beck, F. Oppere, F. Rechenmacher, K. R. McLeod, M. R. Zingsheim, L. Doedens, H. Kessler, V. J. Hruby: Systematic Backbone Conformational Constraints on a Cyclic Melanocortin Ligand Leads to Highly Selective Ligands for Multiple Melanocortin Receptors. *J. Med. Chem.* **2015**, *58*, 6359 – 6367.
- [729] J. P. Frohnmayer, D. Brüggemann, C. Eberhard, S. Neubauer, C. Mollenhauer, H. Boehm, H. Kessler, B. Geiger, J. P. Spatz: Adhesive Minimal Synthetic Cells Composed of Natural Building Blocks. *Angew. Chem., Int. Ed.* **2015**, *54*, 12472 – 12478; *Angew. Chem.* **2015**, *127*, 12649 – 12655.

- [730] U. Kiran Marelli, O. Ovadia, A. O. Frank, J. Chatterjee, C. Gilon, A. Hoffman, H. Kessler: *Cis*-peptide bonds: A key for intestinal permeability of peptides? *Chem. Eur. J.* **2015**, *21*, 15148 – 15152.
- [731] C. Herranz-Diez, Q. Li, C. Lamprecht, C. Mas-Moruno, S. Neubauer, H. Kessler, J. M. Manero, J. Guillem-Marti, C. Selhuber-Unkel: Bioactive compounds immobilized on Ti and TiNbHf: AFM-based investigations of biofunctionalization efficiency and cell adhesion. *Colloids Surf., B* **2015**, *136*, 704 – 711.
- [732] A. C. Jung, A.-M. Ray, L. Ramolu, C. Macabre, F. Simon, F. Noulet, A.-F. Blandin, G. Renner, M. Lehmann, L. Choulier, H. Kessler, J. Abecassis, M. Dontenwill, S. Martin: Caveolin-1-negative head and neck squamous cell carcinoma primary tumors display increased epithelial to mesenchymal transition and prometastatic properties. *Oncotarget* **2015**, *6*, 41884 – 41901.
- [733] G. Renner, H. Janouskova, F. Noulet, E. Guerin, S. Bär, J. Nuesch, F. Rechenmacher, S. Neubauer, H. Kessler, L. Choulier, N. Etienne-Selloum, M. Lehmann, I. Lelong-Rebel, S. Martin, M. Dontenwill: Integrin $\alpha_5\beta_1$ and p53 convergent pathways in the control of anti-apoptotic proteins PEA-15 and survivin in high grade glioma. *Cell Death Differ.*, **2016**, *23*, 640 – 653.
- [734] C. D'Alessandria, K. Pohle, F. Rechenmacher, S. Neubauer, H.-J. Wester, M. Schwaiger, H. Kessler, A. J. Beer: *In vivo* biokinetic and metabolic characterization of the ^{68}Ga -labeled $\alpha_5\beta_1$ -selective antagonist FR366. *Eur. J. Nucl. Med. and Mol. Imaging, EJNM* **2016**, *43*, 953 – 963.
- [735] O. V. Maltsev, U. Kiran Marelli, T. G. Kapp, F. S. Di Leva, S. Di Maro, M. Nieberler, U. Reuning, M. Schwaiger, E. Novellino, L. Marinelli, H. Kessler: Stable Peptides Instead of Stapled Peptides: Highly Potent $\alpha_v\beta_3$ -Selective Integrin Ligands. *Angew. Chem., Int. Ed.* **2016**, *55*, 1535 – 1538; *Angew. Chem.* **2016**, *128*, 1559 – 1563.
- [736] T. G. Kapp, M. Fottner, O. V. Maltsev, H. Kessler: Small cause, great impact – modification of the guanidine group in RGD controls integrin subtype selectivity. *Angew. Chem., Int. Ed.* **2016**, *55*, 1540 – 1543; *Angew. Chem.* **2016**, *128*, 1564 – 1568.
- [737] J. Notni, K. Steiger, F. Hoffmann, D. Reich, T. Kapp, F. Rechenmacher, S. Neubauer, H. Kessler, H.-J. Wester: A Match Made in Heaven: Complementary, Selective PET-Imaging of Integrin Subtypes $\alpha_5\beta_1$ and $\alpha_v\beta_3$ Using Ga-68-Aquibepirin and Ga-68-Avebetrin. *J. Nuclear Medicine* **2016**, *57*, 460 – 466.
- [738] C. Herranz-Diez, C. Mas-Moruno, S. Neubauer, H. Kessler, F. Gil Javier, M. Peguerolles, J. Manero, J. Guillem-Marti: Tuning Mesenchymal Stem Cell Response onto Titanium-Niobium-Hafnium Alloy by Recombinant Fibronectin Fragments. *ACS Appl. Mater. Interfaces* **2016**, *8*, 2517 – 2525.
- [739] D. Missirlis, T. Haraszti, C.v.C. Scheele, T. Wiegand, C. Diaz, S. Neubauer, F. Rechenmacher, H. Kessler, J. P. Spatz: Substrate engagement of integrins $\alpha_5\beta_1$ and $\alpha_v\beta_3$ is necessary, but not sufficient, for high directional persistence in migration on fibronectin. *Sci. Rep.* **2016**, *6*, 23258 – 23258.
- [740] J. Guasch, J. Diemer, H. Riahihezhad, S. Neubauer, H. Kessler, J. P. Spatz: Synthesis of Binary Nanopatterns on Hydrogels for Initiating Cellular Responses. *Chem. Mater.* **2016**, *28*, 1806 – 1815.
- [741] A. J. Beer, S. M. Schwarzenböck, N. Zantl, M. Souvatzoglou, T. Maurer, P. Watzlowik, H. Kessler, H.-J. Wester, M. Schwaiger, B. J. Krause: Non-invasive assessment of inter- and intrapatient variability of integrin expression in metastasized prostate cancer by PET. *Oncotarget J.* **2016**, *7*, 28151 – 28159.
- [742] V. Schaufler, H. Czichos-Medda, V. Hirschfeld-Warnecken, S. Neubauer, F. Rechenmacher, R. Medda, H. Kessler, B. Geiger, J. P. Spatz, E. A. Cavalcanti-Adam: Selective binding and lateral clustering of $\alpha_5\beta_1$ and $\alpha_v\beta_3$ integrins: Unraveling the spatial requirements for cell spreading and focal adhesion assembly. *Cell Adhes. Migr.* **2016**, *10*, 505 – 515.
- [743] J. Notni, K. Steiger, F. Hoffmann, D. Reich, M. Schwaiger, H. Kessler, H.-J. Wester: Variation of Specific Activities of Ga-68-Aquibepirin and Ga-68-Avebetrin Enables Selective PET-Imaging of Different Expression Levels of Integrins $\alpha_5\beta_1$ and $\alpha_v\beta_3$. *J. Nucl. Med.* **2016**, *57*, 1618 – 1625.
- [744] A. Poschenrieder, M. Schottelius, M. Schwaiger, H. Kessler, H.-J. Wester: The Influence of Different Metal-Chelate-Conjugates of Pentixafor on the CXCR4 Affinity. *Eur. J. Nucl. Med. Mol. Imaging* **2016**, *6*, 36.
- [745] A. Enthart, C. Klein, A. Dehner, M. Coles, G. Gemmecker, H. Kessler, F. Hagn: Solution structure and binding specificity of the p63 DNA binding domain. *Sci. Rep.* **2016**, *6*, 26707.
- [746] C. Mas-Moruno, R. Fraioli, F. Rechenmacher, S. Neubauer, T. G. Kapp, H. Kessler: $\alpha_v\beta_3$ - or $\alpha_5\beta_1$ -Integrin-Selective Peptidomimetics for Surface Coating. *Angew. Chem., Int. Ed.* **2016**, *55*, 7048 – 7068; *Angew. Chem.* **2016**, *128*, 7162 – 7184.

- [747] J. Notni, D. Reich, O. V. Maltsev, T. G. Kapp, K. Steiger, F. Hoffmann, I. Esposito, W. Weichert, H. Kessler, H.-J. Wester: In-vivo PET imaging of the cancer integrin $\alpha_v\beta_6$ using gallium-68 labelled cyclic RGD nonapeptides. *J. Nucl. Med.* **2017**, *58*, 671 – 677.
- [748] P. K. A. Jagtap, D. Garg, T. G. Kapp, C. L. Will, O. Demmer, R. Lührmann, H. Kessler, M. Sattler: Rational design of cyclic peptide inhibitors of U2AF homology motif (UHM) domains to modulate pre-mRNA splicing. *J. Med. Chem.* **2016**, *59*, 10190 – 10197.
- [749] X. Ma, V. Phi Van, M. A. Kimm, J. Prakash, H. Kessler, K. Kosanke, A. Feuchtinger, M. Aichler, A. Gupta, E. J. Rummeny, M. Eisenblätter, J. Siveke, A. K. Walch, R. Braren, V. Ntziachristos, M. Wildgruber: Integrin-Targeted hybrid Fluorescence/X-ray Computed Tomography for Imaging Tumor Progression and Early Response in Non-Small Cell Lung Cancer. *Neoplasia* **2017**, *19*, 8 – 16.
- [750] T. G. Kapp, F. Rechenmacher, S. Neubauer, O. V. Maltsev, A. E. Cavalcanti-Adam, R. Zarka, U. Reuning, J. Notni, H.-J. Wester, C. Mas-Moruno, J. P. Spatz, B. Geiger, H. Kessler: A Comprehensive Evaluation of the Activity and Selectivity Profile of Ligands for RGD-binding Integrins. *Sci. Rep.* **2017**, *7*, 39805.
- [751] R. Fraioli, P. M. Tsimbouri, L. Fisher, A. H. Nobbs, B. Su, S. Neubauer, F. Rechenmacher, H. Kessler, M. Ginebra, M. Dalby, J. M. Manero, C. Mas-Moruno: Towards the cell-Instructive bactericidal substrate: exploring the combination of nanotopographical features and integrin selective synthetic ligands. *Sci. Rep.* **2017**, *7*, 16363.
- [752] D. Missirlis, T. Haraszti, H. Kessler, J. P. Spatz: Fibronectin promotes directional persistence in fibroblast migration through interactions with both its cell-binding and heparin-binding domains. *Sci. Rep.* **2017**, *7*, 3711.
- [753] M. Cai, U. Kiran Marelli, B. Mertz, J. Beck, F. Opperer, F. Rechenmacher, H. Kessler, V. Hruby: Structural Insights into Selective Ligand-Receptor Interactions Leading to Receptor Inactivation Utilizing Selective Melanocortin 3 Receptor Antagonists. *Biochemistry* **2017**, *56*, 4201 – 4209.
- [754] M. Nieberler, U. Reuning, F. Reichart, J. Notni, H.-J. Wester, M. Schwaiger, M. Weinmüller, A. Räder, K. Steiger, H. Kessler: Exploring the role of RGD-recognizing integrins in cancer. *Cancers* **2017**, *9*, 9, 116.
- [755] A. F. B. Räder, F. Reichart, M. Weinmüller, H. Kessler: Improving Oral Bioavailability of Cyclic Peptides by *N*-Methylation. *Bioorg. Med. Chem.* **2017**, *26*, 2766 – 2773.
- [756] M. Weinmüller, F. Rechenmacher, U. Kiran Marelli, F. Reichart, T. G. Kapp, A. F. B. Räder, F. S. Di Leva, L. Marinelli, E. Novellino, J. M. Muñoz-Félix, K. Hodivala-Dilke, A. Schumacher, J. Fanous, C. Gilon, A. Hoffman, H. Kessler: Overcoming the lack of oral availability of cyclic hexapeptides: Design of a new selective and orally available ligand for the integrin $\alpha_v\beta_3$. *Angew. Chem.* **2017**, *129*, 16624 – 16629; *Angew. Chem., Int. Ed.* **2017**, *56*, 16405 – 16409.
- [757] D. Pallarola, A. Bochen, V. Guglielmotti, T. A. Oswald, H. Kessler, J. P. Spatz: Highly Ordered Gold Nanopatterned Indium Tin Oxide Electrodes for Simultaneous Optical and Electrochemical Probing Cell Interactions. *Anal. Chem.* **2017**, *89*, 10054 – 10062.
- [758] D. Pallarola, I. Platzman, A. Bochen, E. A. Cavalcanti-Adam, M. Axmann, H. Kessler, B. Geiger, J. P. Spatz: Focal adhesion stabilization by enhanced integrin-cRGD binding affinity. *BioNanoMat* **2017**, *18*, 1 – 2, 20160014.
- [759] T. G. Kapp, F. S. Di Leva, J. Notni, A. F. B. Räder, M. Fottner, F. Reichart, D. Reich, A. Wurzer, K. Steiger, E. Novellino, U. Kiran Marelli, H.-J. Wester, L. Marinelli, H. Kessler: *N*-methylation of isoDGR Peptides: Discovery of a Selective $\alpha 5\beta 1$ -Integrin Ligand as a Potent Tumor Imaging Agent. *J. Med. Chem.* **2018**, *61*, 2490 – 2499.
- [760] S. F. Färber, A. Wurzer, F. Reichart, R. Beck, H. Kessler, H.-J. Wester, J. Notni: Therapeutic Radiopharmaceuticals Targeting Integrin $\alpha_v\beta_6$. *ACS Omega* **2018**, *3*, 2428 – 2436.
- [761] T. Durek, P. M. Cromm, A. M. White, C. I. Schroeder, J. Weidmann, A. A. Fuaad, O. Cheneval, P. J. Harvey, N. L. Daly, A. Dellsén, T. Österlund, N. Larsson, L. Knerr, U. Bauer, H. Kessler, M. Cai, V. J. Hruby, A. T. Plowright, D. J. Craik: Development of novel melanocortin receptor agonists based on the cyclic peptide framework of sunflower trypsin inhibitor-1. *J. Med. Chem.* **2018**, *61*, 3674 – 3684.
- [762] F. Merlino, S. Daniele, V. La Pietra, S. Di Maro, F. Saverio Di Leva, D. Brancaccio, S. Tomassi, S. Giuntini, L. Cerofolini, M. Fragai, C. Luchinat, F. Reichart, C. Cavallini, B. Costa, S. Taliani, F. Da Settimo, C. Martini, H. Kessler, E. Novellino, L. Marinelli: Simultaneous Targeting of RGD-Integrins and Dual Murine Double Minute Proteins in Glioblastoma Multiforme. *J. Med. Chem.* **2018**, *61*, 4791 – 4809.

- [763] A. Schumacher-Klinger, J. Fanous, S. Merzbach, M. Weinmueller, F. Reichart, A. Räder, A. Domaglaska, C. Gilon, H. Kessler, A. Hoffman: Enhancing oral bioavailability of cyclic RGD hexa-peptides by the Lipophilic Prodrug Charge Masking approach: Redirection of peptide intestinal permeability from paracellular to transcellular pathway. *Mol. Pharmaceutics* **2018**, *15*, 3468 – 3477.
- [764] F. S. Di Leva, S. Tomassi, S. Di Maro, F. Reichart, J. Notni, A. Dangi, U. Kiran Marelli, D. Brancaccio, F. Merlino, H.-J. Wester, E. Novellino, H. Kessler, L. Marinelli: From a helix to a small cycle: Metadynamics-inspired $\alpha_v\beta_6$ integrin selective ligands. *Angew. Chem., Int. Ed.* **2018**, *57*, 14645 – 14649; *Angew. Chem.* **2018**, *130*, 14856 – 14860.
- [765] A. F. B. Räder, M. Weinmüller, F. Reichart, A. Schumacher-Klinger, S. Merzbach, C. Gilon, A. Hoffman, H. Kessler: Orally active peptides – is there a magic bullet? *Angew. Chem., Int. Ed.* **2018**, *57*, 14414 – 14438; *Angew. Chem.* **2018**, *130*, 14614 – 14640.
- [766] J. Guasch, M. Hoffmann, J. Diemer, H. Riahinezhad, S. Neubauer, H. Kessler, J. P. Spatz: Combining adhesive nanostructured surfaces and costimulatory signals to increase T cell activation. *Nano Lett.* **2018**, *18*, 5899 – 5904.
- [767] J. Han, A. F. B. Räder, F. Reichart, B. Aikman, M. N. Wenzel, B. Woods, M. Weinmüller, B. S. Ludwig, S. Stürup, G. M. M. Groothuis, H. P. Permentier, R. Bischoff, H. Kessler, P. Horvatovich, A. Casini: Bioconjugation of Supramolecular Metallacages to Integrin Ligands for Targeted Delivery of Cisplatin. *Bioconjugate Chem.* **2018**, *29*, 3856 – 3865.
- [768] M. Nieberler, U. Reuning, H. Kessler, F. Reichart, G. Weirich, K.-D. Wolff: Fluorescence imaging of bone-infiltrating head and neck squamous cell carcinoma cells with integrin $\alpha_v\beta_6$ -targeting. *Br. J. Oral Maxillofac Surg.* **2018**, *56*, 972 – 978.
- [769] F. Reichart, O. V. Maltsev, T. G. Kapp, A. F. B. Räder, M. Weinmüller, U. Kiran Marelli, J. Notni, A. Wurzer, R. Beck, H.-J. Wester, K. Steiger, S. Di Maro, F. S. Di Leva, L. Marinelli, M. Nieberler, U. Reuning, M. Schwaiger, H. Kessler: Selective Targeting of Integrin $\alpha_v\beta_3$ by a Highly Active Cyclic Peptide. *J. Med. Chem.* **2019**, *62*, 2024 – 2037.
- [770] R. Zarka, M. B. Horev, T. Volberg, S. Neubauer, H. Kessler, J. P. Spatz, B. Geiger: Differential modulation of platelet adhesion and spreading, by adhesive ligand density. *Nanoletters* **2019**, *19*, 1418 – 1427.
- [771] R. Fraioli, S. Neubauer, F. Rechenmacher, B. M. Bosch, K. Dashnyam, J.-H. Kim, R. A. Perez, H.-W. Kim, F. J. Gil, M.-P. Ginebra, J. M. Manero, H. Kessler, C. Mas-Moruno: Control of Stem Cell Response and Bone Growth on Biomaterials by Fully Non-Peptidic Integrin Selective Ligands. *Biomater. Sci.* **2019**, *7*, 1281 – 1285.
- [772] J. Notni, F. T. Gassert, K. Steiger, P. Sommer, W. Weichert, E. J. Rummeny, M. Schwaiger, H. Kessler, M. A. Kimm, R. Meier: In-Vivo Imaging of Early Stages of Rheumatoid Arthritis by $\alpha_5\beta_1$ -Integrin Targeted Positron Emission Tomography. *Eur. J. Nucl. Med. Mol. Imaging* **2019**, *9*, 87.
- [773] M. Schottelius, M. Ludescher, T. Kapp, H. Kessler, H.-J. Wester: Validation of [125I]CPCR4.3 as an investigative tool for the sensitive and specific detection of hCXCR4 and mCXCR4 expression in vitro and in vivo. *Eur. J. Nucl. Med. Mol. Imaging* **2019**, *9*, 75.
- [774] M. Bonus, A. Sommerfeld, N. Qvartskhava, B. Görg, B. S. Ludwig, H. Kessler, H. Gohlke, D. Häussinger: Evidence for functional selectivity in TUDC- and norUDCA-induced signal transduction via $\alpha_5\beta_1$ integrin towards cholelithiasis. *Sci. Rep.* **2020**, *10*, 5795.
- [775] C. Diaz, S. Neubauer, F. Rechenmacher, H. Kessler, D. Missirli: Recruitment of $\alpha_v\beta_3$ integrin to $\alpha_5\beta_1$ integrin-induced clusters enables focal adhesion maturation and cell spreading. *J. Cell Sci.* **2020**, *133*, 1, jcs232702.
- [776] J. L. Young, X. Hua, H. Somsel, F. Reichart, H. Kessler, J. P. Spatz: Integrin subtypes and nanoscale ligand presentation influence drug sensitivity in cancer cells. *Nano Lett.* **2020**, *20*, 1183 – 1191.
- [777] P. Nicol, C. Lutter, A. Bulin, M. I. Castellanos, T. Lenz, P. Hoppmann, A. L. Lahmann, R. Colleran, K. Euler, K. Steigerwald, S. Neubauer, F. Rechenmacher, B. S. Ludwig, M. Weinmüller, G. Kerch, L. Gou, Q. Cheng, E. Acampado, T. Koppa, H. Kessler, M. Joner: Assessment of a pro-healing stent in an animal model of early neoatherosclerosis. *Sci. Rep.* **2020**, *10*, 8227.
- [778] T. Zietek, P. Giesbertz, M. Ewers, F. Reichart, M. Weinmüller, E. Urbauer, D. Hasler, I. E. Demir, G. O. Ceyhan, H. Kessler, E. Rath: Organoids to Study Intestinal Nutrient Transport, Drug Uptake and Metabolism – Update to the Human Model and Expansion of Applications. *Frontiers in Bioeng. and Biotechn.* **2020**, *8*, 577658.

- [779] M. R. Makowski, C. Rischpler, U. Ebersberger, A. Keithahn, M. Kasel, E. Hoffmann, T. Rassaf, P. Watzlowik, H. Kessler, H.-J. Wester, S. G. Nekolla, M. Schwaiger, A. J. Beer: Multiparametric PET and MRI of myocardial damage after myocardial infarction: correlation of integrin $\alpha_v\beta_3$ -expression and myocardial blood flow. *Eur. J. Nuclear Med. and Mol. Imaging*, **2021**, *48*, 1070–1080.
- [780] P. K. A. Jagtap, T. Kubelka, K. Soni, C. L. Will, D. Garg, C. Sippel, T. G. Kapp, H. K. Potukuchi, K. Schorpp, K. Hadian, H. Kessler, R. Lührmann, F. Hausch, T. Bach, M. Sattler: Identification of Phenothiazine Derivatives as UHM-Binding/Inhibitors of Early Spliceosome Assembly. *Nature Comm.* **2020**, *11*, 5621.
- [781] F. Posa, E. Baha-Schwab, Q. Wei, A. Di Benedetto, S. Neubauer, H. Kessler, J. Spatz, C. Albigez-Rizo, G. Mori, E. Ada Cavalcanti-Adam: Surface Co-presentation of BMP-2 and Integrin Selective Ligands at the Nanoscale favors β_1 integrin adhesion. *Biomaterials* **2021**, *267*, 120484.
- [782] B. S. Ludwig, S. Tomassi, S. Di Maro, F. S. Di Leva, A. Benge, F. Reichart, M. Nieberler, F. E. Kühn, H. Kessler, L. Marinelli, U. Reuning, S. Kossatz: The organometallic ferrocene exhibits amplified anti-tumor activity by targeted delivery via highly selective ligands to $\alpha_v\beta_3$, $\alpha_5\beta_6$, or $\alpha_5\beta_1$ integrins. *Biomaterials* **2021**, *271*, 120754.
- [783] B. S. Ludwig, H. Kessler, S. Kossatz, U. Reuning: RGD-binding Integrins Revisited: How Recently Discovered Functions and Novel Synthetic Ligands (Re-)Shape an Ever-Evolving Field. *Cancers* **2021**, *13*, 1711.
- [784] S. Tomassi, V. M. D'Amore, F. Di Leva, A. Vannini, G. Quilici, Giacomo, M. Weinmüller, F. Reichart, J. Amato, B. Romano, A. Izzo, A. Antonio, S. Di Maro, E. Novellino, G. Musco, T. Gianni, H. Kessler, L. Marinelli: Shutting Down the Spread of Herpes Simplex Virus-1: Discovery of an Effective Dual $\alpha_v\beta_6/\alpha_v\beta_8$ Integrin Ligand. *J. Med. Chem.* **2021**, *64*, 10, 6972–6984.
- [785] J. Liu, H. Long, D. Zeuschner, A. F. B. Räder, H. Kessler, L. Sorokin, B. Trappman: Synthetic extracellular matrices with tailored adhesiveness and degradability support lumen formation during angiogenic sprouting. *Nat. Commun.*, **2021**, *12*, 3402.
- [786] J. Di Russo, J. L. Young, J. W. R. Wegner, T. Steins, H. Kessler, J. P. Spatz: Integrin $\alpha_5\beta_6$ nano-presentation regulates keratinocytes collective migration independent of substrate rigidity. *eLife* **2021**, *10*, e69861.
- [787] S. Sani, N. Pallaoro, M. Messe, C. Bernhard, N. Etienne-Selloum, H. Kessler, L. Marinelli, N. Entz-Werlé, S. Foppolo, S. Martin, D. Reita, M. Dontenwill: Temozolomide-Acquired Resistance is Associated with Modulation of the Integrin Repertoire in Glioblastoma. Impact of $\alpha_5\beta_1$ Integrin. *Cancers* **2022**, *14*, 369.
- [788] A. Bauer, M. Puglisi, D. Nagl, J. A. Schick, T. Werner, A. Klingl, J. El Andari, V. Horning, H. Kessler, M. Götz, D. Grimm, R. Brack-Werner: Molecular Signature of Astrocytes for Gene Delivery by the Synthetic Adeno-Associated Viral Vector rAAV9P1. *Adv. Sci.* **2022**, *9*, 2104979.
- [789] C. Griesinger, G. Bodenhausen, M. Ernst, B. Mayer, A. Wokaun, T. Keller, H. Kessler: Richard Ernst (1933–2021), Nachruf. *Angew. Chem.* **2021**, *133*, 24140–24141.
- [790] D. El Arawi, C. Vézy, R. Déturche, M. Lehmann, H. Kessler, M. Dontenwill, R. Jaffiol: Advanced quantification for single cell adhesion by variable-angle TIRF nanoscopy. *Biophys. Rep.* **2021**, *1*, 100021.
- [791] L. J. Flitsch, K. Börner, C. Stüllein, S. Ziegler, V. Sonntag-Buck, E. Wiedtke, V. Semkova, S. W. C. A. Yeung, J. Schlee, M. Hajo, M. Methews, B. S. Ludwig, S. Kossatz, H. Kessler, D. Grimm, O. Brüstle: Identification of Adeno-associated virus variants for gene transfer into human neural cell types by parallel capsid screening. *Sci. Rep.* **2022**, *12*, 8356.
- [792] H. Kessler: *NMR – Mein Kompass in der Organischen und Medizinischen Chemie*. (Lebenswerke in der Chemie). GNT-Verlag, Berlin, **2023**.

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