

PUBLIKATIONSLISTE | PUBLICATION LIST

Originalartikel | Original articles (Corresponding Author)

1. Jakob, U., **Scheibel, T.**, Bose, S., Reinstein, J. & Buchner, J. (1996). Assessment of the ATP-binding properties of Hsp90. *J. Biol. Chem.* **271**, 10035-10041.
2. **Scheibel, T.**, Neuhofen, S., Weikl, T., Mayr, C., Reinstein, J., Vogel, P.D. & Buchner, J. (1997). ATP-binding properties of human Hsp90. *J. Biol. Chem.* **272**, 18608-18613.
3. **Scheibel, T.**, Bell, S. & Walke, S. (1997). *S. cerevisiae* and sulfur: a unique way to deal with the environment. *FASEB J.* **11**, 917-921.
4. **Scheibel, T.**, Weikl, T. & Buchner, J. (1998). Two chaperone sites in Hsp90 differing in substrate specificity and ATP dependence. *Proc. Natl. Acad. Sci. USA* **95**, 1495-1499.
5. Nichtl, A., Buchner, J., Jaenicke, R., Rudolph, R. & **Scheibel, T.** (1998). Folding and association of b-galactosidase. *J. Mol. Biol.* **282**, 1083-1091.
6. **Scheibel, T.**, Siegmund, H.I., Jaenicke, R., Ganz, P., Lilie, H. & Buchner, J. (1999). The charged region of Hsp90 modulates the function of the N-terminal domain. *Proc. Natl. Acad. Sci. USA* **96**, 1297-1302.
7. **Scheibel, T.**, Weikl, T., Rimerman, R., Smith, D., Lindquist, S. & Buchner, J. (1999). Contribution of N- and C-terminal domains to the function of Hsp90 in *S. cerevisiae*. *Mol. Microbiol.* **34**, 701-713.
8. **Scheibel, T.**, Kowal, A., Bloom, J. & Lindquist, S. (2001). Bi-directional amyloid fiber growth for a yeast prion determinant. *Cur. Biol.* **11**, 366-369.
9. **Scheibel, T.**, Kowal, A. & Lindquist, S. (2001). Factors, which stabilize the structure of the prion-determining region (NM) of yeast Sup35p inhibit fiber formation. *Nova Acta Leopoldina Supplementum* **16**, 121-122.
10. **Scheibel, T.** & Lindquist, S. (2001). The role of conformational flexibility in amyloid propagation by the yeast prion-protein Sup35. *Nat. Struct. Biol.* **8**, 958-963.
11. **Scheibel, T.**, Parthasarathy, R., Sawicki, G., Lin, X.-M., Jaeger, H. & Lindquist, S. (2003). Conducting nanowires built by controlled self assembly of amyloid fibers and selective metal deposition. *Proc. Natl. Acad. Sci. USA* **100**, 4527-4532.
12. **Scheibel, T.**, Bloom, J. & Lindquist, S. (2004). The elongation of yeast prion fibers involves separable steps of association and conversion. *Proc. Natl. Acad. Sci. USA* **101**, 2287-2292.
13. Huemmerich, D., Helsen, C.W., Oschmann, J., Rudolph, R. & **Scheibel, T.** (2004). Primary structure elements of dragline silks and their contribution to protein solubility and assembly. *Biochemistry* **43**, 13604-13612.
14. Huemmerich, D., **Scheibel, T.**, Vollrath, F., Cohen, S., Gat, U. & Ittah, S. (2004) Novel assembly properties of recombinant spider dragline silk proteins. *Curr. Biol.* **14**, 2070-2074

15. Junger, A., Kaufmann, D., **Scheibel, T.** & Weberskirch, R. (2005). Biosynthesis of an elastin-mimetic polypeptide with two different chemical functional groups within the repetitive elastin fragment. *Macromol Biosci.* **5**, 494-501.
16. Zbilut, J.P., **Scheibel, T.**, Huemmerich, D., Webber, C.L., Colafranceschi, M. & Giuliani, A. (2005). Spatial stochastic resonance in protein hydrophobicity. *Phys. Lett. A* **346**, 33-41.
17. **Scheibel, T.** (2006). Editorial: Silk – A biomaterial with several facets. *Appl. Phys. A* **82**, 191-192.
18. Huemmerich, D., Slotta, U. & **Scheibel, T.** (2006). Processing and modification of films from recombinant spider silk proteins. *Appl. Phys. A* **82**, 219-222.
19. Zbilut, J., **Scheibel, T.**, Huemmerich, D., Webber, C.L., Colafranceschi, M. & Giuliani, A. (2006). Statistical approaches for investigating silk properties. *Appl. Phys. A* **82**, 243-251.
20. Junghans, F., Conrad, U., **Scheibel, T.**, Heilmann, A. & Spohn, U. (2006). Preparation and mechanical properties of layers made of recombinant spider silk proteins and silk from silk worm. *Appl. Phys. A* **82**, 253-260.
21. Rammensee, S., Huemmerich, D., Hermanson, K., **Scheibel, T.** & Bausch, A. (2006). Rheological characterisation of recombinant spider silk nanofiber networks. *Appl. Phys. A* **82**, 261-264.
22. Slotta, U., Tammer, M., Kremer, F., Koelsch, P. & **Scheibel, T.** (2006). Structural analysis of films cast from recombinant spider silk proteins. *Supramol. Chem.* **18**, 465-471.
23. Lodderstedt, G., Hess, S., Hause, G., Scheuermann, T., **Scheibel, T.** & Schwarz, E. (2007). Effect of OPMD-associated extension of seven alanines on the fibrillation properties of the N-terminal domain of PABPN1. *FEBS Lett.* **274**, 346-355
24. Slotta, U., Hess, S., Spieß, K., Stromer, T., Serpell, L. & **Scheibel, T.** (2007). Spider silk and amyloid fibrils – a structural comparison. *Macromol. Biosciences.* **7**, 183-188
25. Exler, J., Huemmerich, D. & **Scheibel, T.** (2007). The amphiphilic properties of spider silks are important for spinning. *Angew. Chem. Int. Ed.*, **46**, 3559-3562
26. Hermanson, K., Huemmerich, D., **Scheibel, T.** & Bausch, A. (2007). Engineered microcapsules made of reconstituted spider silk. *Adv. Mater.* **19**, 1810-1815
27. Schmidt, M., Römer, L., Strehle, M. & **Scheibel, T.** (2007). Conquering isoleucine auxotrophy of Escherichia coli BLR(DE3) to recombinantly produce spider silk proteins in minimal media. *Biotechnol. Lett.* **29**, 1741-1744
28. Hess, S., Lindquist, S. & **Scheibel, T.** (2007). Alternate assembly pathways of the amyloidogenic yeast prion determinant Sup35p-NM. *EMBO Rep.* **8**, 1196-1201
29. Hermanson, K., Harasim, M., **Scheibel, T.** & Bausch, A. (2007). Permeability of silk microcapsules. *Phys. Chem. Chem. Phys.* **9**, 6442-6446
30. Metwalli, E., Slotta, U., Darko, C., Roth, S., **Scheibel, T.** & Papadakis, C. (2007). Structural changes of thin films from recombinant spider silk proteins upon post treatment. *Appl. Phys. A* **89**, 655-661

31. Dong, J., Bloom, J., Goncharov, V., Chattopadhyay, M., Millhauser, G., Lynn, D., **Scheibel, T.** & Lindquist, S. (2007). Probing the role of PrP repeats in conformational conversion and amyloid assembly of chimeric yeast prions. *J. Biol. Chem.*, **282**, 34204-34212
32. Krammer, C., Suhre, M., Diemer, C., Hess, S., Schätzl, H., Scheibel, T. & Vorberg, I. (2008). Prion protein/protein interactions: Fusion with yeast Sup35p-NM modulates cytosolic PrP aggregation in mammalian cells. *FASEBJ.* **22**, 762-773
33. Geisler, M., Pirzer, T., Ackerschott, C., Lud, S., Garrido, J., **Scheibel, T.** & Hugel, T. (2008). Hydrophobic and Hofmeister effects on the adhesion of spider silk proteins onto solid substrates: An AFM-based single-molecule study. *Langmuir* **24**, 1350-1355
34. Horinek, D., Serr, A., Geisler, M., Pirzer, T., Slotta, U., Lud, S.Q., Garrido, J.A., **Scheibel, T.**, Hugel, T. & Netz, R.R. (2008). Peptide adsorption on a hydrophobic surface results from an interplay of solvation, surface, and intrapeptide forces. *Proc. Natl. Acad. Sci. USA* **105**, 2842-2847
35. Lammel, A., Schwab, M., Slotta, U., Winter, G. & **Scheibel, T.** (2008) Processing conditions for spider silk microsphere formation. *ChemSusChem* **5**, 413-416
36. Slotta, U., Rammensee, S., Gorb, S. & **Scheibel, T.** (2008). An engineered spider silk protein forms microspheres. *Angew. Chem. Int. Ed.*, **47**, 4592-4594
37. Rammensee, S., Slotta, U., **Scheibel, T.**, & Bausch, A. (2008). Assembly mechanism of recombinant spider silk proteins. *Proc. Natl. Acad. Sci. USA* **105**, 6590-6595
38. Liebmann, B., Hummerich, D., **Scheibel, T.** & Fehr, M. (2008). Formulation of poorly water-soluble substances using self-assembling spider silk protein. *Colloids and Surfaces A: Physicochem. Eng. Aspects* **331**, 126-132
39. Hagenau, A., Scheidt, H.A., Serpell, L., Huster, D. & **Scheibel, T.** (2009) Structural Analysis of Proteinaceous Components in Byssal Threads of the Mussel *Mytilus galloprovincialis*. *Macromol. Biosciences* **9**, 162-168. doi: 10.1002/mabi.200800271
40. Krammer, C., Kryndushkin, D., Suhre, M., Kremmer, E., Hofmann, A., Pfeifer, A., **Scheibel, T.**, Wickner, R., Schätzl, H. & Vorberg, I. (2009). The yeast Sup35NM domain propagates as a prion in mammalian cells. *Proc. Natl. Acad. Sci. USA* **106**, 462-467. doi: 10.1073/pnas.0811571106
41. Pirzer, T., Geisler, M., **Scheibel, T.** & Hugel, T. (2009). Single molecule force measurements delineate salt, pH and surface effects on biopolymer adhesion. *Physical Biol. J.* **6**, 025004 doi:10.1088/1478-3975/6/2/025004
42. Vézy, C., Hermanson, K.D., **Scheibel, T.** & Bausch, A.R. (2009). Interfacial rheological properties of recombinant spider-silk proteins. *Biointerphases* **4**, 43-46. doi: 10.1116/1.3174930
43. Suhre, M.H., Hess, S., Golser, A.V., & **Scheibel, T.** (2009). Influence of divalent copper, manganese and zinc ions on fibril nucleation and elongation of the amyloid-like yeast prion

- determinant Sup35p-NM . *J. Inorg. Biochem.* **120** (12), 1711-1720. doi:10.1016/j.jinorgbio.2009.09.021
44. Hagn, F., Eisoldt, L., Hardy, J.G., Vendrely, C., Coles, M., **Scheibel, T.** & Kessler, H. (2010). A conserved spider silk domain acts as a molecular switch that controls fibre assembly. *Nature*, **365**, 239-242. doi: 10.1038/nature08936
 45. Heim, M., Ackerschott, C. B. & Scheibel, T. (2010). Characterization of recombinantly produced spider flagelliform silk domains. *J. Struct. Biol.* **170**, 420–425. doi: 10.1016/j.jsb.2009.12.025
 46. Spiess, K., Wohlrab, S. & **Scheibel, T.** (2010). Structural characterization and functionalization of engineered spider silk films. *Soft Matter* **6**, 4168–4174. doi: 10.1039/b927267d
 47. Lammel A., Schwab, M., Hofer, M., Winter, G. & **Scheibel, T.** (2011). Recombinant spider silk particles as drug delivery vehicles. *Biomaterials* **32**, 2233–2240. doi: 10.1016/j.biomaterials.2010.11.060
 48. Eisoldt, L., Hardy, J. G., Heim, M. & **Scheibel, T.** (2010). The role of salt and shear on the storage and assembly of spider silk proteins. *J. Struct. Biol.* **170**, 413–419. doi: 10.1016/j.jsb.2009.12.027
 49. Lammel, A. S., Hu, X., Park, H.-S., Kaplan, D. L. & **Scheibel, T.** (2010). Controlling silk fibroin particle features for drug delivery. *Biomaterials* **31**, 4583-4591. doi: 10.1016/j.biomaterials.2010.02.024
 50. Keerl, D., Hardy, J.G. & **Scheibel, T.** (2010). Biomimetic spinning of recombinant silk proteins. *Mater. Res. Soc. Symp. Proc.* **1239**, VV07-20.
 51. Hagn, F., Thamm, C., **Scheibel, T.** & Kessler, H. (2011). pH-dependent dimerization and salt-dependent stabilization of the N-terminal domain of spider dragline silk – Implications for fiber formation. *Angew. Chem. Int. Ed.* **50**, 310-313. doi: 10.1002/anie.201003795
 52. Hagenau, A. & Papadopoulos, P., Kremer, F. & **Scheibel, T.** (2011). Mussel collagen molecules with silk-like domains as load-bearing elements in distal byssal threads. *J. Structural Biol.* **175** (3), 339-347. doi.org/10.1016/j.jsb.2011.05.016. 56.
 53. Schacht, K. & **Scheibel, T.** (2011). Controlled hydrogel formation of a recombinant spider silk protein. *Biomacromolecules* **12**, 2488–2495. doi:10.1021/bm200154k
 54. Spiess, K., Ene, R., Keenan, C.D., Senker, J., Kremer, F. & **Scheibel, T.** (2011). Impact of initial solvent on thermal stability and mechanical properties of recombinant spider silk films. *J. Mater. Chem* **21**, 13594-13604. doi: 10.1039/C1JM11700A
 55. Leal-Egaña, A., Lang, G., Mauerer, C., Wickinghoff, J., Weber M., Geimer S. & **Scheibel, T.** (2012). Interactions of fibroblasts with different morphologies made of an engineered spider silk protein *Adv. Eng. Mater.* **14**, B67-B75. doi: 10.1002/adem.201180072
 56. Keerl, D. & **Scheibel, T.** (2012). Characterization of natural and biomimetic spider silk fibers. *Bioinspired, Biomimetic and Nanobiomaterials (BBN)* **1**, 83-94. doi: 10.1680/bbn.11.00016

57. Blüm, C. & **Scheibel, T.** (2012). Control of drug loading and release properties of spider silk sub-microparticles. *BioNanoSci.* **2**, 67-74. doi: 10.1007/s12668-012-0036-7
58. Claussen, K. U., Giesa, R., **Scheibel, T.** & Schmidt, H.-W. (2012). Learning from Nature: Synthesis and characterization of longitudinal polymer gradient materials inspired by mussel byssus threads. *Macromol. Rapid Commun.* **33**, 206-211. doi: 10.1002/marc.201100620
59. Bauer, F. & **Scheibel, T.** (2012). Artificial egg stalks made of a recombinantly produced lacewing silk protein. *Ang. Chemie Intl. Ed.* **124**, 6627–6630. doi: 10.1002/anie.201200591
60. Wohlrab, S., Müller, S., Schmidt, A., Neubauer, S., Kessler, H., Leal-Egaña A. & **Scheibel, T.** (2012). Cell adhesion and proliferation on RGD-modified recombinant spider silk proteins. *Biomaterials* **33**, 6650-6659. doi: 10.1016/j.biomaterials.2012.05.069
61. Young, S.L., Gupta, M., Hanske, C., Fery, A., **Scheibel, T.**, Tsukruk, V.V. (2012) Utilizing conformational changes for patterning thin films of recombinant spider silk proteins. *Biomacromolecules*, **13**, 3189-3199. doi: 10.1021/bm300964h
62. Wohlrab, S., Spieß, K. & **Scheibel, T.** (2012). Varying surface hydrophobicities of coatings made of recombinant spider silk proteins. *J. Mater. Chem.* **22**, 22050-22054. doi: 10.1039/c2jm35075k
63. Bauer, F., Bertinetti, L., Masic, A., **Scheibel, T.** (2012) Dependence of mechanical properties of Lacewing egg stalks on relative humidity. *Biomacromolecules* **13**, 3730-3735. doi: 10.1021/bm301199d
64. Hofmann, J.P., Denner, P., Nussbaum-Krammer, C., Kuhnc, P.-H., Suhre, M.H., **Scheibel, T.**, Lichtenthaler, S.F., Schaetzl, H.M., Bano, D. & Vorberg, I.M. (2013) Cell-to-cell propagation of infectious cytosolic protein aggregates. *PNAS* **110**, 5951–5956. doi: 10.1073/pnas.1217321110
65. Lang, G., Jokisch, S., **Scheibel, T.** (2013) Air filter devices including nonwoven meshes of electrospun recombinant spider silk proteins. *J. Vis. Exp.* **75**, e50492. doi: 10.3791/50492
66. Claussen, K.U., Lintz, E.S., Giesa, R., Schmidt, H.W. & **Scheibel, T.** (2013) Protein gradient films of fibroin and gelatine. *Macromol. BioSci.* **13**, 1396–1403. doi: 10.1002/mabi.201300221
67. Hardy, J.G., Leal-Eganã, A. & **Scheibel, T.** (2013) Engineered spider silk protein-based composites for drug delivery. *Macromol. BioSci.* **13**, 1431–1437. doi: 10.1002/mabi.201300233
68. Neubauer, M.P., Bluem, C., Agostini, E., Engert, J., **Scheibel, T.** & Fery, A. (2013) Micromechanical characterization of spider silk particles- *Biomater. Sci.* **1**, 1160-1165. doi: 10.1039/C3BM60108K
69. Helfricht, N., Klug, M., Mark, A., Kuznetsov, V., Bluem, C., **Scheibel, T.** & Papastavrou, G. (2013) Surface properties of spider silk particles in solution. *Biomater. Sci.* **1**, 1166-1171. doi: 10.1039/C3BM60109A

70. Bauer, F., Wohlrab, S. & **Scheibel, T.** (2013) Controllable cell adhesion, growth and orientation on layered silk protein films. *Biomater Sci.* **1**, 1244-1249. doi: 10.1039/c3bm60114e
71. Bluem, C., Nichtl, A. & **Scheibel, T.** (2013) Spider silk capsules as protective reaction containers for enzymes. *Adv. Funct. Mater.* **24**, 763-768. doi: 10.1002/adfm.201302100
72. Heim, M., Elsner, M.B. & **Scheibel, T.** (2013) Lipid-specific β -sheet formation in a mussel byssus protein domain. *Biomacromolecules* **14** (9), 3238-3245. doi: 10.1021/bm400860y
73. Keerl, D. & **Scheibel, T.** (2013) Rheological characterization of silk solutions. *Green Materials* **2**, 11-23. doi: 10.1680/gmat.13.00009
74. Humenik, M. & **Scheibel, T.** (2014) Nanomaterial building blocks based on spider silk-oligonucleotide conjugates. *ACS Nano* **8**, 1342-1349. doi: 10.1021/nn404916f
75. Zeplin, P.H., Maksimovikj, N.C., Jordan, M.C., Nickel, J., Lang, G., Leimer, A.H., Römer, L. & Scheibel, T. (2014) Spider silk coatings as a bioshield to reduce periprosthetic fibrous capsule formation. *Adv. Funct. Mater.* **24**, 2658-2666. doi: 10.1002/adfm.201302813
76. Dos Santos-Pinto, J.R.A., Lamprecht, G., Chenb, W.Q., Heob, S., Hardy, J.G., Priewalder, H., **Scheibel, T.R.**, Palma, M.S. & **Lubec, G.** (2014) Structure and post-translational modifications of the web silk protein spidroin-1 from *Nephila* spiders. *J. Prot.*, **105**, 174-185. doi: 10.1016/j.jprot.2014.01.002
77. Suhre, M.H., Gertz, M., Steegborn, C. & **Scheibel, T.** (2014) Structural and functional features of a collagen-binding matrix protein from the mussel byssus. *Nat. Comm.*, **5**, 3392. doi: 10.1038/ncomms4392
78. Suhre, M.H. & **Scheibel, T.** (2014) Structural and functional features of a collagen-binding matrix protein from the mussel byssus. *J. Struct. Biol.* **186**, 75-85. doi: 10.1016/j.jsb.2014.02.013
79. Hardy, J.G., Pfaff, A., Leal-Eganã, A., Müller, A.H.E. & **Scheibel, T.R.** (2014) Glycopolymer functionalization of engineered spider silk protein based materials for improved cell adhesion. *Macromol. Biosci.*, **14**, 936-42. doi: 10.1002/mabi.201400020
80. Suhre, M.H., **Scheibel, T.**, Steegborn, C. & **Gertz, M.** (2014) Crystallization and preliminary X-ray diffraction analysis of PTMP1. *Acta Crystallographica F* **70**, 769-772. doi: 10.1107/S2053230X14006165
81. Humenik, M., Magdeburg, M. & **Scheibel, T.** (2014) Influence of repeat numbers on self-assembly rates of repetitive recombinant spider silk proteins. *J. Struct. Biol.* **186**, 431-437. doi: 10.1016/j.jsb.2014.03.010
82. **Humenik, M.**, Drechsler, M. & **Scheibel, T.** (2014) Controlled hierarchical assembly of spider silk-DNA chimeras into ribbons and raft-like morphologies. *Nano Lett.* **14**, 3999-4004. doi: 10.1021/nl501412k

83. Lauterbach, A.Y. & **Scheibel, T.** (2014) Life cycle assessment of spider silk nonwoven meshes in an air filtration device. *Green Materials* **3**, 15-24. doi: 10.1680/gmat.14.00011
84. Zeplin, P.H., Berninger, A., Maksimovikj, N., van Gelder, P., **Scheibel, T.** & Walles, H. (2014) Verbesserung der Biokompatibilität von Silikonimplantaten. *Handchir. Mikrochir. Plast. Chir.* **46**, 336-41. doi: 10.1055/s-0034-1395558
85. Doblhofer, E. & **Scheibel, T.** (2015) Engineering of recombinant spider silk proteins allows defined uptake and release of substances. *J. Pharm. Sci.* **104**, 988-994. doi: 10.1002/jps.24300
86. Elsner, M.B., Herold, H., Müller-Herrmann, S., Bargel, H. & **Scheibel, T.** (2015) Enhanced cellular uptake of engineered spider silk particles. *Biomater. Sci.* **3**, 543-551. doi: 10.1039/c4bm00401a
87. Schacht, K., Jüngst, T., Schweinlin, M., Ewald, A., Groll, J. & **Scheibel, T.** (2015) Biofabrication of cell-loaded 3D spider silk constructs. *Angew, Chem.*, **54**, 2816-2820. doi: 10.1002/anie.201409846
88. Heidebrecht, A., Eisoldt, L., Diehl, J., Schmidt, A., Geffers, M., Lang, G. & **Scheibel, T.** (2015) Biomimetic fibers made of recombinant spidroins with the same toughness as natural spider silk. *Adv. Mater.*, **27**, 2189-2194. doi: 10.1002/adma.201404234
89. Müller-Herrmann, S. & **Scheibel, T.** (2015) Enzymatic degradation of films, particles and non-woven meshes. *ACS Biomater. Sci. Eng.*, **1**, 247-259. doi: 10.1021/ab500147u
90. Humenik, M., Smith, A.M., Arndt, S. & **Scheibel, T.** (2015) Ion and seed dependent fibril assembly of a spidroin core domain. *J. Struct. Biol.* **191**, 130-138. doi: 10.1016/j.jsb.2015.06.021
91. Humenik, M., Smith, A.M., Arndt, S. & **Scheibel, T.** (2015) Data for ion and seed dependent fibril assembly of a spidroin core domain. *Data in Brief* **4**: 571-576. doi: 10.1016/j.dib.2015.07.023
92. Peng, L., Jiang, S., Seuß, M., Fery, A., Lang, G., **Scheibel, T.** & Agarwal, S. (2016) Two-in-one composite fibers with side-by-side arrangement of silk fibroin and poly(L-lactide) by electrospinning. *Macromol. Mater. Eng.* **301**: 48-55. doi: 10.1002/mame.201500217
93. Schaal, D., Bauer, J., Schweimer, K., **Scheibel, T.**, Rösch, P. & Schwarzinger, S. (2016) Resonance assignment of an engineered amino-terminal domain of a major ampullate spider silk with neutralized charge cluster. *Biomol. NMR Assign.* **10**: 199-202. doi: 10.1007/s12104-016-9666-y
94. Schacht, K., Vogt, J. & Scheibel, T. (2016) Foams made of engineered recombinant spider silk proteins. *ACS Biomater. Sci. Eng.* **2**: 517-525. doi: 10.1021/acsbiomaterials.5b00483
95. Hardy, J. G., Torres-Rendon, J. G., Leal-Egana, A., Walther, A., Schlaad, H., Cölfen, H. & **Scheibel, T.** (2016) Biomineralization of engineered spider silk protein-based composite materials for bone tissue engineering. *Materials* **9**: 560. doi: 10.3390/ma9070560

96. DeSimone, E., Schacht, K. & **Scheibel, T.** (2016) Cations influence the crosslinking of hydrogels made of recombinant, polyanionic spider silk proteins. *Mater. Lett.* **183**: 101-104. doi: 10.1016/j.matlet.2016.07.044
97. Haynl, C., Hofmann, E., Pawar, K., Foerster, S. & **Scheibel, T.** (2016) Microfluidics-produced collagen fibers show extraordinary mechanical properties. *Nano Lett.*, in print. doi: 10.1021/acs.nanolett.6b02828

Review Articles (Corresponding Author)

1. **Scheibel, T. & Buchner, J.** (1998). The Hsp90 complex - a super-chaperone machine as a novel drug target. *Biochem. Pharmacol.* **56**, 675-682.
2. **Scheibel, T.** (2004). Amyloid formation of a yeast prion determinant. *J. Mol. Neuroscience* **23**, 13-22.
3. **Scheibel, T. & Buchner, J.** (2004). Book Review: Methods in Molecular Biology, Vol. 232: Protein Misfolding and Disease – Principles and Methods. Bross, P. & Gregerson, N. (eds), Humana Press, Towota 2003. 318 pp. *ChemBioChem* **5**, 1153-1154.
4. **Scheibel, T.** (2004). Spider silks: recombinant synthesis, assembly, spinning, and engineering of synthetic proteins. *Microbial Cell Factories* **3**, 14.
5. **Scheibel, T.** (2005). Protein fibers as performance proteins: new technologies and applications. *Curr. Opin. Biotech.* **16**, 427-433.
6. Vendrely, C. & **Scheibel, T.** (2007). Biotechnological production of spider silk proteins enables new applications. *Macromolecular Biosciences*, **7**, 401-409.
7. Roemer, L. & **Scheibel, T.** (2007). Seidenproteine als Grundlagen für neue Materialien. *Chemie in unserer Zeit* **41**, 306-314
8. Spiess, K., Roemer, L. & **Scheibel, T.** (2007). Transparente Folien aus Spinnenseide – Ein Hochleistungsmaterial aus der Natur in neuem Gewand. *GIT*, **11**
9. Roemer, L. & **Scheibel, T.** (2008). Spinnen wie die Spinnen. *Nachrichten aus der Chemie* **56**, 516-519
10. Weidenauer, U. & **Scheibel, T.** (2008). Spinnenseidenproteine als pharmazeutischer Hilfsstoff. *Deutsche Apothekerzeitung* **148**, 3152-3154
11. Hardy, J., Roemer, L. & **Scheibel, T.** (2008). Polymeric materials based on silk proteins. *Polymer* **49**, 4309-4327
12. Roemer, L. & **Scheibel, T.** (2009). The elaborate structure of spider silk. *Prion* **2**, 1-8
13. Grunwald, I., Rischka, K., Kast, S., **Scheibel, T.** & **Bargel, H.** (2009). Mimicking biopolymers on a molecular scale: Nano(bio)technology based on engineered proteins. *Phil. Trans. Roy. Soc. London: A*, **367**, 1727-1747. doi:10.1098/rsta.2009.0012
14. Hardy, J. & **Scheibel, T.** (2009). Silk-inspired polymers and proteins. *Biochem. Soc. Trans.* **37**, 677–681. doi:10.1042/BST0370677
15. Heim, M., Keerl, D. & **Scheibel, T.** (2008). Spider Silk: From Soluble Protein to Extraordinary Fibers. *Angew. Chem. Int. Ed.* **48**, 2-15. doi: 10.1002/anie.200803341
16. **Scheibel, T.** (2009). Spinnenseide: Was Spiderman wissen sollte. *BioSpektrum* **15**, 23-25
17. **Hardy, J.G. & Scheibel, T.** (2009). Production and processing of spider silk proteins. *J. Polymer Sci A: Polymer Chemistry*, **47**, 3957–3963. doi: 10.1002/pola.23484

18. Heim, M., Römer, L. & **Scheibel, T.** (2010). Hierarchical structures made of protein. The complex architecture of spider webs and their constituent silk proteins. *Chem. Soc. Rev.* **39**, 156–164. doi: 10.1039/b813273a
19. Hagenau, A., **Scheibel, T.** (2010). Recombinant Production of Mussel Byssal Collagens – a Future Perspective. *Journal of Adhesion* **86**, 10-24
20. Smith A.M. & **Scheibel, T.** (2010) Functional amyloids used by organisms: A lesson in controlling assembly. *Macromol. Chem. Phys.* **211**, 127-135. doi: 10.1002/macp.200900420
21. Leal-Egaña, A. & **Scheibel, T.** (2010). Silk-based materials for biomedical applications. *Biotechnol. Appl. Biochem.* **55**, 155–167. doi:10.1042/BA20090229
22. Hardy, J.G. & Scheibel, T. (2010). Composite materials based on silk proteins. *Prog. Polymer Sci.* **35**, 1093-1115. doi:10.1016/j.progpolymsci.2010.04.005
23. Spiess, K., Lammel, A., **Scheibel, T.** (2010). Recombinant spider silk proteins for applications in biomaterials. *Macromol. Biosciences* **10**, 998-1007. doi: 10.1002/mabi.201000071
24. Spieß, K., Lammel, A., **Scheibel, T.** (2011). Recombinant Spider Silk Proteins for Applications in Biomaterials, *Best of Macros*, **2011**, S32-S41
25. **Scheibel, T.** (2011). Spider silk from nature to bio-inspired materials. *Chem Fiber Int* **3**, 15-16
26. Eisoldt, L., Smith, A.M. & **Scheibel, T.** (2011). Decoding the secrets of spider silk. *Materials Today* **14**, 80–86
27. Humenik, M., Smith, A.M. & **Scheibel, T.** (2011). Recombinant spider silks – biopolymers with potential for future applications. *Polymers* **3**, 640–661. doi:10.3390/polym3010640
28. **Scheibel, T.** (2012). Herstellung und Verarbeitung von Spinnenseidenproteinen. Biopolymere mit Anwendungspotenzial für die Zukunft. *GAK Gummi Fasern Kunststoff* **65**, 41-43.
29. Eisoldt, L., Thamm, C. & **Scheibel, T.** (2012). The role of terminal domains during storage and assembly of spider silk proteins. *Biopolymers* **97**, 355-361. doi: 10.1002/bip.22006
30. Leal-Egaña, A. & **Scheibel, T.** (2012). Interactions of cells with silk surfaces. *J. Mater. Chem.* **22**, 14330-14336. doi: 10.1039/c2jm31174g
31. Claussen, C.-U., **Scheibel, T.**, Schmidt, H.-W. & **Giesa, R.** (2012). Polymer gradient materials: Can Nature teach us new tricks? *Macromol. Mater. Eng.* **297**, 938–957. doi: 10.1002/mame.201200032
32. Heidebrecht, A. & **Scheibel, T.** (2013) Recombinant Production of Spider Silk Proteins. *Adv. Appl. Microbiol.* **82**, 115-153. doi: 10.1016/B978-0-12-407679-2.00004-1
33. Lintz, E.S. & **Scheibel, T.** (2013) Dragline, egg stalk, and byssus – A comparison of outstanding protein fibers. *Adv. Funct. Mater.* **23**, 4467–4482. doi: 10.1002/adfm.201300589
34. **Scheibel, T.** (2013) Spinnenseide – Biotechfaser mit naturidentischer Belastbarkeit. *Chemie & More* **4**, 3-5.
35. **Scheibel, T.** (2014) Die Natur als Vorbild für bioinspirierte Materialien der Zukunft. *DVS Seminare* **300**, 33-36.

36. Hagenau, A., Suhre, M.H. & **Scheibel, T.R.** (2014) Nature as a blueprint for polymer material concepts: protein fiber-reinforced composites as holdfasts of mussels. *Progr. Polym. Sci.* **39**, 1564-1583. doi: 10.1016/j.progpolymsci.2014.02.007
37. Schacht, K. & **Scheibel, T.** (2014) Processing of recombinant spider silk proteins into tailor-made materials for biomaterials applications. *Curr. Opin. Biotechnol.* **29**, 62-69. doi: 10.1016/j.copbio.2014.02.015
38. Lang, G. & **Scheibel, T.** (2014) Multifunktionale Spinnenseide – ein vielversprechender Werkstoff. *MaschinenMarkt* **26**, 36-39.
39. Borkner, C.B., Elsner, M.B. & **Scheibel, T.** (2014) Coatings and films made of silk proteins. *ACS Appl. Mater. Interface* **29**, 62-69. doi: 10.1021/am5008479
40. Zollfrank, C., **Scheibel, T.**, Seitz, H. & Travitzky, N. (2014) Bioinspired materials engineering. In: Ullmann's Encyclopedia of Industrial Chemistry 2014. doi: 10.1002/14356007.s04_s01
41. Humenik, M. & **Scheibel, T.** (2014) Self-assembly of nucleic acids, silk and hybrid materials thereof. *J. Phys. Condens. Matter* **26**, 503102. doi: 10.1088/0953-8984/26/50/503102
42. Heidebrecht, A. & **Scheibel, T.** (2014) Spionik - Biotech Spinnenseide und ihre Einsatzgebiete. *GIT Bioforum* **2**, 20-22.
43. **Scheibel, T.** (2015) Engineering of rec SSP allows defined drug uptake and release. *TechConnect Briefs 2015: Biotech, Biomaterials and Biomedical*. CRC Press
44. DeSimone, E., Schacht, K., Jüngst, T., Groll, J. & **Scheibel, T.** (2015) Biofabrication of 3D constructs: fabrication technologies and spider silk proteins as bioinks. *Pure Appl. Chem.* **87**: 737-749.
45. Doblhofer, E., Heidebrecht, A. & **Scheibel, T.** (2015) To spin or not to spin: spider silk fibers and more. *Appl. Microbiol. Biotechnol.* **99**: 9361-9380. doi: 10.1007/s00253-015-6948-8
46. Juengst, T., Smolan, W., Schacht, K., **Scheibel, T.** & Groll, J. (2016) Strategies and molecular design criteria for 3D printable hydrogels. *Chem. Rev.* **116**: 1496-1539. doi: 10.1021/acs.chemrev.5b00303
47. **Scheibel, T.** (2015) Vom Spinnennetz zur High-Tech-Faser. *Naturwiss. Rundschau.* **68**: 524-525.
48. **Scheibel, T.** (2015) Die Kräfte von Superhelden – Oder: Was Spiderman besser wissen sollte. Vorlesungsreihe KinderUniversität Bayreuth SS 2015.
49. Schacht, K., Juengst, T., Zehnder, T., Boccaccini, A.R., Groll, J. & **Scheibel, T.** (2016) Zellgewebe aus dem Drucker. *Nachrichten a. d. Chemie* **64**: 13-16. doi: 10.1002/nadc.20164044385
50. Juengst, T., Smolan, W., Schacht, K., **Scheibel, T.** & Groll, J. (2016) Strategies and molecular design criteria for 3D printable hydrogels. *Chem. Rev.* **116**: 1496-1539. doi: 10.1002/nadc.20164044385
51. Scheibel, T. & Bargel, H. (2016) Zukunftsfeld Bionik. *UBT Spektrum* **1**: 54 - 57

Book articles (Corresponding Author)

1. **Scheibel, T.** & Buchner, J. (1997). Hsp90 proteins: the Hsp90 family. In: M. J. Gething (ed.), *Guidebook to Molecular Chaperones and Protein-Folding Catalysts*, Oxford University Press, Oxford, pp. 147-151.
2. **Scheibel, T.** (2002). [PSI]-chotic yeasts: protein-only inheritance of a yeast prion. In: S. G. Pandalai (ed.), *Recent Research in Molecular Microbiology* **1**, Hindustan Publ. Corp., Delhi, pp. 71-89.
3. **Scheibel, T.** & Serpell, L. (2005). Physical methods to study fibril formation. In: J. Buchner & T. Kiefhaber (eds.), *Handbook of Protein Folding* **Vol. II**, Wiley VCH, Weinheim, pp. 193-249.
4. **Scheibel, T.** & Buchner, J. (2006). Protein aggregation as a cause for disease. In: M. Gaestel (ed.), *Molecular Chaperones in Health and Disease; Handbook of Experimental Pharmacology* **172**, Springer Berlin Heidelberg, pp. 199-219.
5. Vendrely, C.; **Scheibel, T.** (2006). Mammalian versus yeast prions – Biophysical insights in structure and assembly mechanisms. In: B. V. Douphet (ed.), *Trends in Prion Research*, Nova Publisher, Ch. 11, pp. 251-284.
6. Sen Gupta, S. & **Scheibel, T.** (2007). Folding, self-assembly and conformational switches of proteins. In: J. Zbilut & T. Scheibel (eds.), *Protein Folding - Misfolding: Some Current Concepts of Protein Chemistry*; Nova Publisher, pp. 1-33
7. Roemer, L. & **Scheibel, T.** (2007). Herstellung und Anwendung von Spinnenseide. In: A. Kesel & D. Zehren (eds), *Bionik: Patente aus der Natur*, Bremen, pp. 130-139
8. Lammel, A., Keerl, D., Roemer, L. & **Scheibel, T.** (2007) Proteins: Polymers of natural origin". In: J. Hu (ed.), *Biomaterials: Chemistry and Physics*, pp. 1-22
9. Vendrely, C., Ackerschott, C., Roemer, L. & **Scheibel, T.** (2008). Molecular design of performance proteins with repetitive sequences: Recombinant flagelliform spider silk as basis for biomaterials. In: E. Gazit & R. Nussinov (eds), *Methods in Molecular Biology. Nanostructure Design: Methods and Protocols*. **474**; Humana Press, New York, pp. 3-14
10. Roemer, L. & **Scheibel, T.** (2008). The elaborate structure of spider silk. In: T. Scheibel (ed.), *Fibrous Proteins*; Landes Biosciences, Austin
11. Lammel, A.; Spieß, K.; Blüm, C.; Schwab, M.; Winter, G.; **Scheibel, T.** (2009) Spinnenseidenproteine – biopolymerische Materialien für medizintechnische Anwendungen. In: W. Krenkel (ed), *Verbundwerkstoffe*; Wiley VCH, Weinheim, pp. 683-688.
12. Keerl, D.; Bauer, F.; Hardy, J.; Slotta, U.; **Scheibel, T.** (2009) Verspinnen von Proteinfasern für technische Anwendungen. In: W. Krenkel (ed), *Verbundwerkstoffe*; Wiley VCH, Weinheim, pp. 689-692.
13. Humenik, M., **Scheibel, T.** & Smith, A. (2011). Spider silk: Understanding the structure-function relationship of a natural fiber. In: S. Horwotka (ed), *Progress in Molecular Biology and*

Translational Science, Vol. **103**: *Molecular Assembly in Natural and Engineered Systems*; Academic Press, London, pp. 131-185

14. Slotta, U., Spieß, K. & **Scheibel, T.** (2012). Spider silk. In: S. P. Jarvis & A. S. Mostaert (eds), *The Functional Fold – Amyloid Structures in Nature*, Pan Stanford Publishing, Singapore, pp. 73-90
15. **Bargel, H.** & **Scheibel, T.** (2012). Molekulare Bionik – vom Molekül zur technischen Anwendung. In: T. Speck, O. Speck, C. Neinhuis & H. Bargel (eds), *Bionik: faszinierende Lösungen der Natur für die Technik der Zukunft*; Lavori Verlag, Freiburg, pp. 112-117
16. Smith, A. & **Scheibel, T.** (2013). Hierarchical protein assemblies as a basis for materials. In: P. Fratzl, J. Dunlop & R. Weinkamer (eds), *Materials Design Inspired by Nature: Function Through inner Architecture*; RCS Publishing, Cambridge, pp. 256-281. doi: 10.1039/9781849737555-00256
17. Lauterbach, A.Y. & **Scheibel, T.** (2013) Determining the Environmental Benefit of Artificial Spider Silk Products. *CTSI-Cleantech* 2013, 108-111
18. Wohlrab, S., Thamm, C. & **Scheibel, T.** (2013) The power of recombinant spider silk proteins In: T. Asakura and T. Miller (eds): *Biotechnology of Silk*. Biologically-Inspired Systems **5**, Springer Science & Business Media, Dordrecht. doi: 10.1007/978-94-007-7119-210
19. Neuenfeldt, M. & **Scheibel, T.** (2014) Silks from insects – from natural diversity to applications. In: K. H. Hoffmann (ed): *Insect Molecular Biology and Ecology*. CRC Press, pp. 376-400
20. Scheibel, T., Zahn, H. & Krasowski, A. (2016) Silk. In: *Ullmann's Encyclopedia of industrial Chemistry*. Wiley-VCH Verlag GmbH & Co. doi: 10.1002/14356007.a24_095.pub2