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**Professor of Biochemistry**

**Work Address**

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**Education**

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1983 Ph.D. (Dr.rer.nat.) Peptide Chemistry, Macromolecular Chemistry, University of Aachen, Germany  
1981 Dipl. Chem., Macromolecular Chemistry, University of Aachen, Germany  
1978 IAESTE Industrial Traineeship, AB Volvo, R&D, Gothenburg, Sweden  
1975 IAESTE Industrial Traineeship, Hellenic Aspropyrgos Refinery, Quality Control. Athens, Greece

**Professional Employment**

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***Max Planck Institute of Psychiatry***

2002-Present Head, Proteomics and Biomarkers  
2003-Present Professor, Department of Biochemistry, University of Munich  
2004-Present Faculty, International Max Planck Research School for Molecular Life Sciences  
2009-Present Faculty, Graduate Program of Systemic Neurosciences, University of Munich  
2015-Present Faculty, International Max Planck Research School for Translational Psychiatry  
2019-Present Adjunct Faculty, CAS-MPG Partner Institute of Computational Biology, Shanghai

***University of California, San Francisco, Howard Hughes Medical Institute***

1986-2002 Director, Protein Structure Laboratory  
1986-1988 Instructor of Medicine  
1988-1994 Assistant Professor of Medicine  
1993-2002 Associate Investigator, Cardiovascular Research Institute  
1994-2000 Associate Professor of Medicine  
2000-2002 Professor of Medicine

***Roche Institute of Molecular Biology, Nutley, NJ***

1983-1986 Postdoctoral Fellow, Department of Cell Biology

***University of Aachen***

1981-1982 Research Associate, Macromolecular Chemistry, University of Aachen, Germany  
1982-1983 Research Associate, German Wool Research Institute, University of Aachen, Germany

**Professional Activities**

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2004-2008 BMBF National Genome Research Network, Project Committee  
2005-2011 Association of Biomolecular Research Facilities, Proteomics Research Group  
2007-2010 Association of Biomolecular Research Facilities, Executive Board  
2007-Present fNIH Biomarkers Consortium, Neuroscience Steering Committee  
2008-Present Association of Biomolecular Research Facilities, Metabolomics Research Group  
2010-2015 EU Innovative Medicines Initiative, NEWMEDS, Scientific Advisory Board  
2011-2012 American Society for Mass Spectrometry, Pharmaceuticals Interest Group  
2011-Present International Expert Panel, National Medical Research Council, Singapore  
2016-2017 Visiting Scholar, University of California, San Diego, Skaggs School of Pharmacy  
2017-2020 Molecular Neuropsychiatry, Editorial Board  
2017-Present External Advisory Board, Hamartoma P01, Harvard University  
2018-Present Academic Advisor, Global Distinguished Scientist Center of Nanjing University  
2018-Present LMU-China Academic Network, Advisory Board  
2019-Present Visiting Scientist, CAS Kunming Institute of Zoology  
2020-Present Cohen Veterans Bioscience, Metabolomics Working Group

## Awards and Grants

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1983 Wilhelm Borchers Medal, University of Aachen  
1983-1986 Postdoctoral Fellowship, Roche Institute of Molecular Biology  
1987-1988 Research Grant, Scleroderma Society  
1987-1988 Individual Investigator Research Grant, Academic Senate, UC San Francisco  
1988-1989 Research Evaluation and Allocation Committee, UC San Francisco  
1988-1990 United Scleroderma Foundation  
1993-1996 American Heart Association Research Grant  
1996-2001 American Heart Association, California Affiliate Research Grant  
1998-2001 National Science Foundation, Research Award  
2002-2004 Australian Research Council, Research Grant, Partner Investigator  
2004-2005 Bavaria California Technology Grant  
2004-2008 BMBF National Genome Research Network, Neuronet  
2004-2008 BMBF National Genome Research Network, Exploratory Project Grant  
2006-2011 BMBF QuantPro-Quantitative Analysis of Dynamic Processes in Living Systems  
2008-2013 BMBF National Genome Research Network Plus, MooDS  
2009-2012 BMBF Molecular Diagnostics  
2013-2018 NIH Common Fund, Collaborative Activities to Promote Metabolomics Research  
2014-2018 ERANET-NEURON Mental Disorders  
2015-2018 KMU-Innovativ  
2019-2022 CAS Presidents International Fellowship Initiative, Visiting Scientist Program

## Memberships

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American College of Neuropsychopharmacology  
American Society for Mass Spectrometry  
US HUPO  
German Chemical Society

## Publications

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1. Turck, CW and Berndt, H. (1981) Synthesis of defined peptide derivatives by aminolysis of 3-[N<sup>□</sup>-acyl-peptidyloxy]-2-hydroxy-N-alkylbenzamides at elevated temperatures. Part I: Hoppe Seyler's Z Physiol Chem 362:821-828. [[Pubmed](#)]
2. Krupen, K, Turck, CW, Stein, S, Kapp, JA and Webb, DR. (1985) Purification of antigen-specific suppressor factors. Methods Enzymol 116:325-340. DiSabato, G., Langone, J.J. and VanVunakis, A., eds., Academic Press, New York. [[Pubmed](#)]
3. Turck, CW, Kapp, JA and Webb, DR. (1985) Purification and characterization of a second order monoclonal T-cell suppressor factor specific for L-glutamic acid<sup>60</sup>-L-alanine<sup>30</sup>-L-tyrosine<sup>10</sup>. J Immunol 135:3232-3237. [[Pubmed](#)]
4. Turck, CW, Kapp, JA and Webb, DR. (1986) Structural analyses of a monoclonal heterodimeric suppressor factor specific for L-glutamic acid<sup>60</sup>-L-alanine<sup>30</sup>-L-tyrosine<sup>10</sup>. J Immunol 137:1904-1909. [[Pubmed](#)]
5. Webb, DR, Kapp, JA, Krupen, K, Pierce, CW, Sorensen, CM and Turck, CW. (1986). Antigen-specific suppressor factors: Current perspectives. In: Mediators of Immune Regulation and Immunotherapy. Singhal, SK and Delovitch, TL, eds., Elsevier Press.
6. Webb, DR, Kapp, JA, Krupen, K, Pierce, CW, Sorensen, CM and Turck, CW (1986) Factors from T suppressor cells: Current status and perspectives. In: Advances in Immunopharmacology, Proc. of the 3rd Intern. Immunopharmacology Meet.
7. Aliakbari, J, Sreedharan, SP, Turck, CW and Goetzl, EJ. (1987) Selective localization of vasoactive intestinal peptide and substance P in human eosinophils. Biochem Biophys Res Comm 148:1440-1445. [[Pubmed](#)]
8. Loh, EY, Lanier, LL, Turck, CW, Littman, DR, Davis, MM, Chien, Y-H and Weiss, A. (1987) Identification and sequence of a fourth human T cell antigen receptor chain. Nature 330:569-572. [[Pubmed](#)]
9. Turck, CW, Dohlman, JG and Goetzl, EJ. (1987) Immunological mediators of wound healing and fibrosis. J Cell Physiol (Suppl.) 5:89-93. [[Pubmed](#)]
10. Webb, DR, Turck, CW, Mensi, N, Kapp, JA and Kraig, E. (1987) Structural relationships among antigen specific suppressor factors and the T-cell antigen receptor for the terpolymer L-glutamic acid<sup>60</sup>-L-alanine<sup>30</sup>-L-tyrosine<sup>10</sup>. J Cell Biochem (Suppl.S11D) 35:222. [[Wiley Interscience](#)]
11. Beisiegel, U, Weber, W, Havinga, JR, Ihrke, G, Hui, DY, Wernette-Hammond, ME, Turck, CW, Innerarity, TL and Mahley, RW. (1988) Apolipoprotein E-binding proteins isolated from dog and human liver. Arteriosclerosis 8:288-297. [[Pubmed](#)]

- 12.Goetzl, EJ, Sreedharan, SP and Turck, CW. (1988) Structurally distinctive vasoactive intestinal peptides from rat basophilic leukemia cells. *J Biol Chem* 263:9083-9086. [[Pubmed](#)]
- 13.Turck, CW, Tom, JW, Kennedy, PW and Goetzl, EJ. (1988) Isolation and partial characterization of a fibroblast-activating factor generated by U937 human monocytes. *J Immunol* 141:1225-1230. [[Pubmed](#)]
- 14.Goetzl, EJ, Finch, RJ, Peterson, KE, Turck, CW and Sreedharan, SP. (1989) Mast cell and basophil mediation of lymphocyte functions. In: *Mast cell and basophil differentiation and function in health and disease*. Galli, SJ and Austen, KF., eds., Raven Press, New York, 247-254.
- 15.Goetzl, EJ, Kodama, KT, Turck, CW, Schiogolev, SA and Sreedharan, SP. (1989) Unique pattern of cleavage of vasoactive intestinal peptide by human lymphocytes. *Immunol* 66:554-558. [[Pubmed](#)]
- 16.Goetzl, EJ, Sreedharan, SP, Turck, CW, Bridenbaugh, R and Malfroy, B. (1989) Preferential cleavage of amino- and carboxyterminal oligopeptides from vasoactive intestinal polypeptide by human recombinant enkephalinase (Neutral endopeptidase, EC 3.4.24.11). *Biochem Biophys Res Comm* 158:850-854. [[Pubmed](#)]
- 17.Goetzl, EJ, Turck, CW, Peterson, KE, Finch, RJ, Kodama, KT, Adelman, DC and Sreedharan, SP. (1989) Neuromediators of immunity and inflammation. In: *Progress in Immunol*. Melchers, F., ed., Springer Verlag, Berlin, 772-779.
- 18.Kissel, JA, Fontaine, RN, Turck, CW, Brockman, HL and Hui, DY. (1989) Molecular cloning and expression of cDNA for rat pancreatic cholesterol esterase. *Biochem Biophys Acta* 1006:227-236. [[Pubmed](#)]
- 19.McGillis, JP, Park, A, Rubin-Fletter, P, Turck, CW, Dallman, MF and Payan, DG. (1989) Corticotropin-releasing factor stimulates rat lymphocyte proliferation. *J Neurosci Res* 23:346-352. [[Pubmed](#)]
- 20.Turck, CW, Kennedy, PW, Schiogolev, SA and Goetzl, EJ. (1989) Diverse responses of human fibroblasts to a highly-purified fibroblast activating factor (FAF) from the U937 line of human monocytes. *Immunol* 68:410-415. [[Pubmed](#)]
- 21.Adolff, CA, Golden, JA, Gamsu, G, Goetzl, EJ and Turck, CW. (1990) Reduction in pulmonary fibroblast-stimulating activity as an index of response to treatment of interstitial lung diseases. *New England J Med* 322:1890-1891. [[Pubmed](#)]
- 22.Baumhueter, S, Mendel, DB, Conley, PB, Kuo, CJ, Turck, CW, Graves, MK, Graves, MK, Courtois, G and Crabtree, GR. (1990) HNF-1 contains a homeobox and shares two sequence motifs with the POU domain proteins. *Genes Dev* 4:372-379. [[Pubmed](#)]
- 23.Goetzl, EJ, Grotmol, T, Van Dyke, RW, Turck, CW, Wershil, B, Galli, SJ. and Sreedharan, SP. (1990) Generation and recognition of vasoactive intestinal peptide by cells of the immune system. *Ann NY Acad Sci* 594:34-44. [[Pubmed](#)]
- 24.Mensi, N, Webb, DR, Turck, CW and Peltz, GA. (1990) Characterization of *Borrelia burgdorferi* proteins reactive with antibodies in synovial fluid of a patient with lyme arthritis. *Infect Immun* 58:2404-2407. [[Pubmed](#)]
- 25.Adolff, CH, Kennedy, PW, Golden, JA, Goetzl, EJ and Turck, CW. (1991) Growth factor gene expression in cells from bronchoalveolar lavage fluids. *Inflammation* 15: 259-268. [[Pubmed](#)]
- 26.Demeter, J, Medzihradzky, D, Kha, H, Goetzl, EJ and Turck, CW. (1991) Isolation and partial characterization of the structures of fibroblast activating factor-related proteins from U-937 cells. *Immunol* 72:350-354. [[Pubmed](#)]
- 27.Escobedo, JA, Kaplan, DR, Kavanaugh, WM, Turck, CW and Williams, LT. (1991) A PI3 kinase binds to PDGF receptors through a specific receptor sequence containing phosphotyrosine. *Mol Cell Biol* 11:1125-1132. [[Pubmed](#)]
- 28.Goetzl, EJ, Turck, CW and Sreedharan, SP. (1991) Production and recognition of neuropeptides by cells of the immune system. In: *Pseuchoneuroimmunology*. Ader, R, Felten, DL and Cohen, N., eds., Academic Press, Orlando, FL., 263-282.
- 29.McCrea, PD, Turck, CW and Gumbiner, B. (1991) A homolog of the armadillo protein in *Drosophila* (Plakoglobin) associated with E-cadherin. *Science* 254:1359-1361. [[Pubmed](#)]
- 30.Mitsuhashi, M, Akitaya, T, Turck, CW and Payan, DG. (1991) Amyloid beta protein substituent peptides do not interact with the substance P receptor expressed in cultured cells. *Mol Brain Res* 11:177-180. [[Pubmed](#)]
- 31.Parnet, P, Mitsuhashi, M, Turck, CW, Kerdelhue, B and Payan, DG. (1991) Tachykinin receptor cross-talk - immunological crossreactivity between the external domains of the substance-K and substance-P receptors. *Brain Behav Immun* 5:73-83. [[Pubmed](#)]
- 32.Shanafelt, M-C, Hindersson, P, Soderberg, C, Mensi, N, Turck, CW, Webb, DR, Yssel, H and Peltz, G. (1991) T cell and antibody reactivity with the *B. Burgdorferi* 60 kD heat shock protein in lyme arthritis. *J Immunol* 146:3985-3992. [[Pubmed](#)]
- 33.Turck, CW, Herrmann, J, Escobedo, JA and Williams, LT. (1991) Identification of phosphotyrosine residues during protein sequence analysis. *Pept Res* 4:36-39. [[Pubmed](#)]

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35. Yu, YL, Golden, JA, Migchielsen, AAJ, Goetzl, EJ and Turck, CW. (1991) Relative quantification of collagen mRNA in fibroblasts by a radioactive polymerase chain reaction technique. J Clin Lab Anal 5:262-267. [\[PubMed\]](#)
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37. Chan, AC, Iwashima, M, Turck, CW and Weiss, A. (1992) ZAP-70: A 70kD protein tyrosine kinase that associates with the TCR  $\zeta$  chain. Cell 71:649-662. [\[PubMed\]](#)
38. Fantl, WJ, Escobedo, JA, Martin, GA, Turck, CW, del Rosario, M, McCormick, F and Williams, LT. (1992) PDGF receptor binds to PI3 kinase and GAP through distinct tyrosine-containing sequences and with functional consequences for mitogenesis. Cell 69:413-423. [\[PubMed\]](#)
39. Gold, MR, Chan, VW-F, Turck, CW and DeFranco, AL. (1992) Membrane immunoglobulin crosslinking regulates phosphatidylinositol 3-kinase in B lymphocytes. J Immunol 148:2012-2022. [\[PubMed\]](#)
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41. Scarborough, RM, Naughton, M, Teng, W, Hung, DT, Rose, J, Vu, T-KH, Wheaton, VI, Turck, CW and Coughlin, SR. (1992) Tethered ligand agonist peptides: structural requirements for thrombin receptor activation reveal mechanism of proteolytic unmasking of agonist function. J Biol Chem 267:13146-13149. [\[PubMed\]](#)
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43. Turck, CW. (1992) Identification of phosphotyrosine residues in peptides by high performance liquid chromatography online derivative spectroscopy. Pept Res 5: 156-160. [\[PubMed\]](#)
44. Yu, Y-L, Kha, H, Golden, JA, Migchielsen, AAJ, Goetzl, EJ and Turck, CW. (1992) An acidic fibroblast growth factor protein generated by alternate splicing acts like an antagonist. J Exp Med 175:1073-1080. [\[PubMed\]](#)
45. Gu, Y, Turck, CW and Morgan, DO. (1993) Inhibition of CDK2 activity in vivo by an associated 20K regulatory subunit. Nature 366:707-710. [\[PubMed\]](#)
46. Hagman, J, Belanger, C, Travis, A, Turck, CW and Grosschedl, R. (1993) Cloning and functional characterization of early B-cell factor, a regulator of lymphocyte-specific gene expression. Genes Dev 7:760-773. [\[PubMed\]](#)
47. Hahm, K, Kim, G, Turck, CW and Smale, ST. (1993) Isolation of a murine gene encoding a nucleic acid-binding protein with homology to HNRNP-K. Nucleic Acids Res 11:3894. [\[PubMed\]](#)
48. Herrmann, J, Turck, CW, Atchison, RE, Huflejt, ME, Poulter, L, Gitt, MA, Burlingame, AL, Barondes, SH and Leffler, H. (1993) Primary structure of the soluble lactose binding lectin L-29 from rat and dog and interaction of its non-collagenous proline-, glycine-, tyrosine-rich sequence with bacterial and tissue collagenase. J Biol Chem 268:26704-26711. [\[PubMed\]](#)
49. Huflejt, ME, Turck, CW, Lindstedt, R, Barondes, SH and Leffler, H. (1993) L-29, a soluble lactose-binding lectin, is phosphorylated on serine 6 and serine 12 in vivo and by casein kinase I. J Biol Chem 268:26712-26718. [\[PubMed\]](#)
50. Kassarian, A, Schellenberger, V and Turck, CW. (1993) Screening of synthetic peptide libraries with radiolabeled acceptor molecules. Pept Res 6:129-133. [\[PubMed\]](#)
51. Lahesmaa, R, Shanafelt, M-C, Allsup, A, Soderberg, C, Anzola, J, Turck, CW, Steinmann, L and Peltz, G. (1993) Preferential usage of T-cell antigen receptor-V region gene segment V-beta-5.1 by *Borrelia-burgdorferi* antigen-specific T-cell clones isolated from a patient with lyme disease. J Immunol 150:4125-4135. [\[PubMed\]](#)
52. Oda, Y, Herrmann, J, Gitt, MA, Turck, CW, Burlingame, AL, Barondes, SH and Leffler, H. (1993) Soluble lactose-binding lectin from rat intestine with two different carbohydrate-binding domains in the same peptide chain. J Biol Chem 268: 5929-5939. [\[PubMed\]](#)
53. Schellenberger, V, Turck, CW, Hedstrom, L and Rutter, WJ. (1993) Mapping the S'-subsites of serine proteases using acyl transfer to mixtures of peptide nucleophiles. Biochem 32:4349-4353. [\[PubMed\]](#)
54. Sharp, D, Blinderman, L, Combs, KA, Kienzle, B, Ricci, B, Wager-Smith, K, Gil, CM, Turck, CW, Bouma, M-E, Rader, DJ, Aggerbeck, LP, Gregg, RE, Gordon, DA and Wetterau, JR. (1993) Cloning and gene defects in microsomal triglyceride transfer protein associated with abetalipoproteinaemia. Nature 365:65-69. [\[PubMed\]](#)
55. Tsirka, SE, Turck, CW and Coffino, P. (1993) Multiple active conformers of mouse ornithine decarboxylase. Biochem J 293:289-295. [\[PubMed\]](#)

56. Tsutsumi, A, Kubo, M, Fujii, H, Freire-Moar, J, Turck, CW and Ransom, JT. (1993) Regulation of protein kinase C isoform proteins in phorbol ester-stimulated Jurkat T lymphoma cells. *J Immunol* 150:1746-1754. [[Pubmed](#)]
57. Turck, CW. (1993) Multiple peptide synthesis and applications. *ABRF News* 4:17-19. [[ABRF News](#)]
58. Wang, Z-E, Reiner, SL, Hatam, F, Heinzl, FP, Bouvier, J, Turck, CW and Locksley, RM. (1993) Targeted activation of CD8 cells and infection of b2-microglobulin-deficient mice fail to confirm a primary protective role for CD8 cells in experimental Leishmaniasis. *J Immunol* 151:2077-2086. [[Pubmed](#)]
59. Wershil, BK, Turck, CW, Sreedharan, SP, Yang, J, An, S, Galli, SJ and Goetzl, EJ. (1993) Variants of vasoactive intestinal peptide in mouse mast cells and rat basophilic leukemia cells. *Cell Immunol* 151:369-378. [[Pubmed](#)]
60. Barja, P, Alavi-Nassab, A, Turck, CW and Freire-Moar, J. (1994) Inhibition of T cell activation by protein kinase C pseudosubstrates. *Cell Immunol* 153:28-38. [[Pubmed](#)]
61. Gerszten, RE, Chen, J, Ishii, M, Ishii, K, Wang, L, Nanevicz, T, Turck, CW, Vu, T-KH and Coughlin, S.R. (1994) Specificity of the thrombin receptor for agonist peptide is defined by its extracellular surface. *Nature* 368:648-651. [[Pubmed](#)]
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63. Hahm, K, Ernst, P, Lo, K, Kim, GS, Turck, CW and Smale, ST. (1994) The lymphoid transcription factor LyF-1 is encoded by specific, alternatively spliced mRNAs derived from the *Ikaros* gene. *Mol Cell Biol* 14:7111-7123. [[Pubmed](#)]
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74. Turck, CW and Edenson, SP. (1994) Mapping of tyrosine kinase autophosphorylation sites with synthetic peptide substrates. *Pept Res* 7:140-145. [[Pubmed](#)]
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