

Christoph W. Turck, Ph.D.
Professor of Biochemistry

EDUCATION

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|------|---|
| 1981 | M.Sc. (Dipl. Chem.), Chemistry
University of Aachen, Germany |
| 1983 | Ph.D. (Dr. rer. nat.), Chemistry
Department of Macromolecular Chemistry
University of Aachen, Germany |

PROFESSIONAL EMPLOYMENT

Max Planck Institute of Psychiatry

- | | |
|----------------|--|
| 2002 – Present | Head, Proteomics and Biomarkers |
| 2003 – Present | Adj. Professor
Department of Biochemistry, University of Munich |
| 2004 – Present | Faculty
International Max Planck Research School of Life Sciences |
| 2009 – Present | Faculty
Graduate School of Systemic Neurosciences |

University of California San Francisco, School of Medicine, Howard Hughes Medical Institute

- | | |
|-------------|---|
| 2000 – 2002 | Professor, Department of Medicine |
| 1993 – 2002 | Associate Investigator, Cardiovascular Research Institute |
| 1986 – 2002 | Director, Protein Structure Laboratory
Howard Hughes Medical Institute |
| 1994 – 2000 | Associate Professor, Department of Medicine |
| 1988 – 1994 | Assistant Professor, Department of Medicine |
| 1986 – 1988 | Instructor, Department of Medicine |

Roche Institute of Molecular Biology

- | | |
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| 1983 – 1986 | Postdoctoral Fellow, Department of Cell Biology
Advisor: Dr. David R. Webb |
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University of Aachen

1982 – 1983 Research Associate, Department of Macromolecular
Chemistry

1981 – 1982 Research Associate, German Wool Research Institute

Traineeships

1978 Industrial Traineeship (IAESTE), Volvo, AB, Research
and Development. Göteborg, Sweden

1975 Industrial Traineeship (IAESTE), Hellenic Refinery,
Quality Control. Athens, Greece

PROFESSIONAL ACTIVITIES

[fNIH Biomarkers Consortium, Neuroscience Steering Committee](#)

[EU Innovative Medicines Initiative, NEWMEDS, Scientific Advisory Board](#)

[Association of Biomolecular Research Facilities, Metabolomics Research Group](#)

[American Society for Mass Spectrometry, Pharmaceuticals Interest Group](#)

[Biomarkers in Medicine, Editorial Board](#)

AWARDS AND GRANTS

Wilhelm Borchers Medal, University of Aachen, 1983

Postdoctoral Fellowship, Roche Institute of Molecular Biology, 1983-1986

Research Grant, Scleroderma Society, 1987-1988

Individual Investigator Research Grant, Academic Senate, UCSF, 1987-1988

Research Evaluation and Allocation Committee, UCSF, 1988-1989

United Scleroderma Foundation, Watsonville, CA, 1988-1990

American Heart Association Research Grant, 1993-1996

American Heart Association, California Affiliate Research Grant, 1996-2001

National Science Foundation, Research Award, 1998-2001

Australian Research Council, Research Grant, Partner Investigator, 2002-2004

Bavaria California Technology Grant, 2004-2005

BMBF National Genome Research Network, Neuronet, 2004-2008

BMBF National Genome Research Network, Exploratory Project Grant, 2004-2008

[BMBF QuantPro-Quantitative Analysis of Dynamic Processes in Living Systems, 2006-2011](#)

[BMBF, National Genome Research Network Plus, MooDS, 2008-2013](#)

[BMBF, Molecular Diagnostics, 2009-2012](#)

MEMBERSHIPS

[American College of Neuropsychopharmacology](#)

[American Society of Mass Spectrometry](#)

[US HUPO](#)

[American Society for Biochemistry and Molecular Biology](#)

[German Chemical Society](#)

[German Proteome Society](#)

PUBLICATIONS

1. Turck, CW and Berndt, H. (1981) Synthesis of defined peptide derivatives by aminolysis of 3-[N^α-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 acid⁶⁰-L-alanine³⁰-L-tyrosine¹⁰. 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 acid⁶⁰-L-alanine³⁰-L-tyrosine¹⁰. 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, Dohlmans, 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 acid⁶⁰-L-alanine³⁰-L-tyrosine¹⁰. J Cell Biochem (Suppl.S11D) 35:222. [\[Wiley Interscience\]](#)
11. Beisiegel, U, Weber, W, Havinga, JR, Ihrke, G, Hui, DY, Wernet-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-Fletcher, 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. [\[Pubmed\]](#)
34. Williams, LT, Escobedo, JA, Fantl, W, Turck, CW and Klippel, A. (1991) Interactions of growth factor receptors with cytoplasmic signaling molecules. In: *Cold Spring_Harb Symp Quant Biol* 56:243-250. [\[Pubmed\]](#)
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. [\[Pubmed\]](#)
36. Blobel, CP, Wolsberg, TG, Turck, CW, Myles, DG, Primakoff, P and White, JM. (1992) A potential fusion peptide and an integrin ligand domain in a protein active in sperm-egg fusion. *Nature* 356:248-252. [\[Pubmed\]](#)
37. Chan, AC, Iwashima, M, Turck, CW and Weiss, A. (1992) ZAP-70: A 70kD protein tyrosine kinase that associates with the TCR ζ 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. [\[Pubmed\]](#)
40. Näthke, IS, Heuser, J, Lupas, A, Stock, J, Turck, CW and Brodsky, FM. (1992) Folding and trimerization of the clathrin triskelion hub. *Cell* 68:899-910. [\[Pubmed\]](#)
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. [\[Pubmed\]](#)
42. Shanafeldt, M-C, Anzola, J, Soderberg, C, Yssel, H, Turck, CW and Peltz, G. (1992) Epitopes on the outer surface protein A of *borrelia burgdorferi* recognized by antibodies and T cells of patients with lyme disease. *J Immunol* 148:218-224. [\[Pubmed\]](#)
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, Nanevich, 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. [\[Pubmed\]](#)
62. Goetzl, EJ, Patel, DR, Kishiyama, JL, Smoll, AC, Turck, CW, Law, NM, Rosenzweig, SA and Sreedharan, SP. (1994) Specific recognition of the human neuroendocrine receptor for vasoactive intestinal peptide by anti-peptide antibodies. *Mol Cell Neurosci* 5:145-152. [\[Pubmed\]](#)
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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66. Lee, TH, Turck, CW and Kirschner, MW. (1994) Inhibition of CDC2 activation by INH/PP2A. *Mol Biol Cell* 5:323-338. [\[Pubmed\]](#)
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69. Rottapel, R, Turck, CW, Casteran, N, Liu, X, Birnbaum, D, Pawson, T and Dubreuil, P. (1994) Substrate specificities and identification of a putative binding site for PI3K in the carboxy tail of the murine Flt3 receptor tyrosine kinase. *Oncogene* 9:1755-1765. [\[Pubmed\]](#)
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73. Turck, CW. (1994) Radioactive screening of synthetic peptide libraries. *Methods* 6: 396-400. [\[Elsevier\]](#)
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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