

Gunnar von Heijne -Publications

1. von Heijne,G., & Teder,A. (1973) Kinetics of the Decomposition of Aqueous Chlorine Dioxide Solutions. *Acta Chem.Scand.* 27, 4018-4019.
2. von Heijne.G., & Blomberg,C. (1976) Kinetic Aspects of the DNA Helix-Cruciform Transition. *J.theor.Biol.* 63, 347-353.
3. Blomberg,C., von Heijne,G., & Nilsson,L. (1977) Description of Some Processes in Protein Synthesis From a Statistical Mechanical Point of View. *Ann.Isr.Phys.Soc.* 2, 970-973.
4. von Heijne,G., Nilsson,L., & Blomberg,C. (1977) Translation and Messenger RNA Secondary Structure. *J.theor.Biol.* 68, 321-329.
5. von Heijne,G., & Blomberg,C. (1977) The β -structure: Inter-strand Correlations. *J.Mol.Biol.* 117, 821-824.
6. von Heijne,G., & Blomberg,C. (1978) Some Global β -sheet Characteristics. *Biopolymers* 17, 2033-2037.
7. von Heijne,G., Nilsson,L., & Blomberg,C. (1978) Models for mRNA Translation: Theory versus Experiment. *Eur.J.Biochem.* 92, 397-402.
8. von Heijne,G., Blomberg,C., & Baltscheffsky,H. (1978) Early Evolution of Cellular Electron Transport: Molecular Models for the Ferredoxin-Rubredoxin-Flavodoxin Region. *Origins of Life* 9, 27-37.
9. Baltscheffsky,H., von Heijne,G., & Blomberg,C. (1978) Protein Secondary Structure and the Molecular Evolution of Biological Electron Transport.inMatsubara,H. & Yamanaka,T. (eds.): *Evolution of Protein Molecules.* Japan Scientific Societies Press. pp. 141-147.
10. von Heijne,G., Leimar,O., & Blomberg,C. (1978) On the Emergence of New Function in Primitive Proteins. *J.theor.Biol.* 75, 167-180.
11. von Heijne,G., & Blomberg,C. (1979) The Concentration Dependence of the Error Frequencies and Some Related Quantities in Protein Synthesis. *J.theor.Biol.* 78, 113-120.
12. von Heijne,G., & Blomberg,C. (1979) Trans-Membrane Translocation of Proteins: The Direct Transfer Model. *Eur.J.Biochem.* 97, 175-181.

13. von Heijne,G. (1980) Trans-Membrane Translocation of Proteins: A Detailed Physico-Chemical Analysis. *Eur.J.Biochem.* 103, 431-438.
14. von Heijne,G. (1980) A Sequence Correlation Between Oppositely Charged Residues in Secreted Proteins. *Biochem.Biophys.Res.Comm.* 93, 82-86.
15. Blomberg,C., von Heijne,G., & Leimar,O. (1981) Competition, Coexistence, and Irreversibility in Models of Early Molecular Evolution.inWolman,Y. (ed.): *Origin of Life.* Reidel Publishing Co. pp.385-392.
16. von Heijne,G. (1981) On the Hydrophobic Nature of Signal Sequences. *Eur.J.Biochem.* 116, 419-422.
17. von Heijne,G. (1981) Membrane Proteins: The Amino Acid Composition of Membrane-Penetrating Segments. *Eur.J.Biochem.* 120, 275-278.
18. von Heijne,G. (1981) Models for Trans-Membrane Translocation of Proteins. *Biochem.Soc.Symp.* 46, 259-273.
19. von Heijne,G., & Savageau,M. (1982) RNA Splicing: Advantages of Parallel Processing. *J.theor.Biol.* 98, 563-574.
20. von Heijne,G. (1982) Signal Sequences are not Uniformly Hydrophobic. *J.Mol.Biol.* 159, 537-541.
21. von Heijne,G. (1982) A Theoretical Study of the Attenuation Control Mechanism. *J.theor.Biol.* 97, 227-238.
22. von Heijne,G. (1983) Patterns of Amino Acids near Signal-Sequence Cleavage Sites. *Eur.J.Biochem.* 133, 17-21.
23. Flinta,C., von Heijne,G., & Johansson,J. (1983) Helical Sidedness and the Distribution of Polar Residues in Trans-membrane Helices. *J.Mol.Biol.* 168, 193-196.
24. von Heijne,G. (1984) How Signal Sequences Maintain Cleavage Specificity. *J.Mol.Biol.* 173, 243-251.
25. von Heijne,G. (1984) Analysis of the Distribution of Charged Residues in the N-terminal Region of Signal Sequences: Implications for Protein Export in Prokaryotic and Eukaryotic Cells. *EMBO J.* 3, 2315-2318.

26. von Heijne,G. (1985) Structural and Thermodynamic Aspects of the Transfer of Proteins Into and Across Membranes.*In* Current Topics in Membranes and Transport 24, 151-179.
27. von Heijne,G. (1985) "Theoretical Experiments" on Amino Acid and Nucleotide Sequences: Three Case-Studies. Biomed.Biochim.Acta 6, 903-911.
28. ¹von Heijne,G. (1985) Signal Sequences: The Limits of Variation. J.Mol.Biol. 184, 99-105.
29. Liljenström,H., von Heijne,G., Blomberg,C., & Johansson,J. (1985) The tRNA Cycle and Its Relation to the Rate of Protein Synthesis. Eur.Biophys.J. 12, 115-119.
30. Persson,B., Flinta,C., von Heijne,G., & Jörnvall,H. (1985) Structures of N-terminally Acetylated Proteins. Eur.J.Biochem. 152, 523-527.
31. von Heijne,G. (1985) Ribosome - SRP - Signal Sequence Interactions: The Relay Helix Hypothesis. FEBS Lett. 190, 1-5.
32. Flinta,C., Persson,B., Jörnvall,H., & von Heijne,G. (1986) Sequence Determinants of Cytosolic N-terminal Protein Processing. Eur.J.Biochem. 154, 193-196.
33. von Heijne,G. (1986) Towards a Comparative Anatomy of N-terminal Topogenic Protein Sequences. J.Mol.Biol. 189, 239-242.
34. von Heijne,G. (1986) Why Mitochondria Need a Genome. FEBS Lett. 198, 1-4.
35. Liljenström,H., & von Heijne,G. (1987) Translation Rate Modification by Preferential Codon Usage: Intragenic Position Effects. J.theor.Biol. 124, 43-55.
36. von Heijne,G. (1986) Mitochondrial Targeting Sequences May Form Amphiphilic Helices. EMBO J. 5, 1335-1342.
37. von Heijne,G. (1986) A New Method for Predicting Signal Sequence Cleavage Sites. Nucl.Acids Res. 14, 4683-4690.
38. von Heijne,G. (1986) Net N-C Charge Imbalance may be Important for Signal Sequence Function in Bacteria. J.Mol.Biol. 192, 287-290.

¹ Among the 100 most cited articles in JMB during the journal's first 50 years.

39. von Heijne,G. (1986) The Distribution of Positively Charged Residues in Bacterial Inner Membrane Proteins Correlates With the Trans-Membrane Topology. *EMBO J.* 5, 3021-3027.
40. von Heijne,G., Blomberg,C., & Liljenström,H. (1987) Theoretical Modelling of Protein Synthesis. *J.theor.Biol.* 125, 1-14.
41. von Heijne,G. (1987) SIGPEP - A Sequence Database for Secretory Signal Peptides. *Protein Sequence and Data Analysis* 1, 41-42.
42. von Heijne,G., & Segrest,J. (1987) The Leader Peptides of Bacteriorhodopsin and Halorhodopsin are Potential Amphipathic Helices. *FEBS Lett.* 213, 238-240.
43. von Heijne,G., & Uhlén,M. (1987) Homology to Region X from Staphylococcal Protein A is *not* Unique to Cell Surface Proteins. *J.theor.Biol.* 127, 373-376.
44. von Heijne,G. (1987) *Sequence Analysis in Molecular Biology: Treasure Trove or Trivial Pursuit?* Academic Press, 188pp.
45. von Heijne,G., Wickner,W., & Dalbey,R. (1988) The Cytoplasmic Domain of *Escherichia coli* Leader Peptidase is a Translocation Poison Sequence. *Proc.Natl.Acad.Sci.USA* 85, 3363-3366.
46. von Heijne,G., & Gavel,Y. (1988) Topological Signals in Integral Membrane Proteins. *Eur.J.Biochem.* 174, 671-678.
47. von Heijne, G. (1988). Determinants of Protein Sorting Into and Across Membranes. In Op den Kamp,J.A.F. (Ed) *Membrane Biogenesis*. NATO ASI Series H-16, Springer Verlag. pp. 307-322.
48. von Heijne,G. (1988) Transcending the Impenetrable: How Proteins Come to Terms with Membranes. *Biochim.Biophys.Acta.* 947, 307-333.
49. Gavel, Y., Nilsson,L., & von Heijne,G. (1988) Mitochondrial Targeting Sequences: Why 'Non-Amphiphilic' Peptides May Still be Amphiphilic. *FEBS Letters* 235, 173-177.
50. von Heijne,G. (1988) Getting Sense out of Sequence Data. *Nature* 333, 605-608.
51. von Heijne,G. (1988) Role of the Signal Peptide in Protein Export. *ISI Atlas of Science* 1, 205-209.

52. von Heijne,G. (1988) Topogenic Signals in Membrane Protein Assembly. Proceedings of the 14th International Union of Biochemistry Congress.
53. von Heijne,G., Steppuhn,J., & Herrmann,R.G. (1989) Domain Structure of Mitochondrial and Chloroplast Targeting Peptides. Eur.J.Biochem. 180, 535-545.
54. von Heijne,G. (1989) The Structure of Signal Peptides from Bacterial Lipoproteins. Protein Engineering 2, 531-534.
55. von Heijne,G., & Abrahmsén,L. (1989) Species-Specific Variation in Signal Peptide Design: Implications for Protein Secretion in Foreign Hosts. FEBS Lett. 244, 439-446.
56. von Heijne,G. (1989) Control of Topology and Mode of Assembly of a Polytopic Membrane Protein by Positively Charged Residues. Nature 341, 456-458.
57. von Heijne,G. (1989) Structure of Targeting Peptides for Organellar Protein Import. Proceedings of the VIIIth International Congress on Photosynthesis. Kluwer Academic Publishers, Dordrecht.
58. Gavel,Y., & von Heijne,G. (1990) Sequence Differences Between Glycosylated and Non-glycosylated Asn-X-Thr/Ser Acceptor Sites. Protein Engineering 3, 433-442.
59. von Heijne,G. (1990) The Signal Peptide. J.Membr.Biol. 115, 195-201.
60. Franzén,L-G., Rochaix,J-D., & von Heijne,G. (1990) Chloroplast Transit Peptides from the Green Alga *Chlamydomonas reinhardtii* Share Features with Both Mitochondrial and Higher Plant Presequences. FEBS Lett. 260, 165-168.
61. Gavel,Y., & von Heijne,G. (1990) Cleavage-site Motifs in Mitochondrial Targeting Peptides. Protein Engineering 4, 33-37.
62. Gavel,Y., & von Heijne, G. (1990) A Conserved Cleavage-Site Motif in Chloroplast Transit Peptides. FEBS Lett. 261, 455-458.
63. von Heijne, G. (1990) Protein Targeting Signals. Current Opinion in Cell Biology 2, 604-608.
64. Nilsson,IM., & von Heijne,G. (1990) Fine-tuning the Topology of a Polytopic Membrane Protein: Role of Positively and Negatively Charged Amino Acids. Cell 62, 1135-1141.

65. Bilgin,N., Lee,J.I., Zhu,H., Dalbey,R., & von Heijne,G. (1990) Mapping of Catalytically Important Domains in *Escherichia coli* Leader Peptidase. EMBO J., 9, 2717-2722.
66. von Heijne,G., & Manoil,C. (1990) Membrane Proteins: From Sequence to Structure. Protein Engineering 4, 109-112.
67. Keegstra,K., & von Heijne,G. (1990) Transport of Proteins into Chloroplasts. In Herrmann,R. (ed.): Plant Gene Research: Cell Organelles. Springer Verlag. pp. 353-370.
68. von Heijne, G. (1990) Signals for Protein Import into Organelles. In Herrmann,R.G. & Larkins,B.O. (Eds.) "Plant Molecular Biology 2". NATO ASI series A, vol. 212, pp.583-593.
69. von Heijne,G. (1991) Cleavage-sites in Protein Targeting Signals. In Jörnvall,H., Höög,J-O., & Gustavsson,A-M. (Eds.) "Methods in Protein Sequence Analysis", Birkhäuser Verlag, Basel. pp. 231-238.
70. Nilsson, IM. & von Heijne,G. (1991) A *de novo* Designed Signal Peptide Cleavage Cassette Functions *in vivo*. J.Biol.Chem. 266, 3408-3410.
71. von Heijne,G. (1991) Proline-kinks in Transmembrane α -helices. J.Mol.Biol. 218, 499-503.
72. von Heijne,G. (1991) Computer Analysis of DNA and Protein Sequences. Eur.J.Biochem., 199, 253-256.
73. von Heijne,G. & Nishikawa,K. (1991) Chloroplast Transit Peptides: The Perfect Random Coil? FEBS Lett. 278, 1-3.
74. Wilson,I.B.H., Gavel,Y., & von Heijne,G. (1991) Amino Acid Distributions Around O-linked Glycosylation Sites. Biochem.J. 275, 529-534.
75. Gavel,Y., Steppuhn,J., Herrmann,R. & von Heijne,G. (1991) The "Positive-Inside Rule" Applies to Thylakoid Membrane Proteins. FEBS Lett. 282, 41-46.
76. von Heijne,G., Liljeström,P., Mikus,P., Andersson,H., & Ny,T. (1991) The Efficiency of the Uncleaved Secretion Signal in the Plasminogen Activator Inhibitor Type 2 Protein Can Be Enhanced by Point Mutations that Increase Its Hydrophobicity. J.Biol.Chem 266, 15240-15243.

77. Andersson,H., & von Heijne,G. (1991) A 30 Residues Long "Export Initiation Domain" Adjacent to the Signal Sequence is Critical for Protein Translocation Across the Inner Membrane of *Escherichia coli*. Proc.Natl.Acad.Sci USA 88, 9751-9754.
78. von Heijne,G., Hirai,T., Klösigen,R-B., Steppuhn,J., Keegstra,K., Herrmann,R. (1991) CHLPEP - A Database of Chloroplast Transit Peptides. Plant Molecular Biology Reporter 9, 104-126.
79. von Heijne,G. (1992) Sequence Determinants for Protein Import Into Chloroplasts and Thylakoid Membrane Protein Assembly. In Clarkson,D.T. and Cooke,D.T. (eds.) *Transport and Receptor Proteins of Plant Membranes*. Plenum Press, New York, pp. 195-199.
80. von Heijne,G. (1991) Protein Targeting - Basic Concepts. In *The Encyclopedia of Human Biology*, vol.6, pp. 237-243. Academic Press.
81. von Heijne,G. (1991) DNA, RNA, and Protein Sequences. Analysis by Computer. In *The Encyclopedia of Human Biology*, vol.3., pp.163-167. Academic Press.
82. Andersson,H., Bakker,E., & von Heijne,G. (1992) Different Positively Charged Amino Acids Have Similar Effects on the Topology of a Polytopic Transmembrane Protein in *E. coli*. J.Biol.Chem. 267, 1491-1495.
83. von Heijne, G. (1992) Cleavage-Site Motifs of Protein Targeting Sequences. In *Genetic Engineering, Principles and Methods*, vol.14. Plenum Press, New York. pp. 1-11.
84. Nilsson, IM., & von Heijne, G. (1992) A Signal Peptide With a Proline Next to the Cleavage Site Inhibits Leader Peptidase When Present in a *sec*-Independent Protein. FEBS Lett. 299, 243-246.
85. von Heijne, G. (1992) Sequence Determinants of Membrane Protein Topology. In Neupert,W & Lill, R. (Eds.) *Membrane Biogenesis and Protein Targeting*. Elsevier, Amsterdam. pp.75-84.
86. von Heijne, G. (1994) Decoding the Signals of Membrane Protein Sequences. In White, S. (Ed.) *Membrane Protein Structure: Experimental Approaches*. Oxford University Press, New York. pp. 27-40.

87. ²von Heijne, G. (1992) Membrane Protein Structure Prediction: Hydrophobicity Analysis and the 'Positive Inside' Rule. *J.Mol.Biol.* 225, 487-494.
88. Gavel, Y., & von Heijne, G. (1992) The Distribution of Charged Amino Acids in Mitochondrial Inner Membrane Proteins Suggests Different Modes of Membrane Integration for Nuclearly and Mitochondrially Encoded Proteins. *Eur.J.Biochem.* 205, 1207-1215.
89. Johansson, M., Nilsson, IM., & von Heijne, G. (1993) Positively Charged Amino Acids Placed Next to a Signal Sequence Block Protein Translocation More Efficiently in *Escherichia coli* than in Mammalian Microsomes. *Mol.Gen.Genet.*, 239, 251-256.
90. von Heijne, G. (1993) Design of Protein Targeting Signals and Membrane Protein Engineering. In Wrede, P. & Schneider, G. (Eds.) *Concepts of Protein Engineering and Design*, pp. 263-279. Walter de Gruyter, Berlin.
91. Wallin, E., Wettergren, C., Hedman, F., & von Heijne, G. (1993) Fast Needleman-Wunsch Scanning of Sequence Databanks on a Massively Parallel Computer. *CABIOS* 9, 117-118.
92. von Heijne, G. (1992) Assembly of *Escherichia Coli* Inner Membrane Proteins: *Sec*-Dependent and *Sec*-Independent Membrane Insertion. In Pullman, B. & Pullman, A. (Eds.): *Membrane Proteins: Structure and Function*. Kluwer Publishers. pp. 449-455.
93. Andersson, H., & von Heijne, G. (1993) *Sec*-dependent and *Sec*-independent Assembly of *E. coli* Inner Membrane Proteins: The Topological Rules Depend on Chain Length. *EMBO J.* 12, 683-691.
94. von Heijne, G. (1994) Signals for Protein Targeting Into and Across Membranes. In Maddy, A.H., & Harris, J.R. (Eds.) *Membrane Biogenesis*. Plenum Publishing Corporation, New York, pp. 1-19.
95. Dalbey, R.E., & von Heijne, G. (1992) Signal Peptidases in Prokaryotes and Eukaryotes: A New Protease Family. *TIBS* 17, 474-478.
96. von Heijne, G. (1993) Targeting Signals and Mechanisms of Protein Insertion Into Membranes. In Wirtz, K.A. & Gustafsson, J-Å (Eds.) *New Developments in*

² Among the 100 most cited articles in JMB during the journal's first 50 years.

Lipid-Protein Interactions and Receptor Function. NATO ASI Series, vol. A246, pp. 175-182. Plenum Publishing Corporation.

97. Cramer, W.A., Engelman, D.M., von Heijne, G., and Rees, D. (1992) Forces Involved in the Assembly and Stabilization of Membrane Proteins. *FASEB J.* 6, 3397-3402.
98. Nilsson, IM., and von Heijne, G. (1993) Determination of the Distance Between the Oligosaccharyl Transferase Active Site and the ER Membrane. *J.Biol.Chem.* 268, 5798-5801.
99. Nilsson, IM., Gafvelin, G., and von Heijne, G. (1993) Different *Sec*-Requirements for Signal Peptide Cleavage and Protein Translocation in a Model *E. coli* Protein. *FEBS Lett.* 318, 7-10.
100. Whitley, P., Nilsson, L., and von Heijne, G. (1993) A 3D-Model for the Membrane Domain of *Escherichia coli* Leader Peptidase Based on Disulphide Mapping. *Biochemistry* 32, 8534-8539.
101. Sipos, L., and von Heijne, G. (1993) Predicting the Topology of Eukaryotic Membrane Proteins. *Eur. J. Biochem.* 213, 1333-1340.
102. Andersson, H., and von Heijne, G. (1993) Position-specific Asp-Lys Pairing Can Affect Signal Sequence Function and Membrane Protein Topology. *J. Biol. Chem.* 268, 21389-21393.
103. Whitley, P., and von Heijne, G. (1995) Membrane Protein Assembly. In Dalbey, R. (Ed.) *Membrane Organization and Biogenesis in Prokaryotic Organisms*. JAI Press, pp. 1-16.
104. von Heijne, G. (1994) Membrane Proteins: From Sequence to Structure. *Annu. Rev. Biophys. Biomol. Struct.* 23, 167-192.
105. Whitley, P., and von Heijne, G. (1993) The DsbA-DsbB System Affects the Formation of Disulfide Bonds in Periplasmic But Not in Intramembraneous Protein Domains. *FEBS Lett.* 332, 49-51.
106. von Heijne, G. (1993) Assembly of Integral Membrane Proteins. In Op den Kamp, J.A.F. (Ed) *Biological Membranes: Structure, Biogenesis and Dynamics*. NATO ASI Series, vol. H82, pp.199-206. Springer Verlag, Berlin.

107. von Heijne, G. (1993) Membrane Protein Assembly: Can Protein-Lipid Interactions Explain the "Positive Inside" Rule? *In* Torriani, Silver & Yagil (Eds.) *Molecular Biology of Phosphate in Microorganisms*. ASM, pp. 247-250.
108. von Heijne, G. (1996) Computer-Assisted Identification of Protein Sorting Signals and Prediction of Membrane Protein Topology and Structure. *In* Villar, H.O. (Ed.) *Advances in Computational Biology*. JAI Press, pp. 1-14.
109. von Heijne, G. (1996) Targeting Signals for Protein Import Into Mitochondria and Other Subcellular Organelles. *In* Hartl, F-U. (Ed.) *Advances in Molecular and Cell Biology*, vol. 17., pp. 1-12. JAI Press, Inc.
110. Andersson, H., and von Heijne, G. (1994) Membrane Protein Topology: Effects of $\Delta\mu_{\text{H}^+}$ on the Translocation of Charged Residues Explain the "Positive Inside" Rule. *EMBO J.* 13, 2267-2272.
111. Gafvelin, G., and von Heijne, G. (1994) Topological "Frustration" in Multi-Spanning *E. coli* Inner Membrane Proteins. *Cell* 77, 401-412.
112. von Heijne, G. (1996) Prediction of Transmembrane Protein Topology. *In* Sternberg, M. (Ed.) *Prediction of Protein Structure - A Practical Approach*, pp. 101-109. Oxford University Press.
113. Cheng, S., Cao, G., Whitley, P., von Heijne, G., Kuhn, A., and Dalbey, R.E. (1994) Synergistic Insertion of Two Hydrophobic Regions Drives *sec*-Independent Membrane Protein Assembly. *J. Biol. Chem.* 269, 26898-26903.
114. Nilsson, IM., Whitley, P., von Heijne, G. (1994) The C-terminal Ends of Internal Signal and Signal-Anchor Sequences are Positioned Differently in the ER Translocase. *J. Cell Biol.* 126, 1127-1132.
115. Andersson, H., and von Heijne, G. (1994) Positively Charged Residues Influence the Degree of *Sec*-Dependence in Protein Translocation Across the *E. coli* Inner Membrane. *FEBS Lett.* 347, 169-172.
116. von Heijne, G. (1994) *Sec*-Independent Protein Insertion Into the Inner *E. coli* Membrane: A Phenomenon in Search of an Explanation. *FEBS Lett.* 346, 69-72.
117. von Heijne, G. (1994) Protein Sorting Signals: Simple Peptides with Complex Functions. *In* Jollés & Jörnvall (Eds.) *Interface Between Chemistry and Biochemistry*. Birkhäuser Verlag, in press.

118. Claros, M.G., and von Heijne, G. (1994) TopPred II: An Improved Software For Membrane Protein Structure Predictions. *CABIOS* 10, 685-686.
119. Whitley, P., Zander, T., Ehrmann, M., Haardt, M., Bremer, E., and von Heijne, G. (1994) *Sec*-Independent Translocation of a 100-Residues Long Periplasmic N-Terminal Tail in the *E. coli* Inner Membrane Protein ProW. *EMBO J.* 13, 4653-4661.
120. von Heijne, G. (1995) Membrane Protein Assembly: Rules of the Game. *BioEssays* 17, 25-30.
121. Whitley, P., Nilsson, IM., and von Heijne, G. (1994) *De novo* Design of Integral Membrane Proteins. *Nature Struct.Biol.* 1, 858-862.
122. Sääf, A., Andersson, H., Gafvelin, G., and von Heijne, G. (1995) *SecA*-Dependence of the Translocation of a Large Periplasmic Loop in the *E. coli* MalF Inner Membrane Protein is a Function of Sequence Context. *Mol.Membr.Biol.* 12, 209-215.
123. von Heijne, G. (1995) Membrane Protein Topogenesis in *Escherichia coli*. In Rothman, S.S. (Ed.) *Membrane Protein Transport*, vol. 3., pp. 201-214. JAI Press.
124. Hirsch, S., Muckel, E., Heemeyer, F., von Heijne, G., and Soll, J. (1994) A Receptor Component of the Chloroplast Protein Translocation Machinery. *Science* 266, 1989-1992.
125. von Heijne, G. (Editor) *Signal Peptidases*. RG Landes Press (1994).
126. Nielsen, H., Engelbrecht, J., von Heijne, G., and Brunak, S. (1996) Defining a Homology Threshold for a Functional Protein Sequence Pattern: The Signal Peptide Cleavage Site. *PROTEINS: Struct. Funct. Genet.* 24, 165-177.
127. Dalbey, R.D., Kuhn, A., and von Heijne, G. (1995). Directionality in protein translocation across membranes: The N-tail phenomenon. *Trends Cell Biol.* 5, 380-383.
128. Wallin, E., and von Heijne, G. (1995) Properties of N-terminal tails in G-protein coupled receptors - A statistical study. *Protein Engineer.* 8, 693-698.
129. Whitley, P., Sääf, A., Gafvelin, G., Johansson, M., Wallin, E., and von Heijne, G. (1995) Membrane protein anchors and polytopic determinants. *Biochem.Soc.Trans.*, 23,965-967.

130. Nilsson, I.M., Whitley, P., and von Heijne, G. (1996) Glycosylation mapping of the interaction between topogenic sequences and the ER translocase. In Op den Kamp, J.A.F. (Ed) *Biological Membranes: Structure, Biogenesis and Dynamics*. NATO ASI Series H, vol. 96, pp.9-14. Springer Verlag, Berlin.
131. van Klompenburg, W., von Heijne, G., and de Kruijff, B. (1995) A quantitative assay to determine the amount of signal peptidase I in *E.coli* and the orientation of membrane vesicles. *Mol.Membr.Biol.* 12, 349-353.
132. Whitley, P., Gafvelin, G., and von Heijne, G. (1995) *Sec*-independent translocation of the periplasmic N-terminal tail of an *E. coli* inner membrane protein: Position-specific effects on translocation of positively charged residues and construction of a protein with a C-terminal translocation signal. *J.Biol.Chem.* 270, 29831-29835. ([PDF](#))
133. Whitley, P., Nilsson, I.M., and von Heijne, G. (1996) A Nascent Secretory Protein May Traverse the Ribosome/ER-translocase Complex as an Extended Chain. *J.Biol.Chem.* 271, 6241-6244. ([PDF](#))
134. Whitley, P., Grahn, E., Kutay, U., Rapoport, T.A., and von Heijne, G. (1996) A 12 residues long poly-leucine tail is sufficient to anchor syntaptobrevin to the ER membrane. *J.Biol.Chem.* 271, 7583-7586. ([PDF](#))
135. Mingarro, I., Whitley, P., Lemmon, M.A., and von Heijne, G. (1996) Ala-insertion scanning mutagenesis of the glycophorin A transmembrane helix. A rapid way to map helix-helix interactions in integral membrane proteins. *Protein Sci.* 5, 1339-1341.
136. Gafvelin, G., Sakaguchi, M., Andersson, H., and von Heijne, G. (1997) Topological rules for membrane protein assembly in eukaryotic cells. *J.Biol.Chem.* 272, 6119-6127. ([PDF](#))
137. van Klompenburg, W., Nilsson, I.M., von Heijne, G., and de Kruijff, B. (1997) Anionic phospholipids are determinants of membrane protein topology. *EMBO J.*, 16, 4261-4266. ([PDF](#))
138. Sääf, A., Wallin, E., and von Heijne, G. (1998) Stop-transfer function of pseudo-random amino acid segments during translocation across prokaryotic and eukaryotic membranes. *Eur.J.Biochem.*, 251, 821-829. ([PDF](#))

139. Whitley, P., and von Heijne, G. (1997) What can glycosylation mapping tell us about membrane proteins assembly and structure? *In* Hamasaki & Mihara (Eds.): *Membrane proteins: Structure, function and expression control*. pp. 117-126.
140. von Heijne, G. (1997) Evolution of protein sorting signals. *In* Schenk, H.E.A. (Ed.): *Intertaxonic combination and symbiotic adaptation*. Tübingen, pp.191-194.
141. ³Nielsen, H., Engelbrecht, J., Brunak, S. and von Heijne, G. (1997) Identification of prokaryotic and eukaryotic signal peptides and prediction of their cleavage sites. *Prot.Engineer.*, 10, 1-6. ([PDF](#))
142. Johansson, M. and von Heijne, G. (1996) Membrane topology of Kch, a putative K⁺ channel from *E. coli*. *J.Biol.Chem.*, 271, 25912-25915. ([PDF](#))
143. Braun, P., Persson, B., Kaback, H.R. and von Heijne, G. (1997) Alanine insertion scanning mutagenesis of lactose permease transmembrane helices: Identification of a structurally and functionally important segment in helix III. *J.Biol.Chem.*, 272, 29566-29571. ([PDF](#))
144. Kiefer, H., Krieger, J., Olszewski, J.D., von Heijne, G., Prestwich, G.D. and Breer, H. (1996) Expression of an olfactory receptor in *E. coli*: Purification, reconstitution, and ligand binding. *Biochemistry*, 35, 16077-16084. ([PDF](#))
145. Glick, B.S. and von Heijne, G. (1996) *Saccharomyces cerevisiae* mitochondria lack a bacterial-type Sec machinery. *Protein Sci.*, 5, 2651-2652.
146. von Heijne, G. (1997) Principles of membrane protein assembly and structure. *Progr.Biophys.Mol.Biol.*, 66, 113-139. ([PDF](#))
147. Andersson, H., Nilsson, IM. and von Heijne, G. (1996) Calnexin can interact with N-linked glycans located close to the endoplasmic reticulum membrane. *FEBS Lett.*, 397, 321-324.
148. de Gier, J-W.L., Mansournia, P., Valent, Q.A., Phillips, G.J., Luirink, J. and von Heijne, G. (1996) Assembly of a cytoplasmic membrane proteins in *Escherichia coli* is dependent on the signal recognition particle. *FEBS Lett.*, 399, 307-309.
149. Wallin, E., Tsukihara, T., Yoshikawa, S., von Heijne, G. and Elofsson, A. (1997) Architecture of helix bundle membrane proteins: An analysis of cytochrome *c* oxidase from bovine mitochondria. *Protein Sci.*, 6, 808-815.

150. von Heijne, G. (1997) Getting greasy: How transmembrane polypeptide segments integrate into the lipid bilayer. *Mol. Microbiol.*, 24, 249-253.
151. Nielsen, H., Engelbrecht, J., Brunak, S. and von Heijne, G. (1997) A neural network method for identification of prokaryotic and eukaryotic signal peptides and prediction of their cleavage sites. *Int. J. Neural Systems* 8, 581-599. ([PDF](#))
152. Mothes, W., Heinrich, S., Graf, R., Nilsson, IM., von Heijne, G., Brunner, J. and Rapoport, T.A. (1997) Molecular mechanism of membrane protein integration into the endoplasmic reticulum. *Cell*, 89, 523-533. ([PDF](#))
153. Nilsson, IM., Sääf, A., Whitley, P., Gafvelin, G., Waller, C., and von Heijne, G. (1998) Proline-induced disruption of a transmembrane α -helix in its natural environment. *J. Mol. Biol.*, 284, 1165-1175. ([PDF](#))
154. Claros, M., Brunak, S., and von Heijne G. (1997) Prediction of N-terminal sorting signals. *Curr. Opin. Struct. Biol.* 7, 394-398.
155. Cserzö, M., Wallin, E., Simon, I., von Heijne, G., and Elofsson, A. (1997) Prediction of transmembrane α -helices in prokaryotic membrane proteins: The Dense Alignment Surface method. *Protein Engineer.* 10, 673-676.
156. de Gier, J-W., Valent, Q.A., von Heijne, G., and Lührink, J. (1997) The *E. coli* SRP: preferences of a targeting factor. *FEBS Lett.* 408, 1-4.
157. Valent, Q.A., de Gier, J-W., von Heijne, G., Kendall, D.A., ten Hagen-Jongman, C.M., Oudega, B., and Lührink, J. (1997) Nascent membrane and presecretory proteins associate with signal recognition particle and trigger factor. *Mol. Microbiol.* 25, 53-64.
158. Mingarro, I., de Gier, J-W., von Heijne, G., Braun, P., and Whitley, P. (1998) Membrane Protein Assembly. *In* Chapman, D. and Harris, P.I. (Eds.): *Biomembrane Structures*. IOS Press, Amsterdam, pp. 228-244.
159. Mingarro, I., Elofsson, A., and von Heijne, G. (1997) Helix-helix packing in a membrane-like environment. *J. Mol. Biol.*, 272, 633-641. ([PDF](#))
160. Schneider, G., Sjöling, S., Wallin, E., Wrede, P., Glaser, E., and von Heijne, G. (1998) Feature-extraction from endopeptidase cleavage sites in mitochondrial targeting peptides. *PROTEINS: Struct. Funct. Genet.*, 30, 49-60. ([PDF](#))

161. Mingarro, I., von Heijne, G., and Whitley, P. (1997) Membrane protein engineering. *TIBTECH* 15, 432-437.
162. van Klompenburg, W., Ridder, A.N.J.A., van Raalte, A.L.J., Killian, A.J., von Heijne, G., and de Kruijff, B. (1997) *In vitro* membrane integration of leader peptidase depends on the Sec machinery and anionic phospholipids and can occur post-translationally. *FEBS Lett.* 413, 109-114.
163. Wallin, E., and von Heijne, G. (1998) Genome-wide analysis of integral membrane proteins from eubacterial, archaean, and eukaryotic organisms. *Protein Sci.* 7, 1029-1038. ([HTML](#))
164. Valent, Q.A., Scotti, P.A., High, S., de Gier, J.W.L., von Heijne, G., Lentzen, G., Wintermeyer, Oudega, B., and Lührink, J. (1998) The *E. coli* SRP and Sec targeting pathways converge at the translocon. *EMBO J.* 17, 2504-2512. ([PDF](#))
165. Sonnhammer, E.L.L., von Heijne, G., and Krogh, A. (1998) A hidden Markov model for predicting transmembrane helices in protein sequences. *Intell. Syst. Mol. Biol.* 6, 175-182. ([PDF](#))
166. Seshadri, K., Wallin, E., Garemyr, R., von Heijne, G., and Elofsson, A. (1998) Architecture of β -barrel membrane proteins: Structural analysis of trimeric porins. *Protein Sci.* 7, 2026-2032. ([HTML](#))
167. van Klompenburg, W., Paetzel, M., de Jong, J.M., Dalbey, R.E., Demel, R.A., von Heijne, G., and de Kruijff, B. (1998) Phosphatidylethanolamine mediates insertion of the catalytic domain of leader peptidase in membranes. *FEBS Lett.* 431, 75-79. ([PDF](#))
168. Ota, K., Sakaguchi, M., von Heijne, G., Hamasaki, N., and Mihara, K. (1998) Forced transmembrane orientation of hydrophilic polypeptide segments in multispinning membrane proteins. *Molecular Cell* 2, 495-503. ([PDF](#))
169. de Gier, J.W., Scotti, P.A., Sääf, A., Valent, Q.A., Kuhn, A., Lührink, J., and von Heijne, G. (1998) Differential use of the SRP-translocase targeting pathway for inner membrane protein assembly in *Escherichia coli*. *Proc.Natl.Acad.Sci. USA*, 95, 14646-14651. ([PDF](#))
170. Monné, M., Nilsson, IM., Johansson, M., Elmhed, N., and von Heijne, G. (1998) Positively and negatively charged residues have different effects on the

- position in the membrane of a model transmembrane helix. *J.Mol.Biol.*, 284, 1177-1183. ([PDF](#))
171. Nilsson, IM., and von Heijne, G. (1998) Breaking the camel's back: Proline-induced turns in a model transmembrane helix. *J.Mol.Biol.*, 284, 1185-1189. ([PDF](#))
 172. Sääf, A., Monné, M., de Gier, JW., and von Heijne, G. (1998) Membrane topology of the 60 kDa Oxa1p homologue from *Escherichia coli*. *J.Biol.Chem.* 273, 30415-30418. ([PDF](#))
 173. von Heijne, G. (1998) News & Views: The life and death of a signal peptide. *Nature* 396, 111-112. ([PDF](#))
 174. van Geest, M., Nilsson, IM., von Heijne, G., and Lolkema, J.S. (1999) Insertion of a bacterial secondary transport protein into the ER membrane. *J.Biol.Chem.* 274, 2816-2823. ([PDF](#))
 175. Nielsen, H., Brunak, S., and von Heijne, G. (1999) Machine learning approaches to the prediction of signal peptides and other protein sorting signals. *Prot.Engineer.* 12, 3-9. ([PDF](#))
 176. ⁴Emanuelsson, O., Nielsen, H., and von Heijne, G. (1999) ChloroP, a neural network-based method for predicting chloroplast transit peptides and their cleavage sites. *Protein Sci.* 8, 978-984. ([PDF](#))
 177. Monné, M., Hermansson, M., and von Heijne, G. (1999) A turn propensity scale for transmembrane helices. *J.Mol.Biol.* 288, 141-145. ([PDF](#))
 178. Monné, M., Gafvelin, G., Nilsson, R., and von Heijne, G. (1999) N-tail translocation in a eukaryotic polytopic membrane protein: Synergy between neighboring transmembrane segments. *Eur.J.Biochem.* 263, 264-269. ([PDF](#))
 179. Cristóbal, S., de Gier, J-W., Nielsen, H., and von Heijne, G. (1999) Competition between Sec and TAT dependent protein translocation in *Escherichia coli*. *EMBO J.* 18, 2982-2990. ([PDF](#))
 180. Sääf, A., Johansson, M., Wallin, E., and von Heijne, G. (1999) Divergent evolution of membrane protein topology: The *Escherichia coli* RnfA and RnfE homologues. *Proc.Natl.Acad.Sci. USA* 96, 8540-8544. ([PDF](#))

⁴ Second most cited European paper in plant science during 1999-2005. LabTimes, issue 1 2007.

181. Cristóbal, S., Scotti, P., Luirink, J., von Heijne, G., and de Gier, J-W. (1999) The SRP-targeting pathway does not necessarily deliver proteins to the Sec-translocase in *Escherichia coli*. J. Biol. Chem. 274, 20068-20070. ([PDF](#))
182. Braun, P., and von Heijne, G. (1999) The aromatic residues Trp and Phe have different effects on the positioning of a transmembrane helix in the microsomal membrane. Biochemistry 38, 9778-9782. ([PDF](#))
183. Devoto, A., Piffanelli, P., Nilsson, IM., Wallin, E., Panstruga, R., von Heijne, G., and Schulze-Lefert, P. (1999) Topology, subcellular localization and sequence diversity of the Mlo family in plants. J. Biol. Chem. 274, 34993-35004. ([PDF](#))
184. Monné, M., Nilsson, IM., Eloffson, A., and von Heijne, G. (1999) Turns in transmembrane helices: Determination of the minimal length of a "helical hairpin" and derivation of a fine-grained turn propensity scale. J. Mol. Biol. 293, 807-814. ([PDF](#))
185. von Heijne, G. (1999) A day in the life of Dr K. or How I learned to stop worrying and love lysozyme. A tragedy in six acts. J.Mol.Biol. 293, 367-379. ([PDF](#))
186. Armulik, A., Nilsson, IM., von Heijne, G., and Johansson, S. (1999) Determination of the border between transmembrane and cytoplasmic domains of human integrin subunits. J.Biol.Chem. 274, 37030-37034 ([PDF](#))
187. Nilsson, IM., Witt, S., Kiefer, H., Mingarro, I., and von Heijne, G. (2000) Distant downstream sequence determinants can control N-tail translocation during protein insertion into the ER membrane. J.Biol.Chem. 275, 6207-6213. ([PDF](#))
188. Scotti, P.A., Urbanus, M.L., Brunner, J., de Gier, J-W., von Heijne, G., van der Does, C., Driessen, A.J.M., Oudega, B., and Luirink, J. (2000) YidC, the *E. coli* homologue of mitochondrial Oxa1p, is a component of the Sec translocase. EMBO J. 19, 542-549. ([PDF](#))
189. von Heijne, G. (2000) Recent advances in the understanding of membrane protein assembly and structure. Quart.Rev.Biophys. 32, 285-307.
190. Nilsson, IM, and von Heijne, G. (2000) Glycosylation efficiency of Asn-X-Thr sequons depends both on the distance from the C-terminus and on the presence of a downstream transmembrane segment. J.Biol.Chem. 275, 17338-17343. ([PDF](#))

191. ⁵Emanuelsson, O., Nielsen, H., Brunak, S., and von Heijne, G. (2000) Predicting subcellular localization of proteins based on their N-terminal amino acid sequence. *J.Mol.Biol.* 300, 1005-1016. ([PDF](#))
192. Sääf, A., Hermansson, M., and von Heijne, G. (2000) Formation of cytoplasmic turns between two closely spaced transmembrane helices during membrane protein integration into the ER membrane. *J.Mol.Biol.* 301, 191-197. ([PDF](#))
193. Killian, J.A., and von Heijne, G. (2000) How proteins adapt to a membrane-water interface. *TIBS* 25, 429-434. ([PDF](#))
194. Hasler, U., Greasley, P.J., von Heijne, G., and Geering, K. (2000) Determinants of topogenesis and glycosylation of type II membrane proteins: Analysis of Na,K-ATPase β_1 and β_3 subunits by glycosylation mapping. *J.Biol.Chem.* 275, 29011-29022. ([PDF](#))
195. Chin, C-N., and von Heijne, G. (2000) Charge pair interactions in a model transmembrane helix in the ER membrane. *J. Mol. Biol.* 303, 1-5. ([PDF](#))
196. von Heijne, G. (2000) Membrane permeability: Transport of peptides and proteins through membranes (Editorial overview). *Curr.Op.Cell Biol.* 12, 399. ([PDF](#))
197. ⁶Krogh, A., Larsson, B., von Heijne, G., and Sonnhammer, E.L.L. (2001) Predicting transmembrane protein topology with a hidden Markov model: Application to complete genomes. *J.Mol.Biol.* 305, 567-580. ([PDF](#))
198. Nilsson, J., Persson, B., and von Heijne, G. (2000) Consensus prediction of membrane protein topology. *FEBS Lett.*, 486, 267-269. ([PDF](#))
199. Mingarro, I., Nilsson, IM, Whitley, P., and von Heijne, G. (2000) Different conformations of nascent polypeptides during translocation across the ER membrane. *BioMed Central Cell Biology* 1, 3. ([PDF](#))
200. Sääf, A., Baars, L., and von Heijne, G. (2001) The internal repeats in the Na⁺/Ca²⁺ exchanger-related *E. coli* protein YrbG have opposite membrane topologies. *J.Biol.Chem.* 276, 18905-18907. ([PDF](#))

⁵ Among the 100 most cited articles in JMB during the journal's first 50 years.

⁶ Among the 100 most cited articles in JMB during the journal's first 50 years.

201. Monné, M., and von Heijne, G. (2001) Effects of 'hydrophobic mismatch' on the location of transmembrane helices in the ER membrane. FEBS Lett. 496, 96-100. ([PDF](#))
202. von Heijne, G. (2001) Signal peptides. *In* Encyclopedia of the Human Genome. MacMillan Press.
203. Emanuelsson, O., von Heijne, G., and Schneider, G (2001) Analysis and prediction of mitochondrial targeting peptides. Methods in Cell Biol. 65, 175-187.
204. Nilsson, IM., Ohvo-Rekilä, H., Slotte, J.P., Johnson, A.E., and von Heijne, G. (2001) Inhibition of protein translocation across the ER membrane by sterols. J.BiolChem. 276, 41748-41754.
205. Hermansson, M., Monné, M., and von Heijne, G. (2001) Formation of 'helical hairpins' during membrane protein assembly into the endoplasmic reticulum membrane. Role of the N- and C-terminal flanking regions. J.Mol.Biol. 313, 1171-1179.
206. Drew, D.E., von Heijne, G., Nordlund, P., and de Gier, J-W.,L (2001) Green Fluorescent Protein as an indicator to monitor membrane protein overexpression in *Escherichia coli*. FEBS Lett. 207, 220-224.
207. Peltier, J-B., Emanuelsson, O., Kalume, D.E., Ytterberg, J., Friso, G., Rudella, A., Liberles, D.A., Söderberg, L., Roepstorff, P., von Heijne, G., and van Wijk, K.J. (2002) Central functions of the luminal and peripheral thylakoid proteome of *Arabidopsis thaliana* determined by experimentation and genome-wide prediction. Plant Cell 14, 211-236.
208. Liberles, D.A., Thoren, A., von Heijne G., and Elofsson, A. (2002) The use of phylogenetic profiles for gene predictions. Curr.Genomics 3, 131-137.
209. Drew, D., Sjöstrand, D., Nilsson, J., Urbig, T., Chin, C., de Gier, J-W., and von Heijne, G. (2002) Rapid topology mapping of *E. coli* inner membrane proteins by prediction and PhoA/GFP fusion analysis. Proc.Natl.Acad.Sci.USA 99, 2690-2695.
210. von Heijne, G. (2003) Membrane protein assembly *in vivo*. Adv.Prot.Chem. 63, 1-18.

211. Emanuelsson, O., and von Heijne, G. (2001) Prediction of organellar targeting signals. *Biochem.Biophys. Acta* 1541, 114-119.
212. Hedman, M., de Loof, H., von Heijne, G., and Elofsson, A. (2002) Improved detection of homologous membrane proteins by inclusion of information from topology predictions. *Prot. Sci.* 11, 652.
213. Nilsson, IM., Johnson, A.E., and von Heijne, G. (2002) Cleavage of a tail-anchored protein by signal peptidase. *FEBS Lett.* 516. 106-108.
214. Chin, C., von Heijne, G., and de Gier, J-W. (2002) Membrane proteins: Shaping up. *TIBS* 27, 231-234.
215. Vilar, M., Saurí, A., Monné, M., Marcos, J.F., von Heijne, G., Pérez-Payá, E., and Mingarro, I. (2002) Insertion and topology of a plant viral movement protein in the endoplasmic reticulum membrane. *J.Biol.Chem.* 277, 23447-23452.
216. von Heijne, G. (2002) Bioinformatics of Membrane Proteins. In Mewes, Seidel & Weiss (Eds.) "Bioinformatics and Genome Analysis", Springer Verlag, pp. 17-27.
217. Nilsson, J., Persson, B., and von Heijne, G. (2002) Prediction of partial membrane protein topologies using a consensus approach. *Prot.Sci.* 11, 2974-2980.
218. Hessa, T., Monné, M., and von Heijne, G. (2003) Stop-transfer efficiency of marginally hydrophobic segments depends on the length of the C-terminal tail. *EMBO Rep.* 4, 178-183.
219. Kim, H., Melén, K., and von Heijne, G. (2003) Topology models for 37 *Saccharomyces cerevisiae* membrane proteins based on C-terminal reporter fusions and prediction. *J.Biol.Chem.* 278, 10208-10213.
220. Melén, K., Krogh, A., and von Heijne, G. (2003) Reliability measures for membrane protein topology prediction algorithms. *J.Mol.Biol.* 327, 735-744.
221. Lundin, M., Monné, M., Widell, A., von Heijne, G., and Persson, M.A.A. (2003) Topology of the membrane associated Hepatitis C virus NS4B protein. *J.Virol.* 77, 5428-5438.

222. Nilsson, IM., Kelleher, D.J., Miao, Y., Shao, Y., Kreibich, G., Gilmore, R., von Heijne, G., and Johnson, A.E. (2003) Photocrosslinking of nascent chains to the STT3 subunit of the oligosaccharyltransferase complex. *J. Cell Biol.* 161, 715-725.
223. Emanuelsson, O., Elofsson, A., von Heijne, G., and Cristobal, S. (2003) *In silico* prediction of the peroxisomal proteome in fungi, plants and animals. *J.Mol.Biol.* 330, 443-456.
224. Andersson, H., D'Antona, A.M., Kendall, D.A., von Heijne, G., and Chin, C-N. (2003). Membrane assembly of the cannabinoid receptor 1: Impact of a long N-terminal tail. *Mol.Pharmacol.* 64, 570-577.
225. Kim, H., von Heijne, G., Caputo, G.A., and Lennarz, W.J. (2003) Determination of membrane topology of Ost4p, and its subunit interactions in the oligosaccharyltransferase complex in *Saccharomyces cerevisiae*. *Proc.Natl.Acad.Sci. USA* 100, 7460-7464.
226. Nilsson, IM., Johnson, A., and von Heijne, G. (2003) How hydrophobic is alanine? *J.Biol.Chem.* 278, 29389-29393.
227. Juncker, A.S., Wilenbrock, H., von Heijne, G., Brunak, S., Nielsen, H., and Krogh, A. (2003) Prediction of lipoprotein signal peptides in Gram-negative bacteria. *Prot.Sci.* 12, 1652-1662.
228. Westerlund, I., von Heijne, G., and Emanuelsson, O. (2003) LumenP - a neural network predictor for protein localization in the thylakoid lumen. *Prot.Sci.* 12, 2360-2366.
229. Hermansson, M., and von Heijne, G. (2003) Inter-helical hydrogen bond formation during membrane protein integration into the ER membrane. *J.Mol.Biol.* 334, 803-809.
230. Rapp, M., Drew, D., Daley, D.O., Nilsson, J., Carvalho, T., Melén, K., de Gier, J.W., and von Heijne, G. (2004) Experimentally based topology models for *E. coli* inner membrane proteins. *Prot.Sci.* 13, 937-945.
231. Stefansson, A., Armulik, A., Nilsson, IM., von Heijne, G., and Johansson, S. (2004) Determination of N- and C-terminal borders of the transmembrane domain of integrin subunits. *J.Biol.Chem.* 279, 21200-21205.

232. ⁷Dyrløv-Bendtsen, J., Nielsen, H., von Heijne, G., and Brunak, S. (2004) Improved prediction of signal peptides – SignalP 3.0. *J.Mol.Biol.* 340, 783-795.
233. Kerje, S., Sharma, P., Gunnarsson, U., Kim, H., Bagchi, S., Fredriksson, R., Schütz, K., Jensen, P., von Heijne, G., Okimoto, R., and Andersson, L., (2004) The *Dominant white, Dun* and *Smoky* color variants in chicken are associated with insertion/deletion polymorphisms in the *PMEL17* gene. *Genetics* 168, 1507-1518.
234. Monné, M., Hessa, T., Thissen, L., and von Heijne, G. (2005) Competition between neighboring topogenic signals during membrane protein insertion into the ER. *FEBS J.* 272, 28-36.
235. White, S.H., and von Heijne, G. (2004) The machinery of membrane protein assembly. *Curr.Opinion Struct.Biol.* 14, 397-404.
236. Granseth, G., von Heijne, G., and Elofsson, A. (2005) A Study of the membrane-water interface region of membrane proteins. *J.Mol.Biol.* 346, 377-385.
237. Dyrløv-Bendtsen, J., Juhl Jensen, L., Blom, N., von Heijne, G., and Brunak, S. (2004) Feature-based prediction of non-classical and leaderless protein secretion. *Prot.Eng.Des.Sel.* 17, 349-356.
238. ⁸Hessa, T., Kim., H., Bihlmaier, K., Lundin, C., Boekel, J., Andersson, H., Nilsson, I.M., White, S.H., and von Heijne, G. (2005) Recognition of transmembrane helices by the endoplasmic reticulum translocon. *Nature* 433, 377-381.
239. Hessa, T., White, S.H., and von Heijne, G. (2005) Membrane insertion of a potassium channel voltage sensor. *Science* 307, 1427.
240. Ding, B., Kull, B., Liu, Z., Mottagui-Tabara, S., Thonberg, H., Gu, H.F., Brookes, A.J., Grundemar, L., Karlsson, C., Hamsten, A., Arner, P., Östensson, C.G., Efendic, S., Monné, M., von Heijne, G., Eriksson, P., and Wahlestedt, C. (2005) Human neuropeptide Y signal peptide gain-of-function polymorphism associated with increased body mass index: possible mode of function. *Regul.Pept.*127, 45-53.

⁷ Red Hot Science Papers, Science watch Nov/Dec 2005. Among the 100 most cited articles in *JMB* during the journal's first 50 years.

⁸ "Hot Paper", *The Scientist* May 2007

241. Tie, J-L., Nicchitta, C., von Heijne, G., and Stafford, D.W. (2005) Membrane topology mapping of vitamin K epoxide reductase by *in vitro* translation/cotranslocation. *J.Biol.Chem.* 280, 16410-16416.
242. Daley, D.O., Rapp, M., Granseth, E., Melén, K., Drew, D., and von Heijne, G. (2005) Global topology analysis of the *Escherichia coli* inner membrane proteome. *Science* 308, 1321-1323.
243. Nilsson, J., Persson, B., and von Heijne, G. (2005) Comparative analysis of amino acid distributions in integral membrane proteins from 107 genomes. *PROTEINS: Structure, Function, and Bioinformatics* 60, 606-616.
244. Kim, H., von Heijne, G., and Nilsson, I.M. (2005) Membrane topology of the STT3 subunit of the oligosaccharyl transferase complex. *J.Biol.Chem.* 280, 20261-20267.
245. Bernsel, A., and von Heijne, G. (2005) Improved membrane protein topology prediction by domain assignments. *Prot.Sci.* 14, 1723-1728.
246. Médigue, C., Krin, E., Pascal, G., Barbe, V., Bernsel, A., Bertin, P.N., Cheung, F., Cruveiller, S., D'Amico, S., Duilio, A., Fang, G., Feller, G., Ho, C., Mangenot, S., Marino, G., Nilsson, J., Parilli, E., Rocha, E.P.C., Rouy, Z., Sekowska, A., Tutino, M.L., Vallenet, D., von Heijne, G., and Danchin, A. (2005) Coping with cold: the genome of the versatile marine Antarctica bacterium *Pseudoalteromonas haloplanktis* TAC125. *Genome Res.* 15, 1325-1335.
247. Pasche, B., Knobloch, T.J., Bian, Y., Liu, J., Phukan, S., Rosman, D., Kaklamani, V., Baddi, L., Frankel, W., Prior, T.W., Schuller, D.E., Agrawal, A., Lang, J., Dolan, M.E., Vokes, E.E., Lane, W.S., Huang, C.C., Caldes, T., Di Cristofano, A., Hampel, H., Nilsson, I.M., von Heijne, G., Fodde, R., Murty, V.V.V.S., de la Chapelle, A., Weghorst, C.M. (2005) Somatic Acquisition and Signaling of *TGFBR1*6A* in Cancer. *J.Am.Med.Assoc.* 294, 1634-1646.
248. Granseth, E., Daley, D.O., Rapp, M., Melén, K., and von Heijne, G. (2005) Experimentally constrained topology models for 51,208 bacterial inner membrane proteins. *J.Mol.Biol.* 352, 489-494.
249. White, S., and von Heijne, G. (2005) Does protein-lipid interactions determine the recognition of transmembrane helices at the ER translocon? *Biochem.Soc.Trans.* 33, 1012-1015.

250. von Heijne, G. (2005) Perspective: Translocation of anthrax toxin - Lord of the Rings. *Science* 309, 709.
251. Laudon, H., Hansson, E.M., Melén, K., Bergman, A., Farmery, M.R., Winblad, B., Lendahl, U., von Heijne, G. and Näslund, J. (2005) A nine transmembrane domain topology for presenilin 1. *J.Biol.Chem.* 280, 35352-35360.
252. Stenberg, F., Chovanec, P., Maslen, S.L., Robinson, C.V., Ilag, L., von Heijne, G., and Daley, D.O. (2005) Protein complexes of the *Escherichia coli* cell envelope. *J.Biol.Chem.* 280, 34409-34419.
253. White, S.H., Hessa, T., and von Heijne, G. (2005) Lipid bilayers, translocons and the shaping of polypeptide structure. In Tamm, K. (ed.) "Protein-lipid interactions: From membrane domains to cellular networks", Wiley-VCH.
254. Freitas, J.A., Tobias, D.J., von Heijne, G., and White, S.H. (2005) Interface connections of a transmembrane voltage sensor. *Proc.Natl.Acad.Sci. USA* 102, 15059-15064.
255. Luirink, J., von Heijne, G., Houben, E., and de Gier, J-W. (2005) Biogenesis of inner membrane proteins in *Escherichia coli*. *Annu.Rev.Microbiol.* 59, 329-355.
256. von Heijne, G. (2005) News and views: Helices on the move. *Nature Struct.Molec.Biol.* 12, 834-835.
257. Villarejo, A., Burén, S., Larsson, S., Déjardin, A., Monné, M., Rudhe, C., Karlsson, J., Jansson, S., Lerouge, P., Rolland, N., von Heijne, G., Grebe, M., Bako, L., and Samuelsson, G. (2005) A route through the endoplasmic reticulum for proteins targeted to the higher plant chloroplast. *Nature Cell Biol.* 7, 1224-1231.
258. Karamyshev, A.L., Kelleher, D.J., Gilmore, R., Johnson, A.E., von Heijne, G., and Nilsson, I-M. (2005) Mapping the interaction of the STT3 subunit of the oligosaccharyl transferase complex with nascent polypeptide chains. *J.Biol.Chem.* 280, 40489-40493.
259. Marani, P., Wagner, S., Baars, L., Genevoux, P., de Gier, J-W., Nilsson, I.M., Casadio, R., and von Heijne, G. (2006) New *Escherichia coli* outer membrane proteins identified through prediction and experimental verification. *Prot.Sci.* 15, 884-889.

260. Rapp, M., Seppälä, S., Granseth, E., and von Heijne, G. (2006) Identification and evolution of dual topology membrane proteins. *Nature Struct.Mol.Biol.* 13, 112-116.
261. Lundin, C., Nordström, R., Wagner, K., Windpassinger, C., Andersson, H., von Heijne, G., and Nilsson, IM. (2006) Membrane topology of the human seipin protein. *FEBS Lett.* 280, 2281-2284.
262. Amico, M., Finelli, M., Rossi, I., Zauli, A., Elofsson, A., Viklund, H., von Heijne, G., Jones, D., Krogh, A., Fariselli, P., Martelli, P.L., and Casadio, R. (2006) PONGO: A web server for multiple predictions of all-alpha transmembrane proteins. *Nucl.Acids.Res.* 34, W169-W172.
263. Kim, H., Melén, K., Österberg, M., and von Heijne, G. (2006) A global topology map of the *Saccharomyces cerevisiae* membrane proteome. *Proc.Natl.Acad.Sci. USA* 103, 11142-11147.
264. Österberg, M., Kim, H., Warringer, J., Melén, K., Blomberg, A., and von Heijne, G. (2006) Phenotypic effects of membrane protein overexpression in *Saccharomyces cerevisiae*. *Proc.Natl.Acad.Sci. USA* 103, 11148-11153.
265. Meindl-Beinker, N.M., Lundin, C., Nilsson, IM., White, S.H., and von Heijne, G. (2006) Asn- and Asp-mediated interactions between transmembrane helices during translocon-mediated membrane protein assembly. *EMBO Rep.* 7, 1111-1116.
266. von Heijne, G (2006) Membrane-protein topology. *Nature Rev.Mol.Cell.Biol.* 7, 909-918.
267. Rapp, M., Seppälä, S., Granseth, E., and von Heijne, G. (2007) Emulating membrane protein evolution by rational design. *Science* 315, 1282-1284.
268. Elofsson, A., and von Heijne, G. (2007) Membrane protein structure: Prediction vs. reality. *Annu.Rev.Biochem.* 76, 125-140.
269. von Heijne, G. (2007) The membrane-protein universe - what's out there and why bother? *J.Int.Med.* 261, 543-557.
270. Emanuelsson, O., Brunak, S., von Heijne, G., and Nielsen, H. (2007) Locating proteins in the cell using TargetP, SignalP, and related tools. *Nature Protocols* 2, 953-971.

271. von Heijne, G. (2007) Formation of transmembrane helices *in vivo* – is hydrophobicity all that matters? *J.Gen.Physiol.* 129, 353-356.
272. Zhang, L., Sato, Y., Hessa, T., von Heijne, G., Lee, J-K., Kodama, K., Sakaguchi, M., and Uozumi, N. (2007) Contribution of hydrophobic and electrostatic interactions to the membrane integration of the Shaker K⁺ channel voltage sensor domain. *Proc.Natl.Acad.Sci. USA* 104, 8263-8268.
273. Granseth, E., Seppälä, S., Rapp, M., Daley, D.O., and von Heijne, G. (2007) Membrane protein structural biology – How far can the bugs take us?. *Mol.Membr.Biol.* 24, 329-332.
274. Stenberg, F., von Heijne, G., and Daley, D.O. (2007) Assembly of the cytochrome *b₀₃*. *J.Mol.Biol.* 371, 765-773.
275. von Heijne, G. (2007) Membrane proteins up for grabs. *Nature Biotech.* 25, 646.
276. Lundin, C., Johansson, S., Johnson, A.E., Näslund, J., von Heijne, G., and Nilsson, IM. (2007) Stable insertion of Alzheimer A β peptide into the ER membrane strongly correlates with its length. *FEBS Lett.* 581, 3809-3813.
277. Newstead, S., Kim, H., von Heijne, G., Iwata, S., and Drew, D. (2007) High-throughput fluorescent-based optimization of eukaryotic membrane protein overexpression and purification in *Saccharomyces cerevisiae*. *Proc.Natl.Acad.Sci. USA* 104, 13936-13941.
278. Hessa, T., Meindl-Beinker, N.M., Bernsel, A., Kim, H., Sato, Y., Lerch-Bader, M., Nilsson, IM., White, S.H., and von Heijne, G. (2007) Molecular code for transmembrane-helix recognition by the Sec61 translocon. *Nature* 450, 1026-1030.
279. White, S.H., and von Heijne, G. (2008) How translocons select transmembrane helices. *Ann.Rev.Biophys.Biomolec.Struct.* 37, 23-42
280. Xie, K., Hessa, T., Seppälä, S., Rapp, M., von Heijne, G., and Dalbey, R. (2007) features of transmembrane segments that promote the lateral release from the translocase into the lipid phase. *Biochemistry* 46, 15153-15161.

281. Lundin, C., Käll, L., Kreher, S.A., Kapp, K., Sonnhammer, E.L., Carlson, J.R., von Heijne, G., and Nilsson, IM. (2007) Membrane topology of the *Drosophila* OR83b odorant receptor. FEBS Lett. 581, 5601-5604.
282. Lerch-Bader, M., Lundin, C., Kim, H., Nilsson, IM., and von Heijne, G. (2008) Contribution of positively charged flanking residues to the insertion of transmembrane helices into the endoplasmic reticulum. Proc.Natl.Acad.Sci. USA 105, 4127-4132.
283. Drew, D., Newstead, S., Sonoda, Y., Kim, H., von Heijne, G., and Iwata, S. (2008) GFP-based optimization scheme for the overexpression and purification of eukaryotic membrane proteins in *Saccharomyces cerevisiae*. Nature Protocols 5, 784-798.
284. Bernsel, A., Viklund, H., Falk, J., Lindahl, E., von Heijne, G., and Elofsson, A. (2008) Prediction of membrane-protein topology from first principles. Proc.Natl.Acad.Sci. USA 105, 7177-7181.
285. Cassel, M., Seppälä, S., and von Heijne, G. (2008) Confronting fusion-protein based membrane protein topology mapping with reality: the *Escherichia coli* ClcA H⁺/Cl⁻ exchange transporter. J.Mol.Biol. 381, 860-866.
286. von Heijne, G., and Rees, D. (2008) Membranes: reading between the lines. Curr.Op.Struct.Biol. 18, 403-405.
287. Lundin, C., Kim, H., Nilsson, IM., White, S.H., and von Heijne, G. (2008) The molecular code for protein insertion in the ER membrane is similar for N_{in}-C_{out} and N_{out}-C_{in} transmembrane helices. Proc.Natl.Acad.Sci. USA 105, 15702-15707.
288. Hessa, T., Reithinger, J.H., von Heijne, G., and Kim, H. (2009) Quantitative analysis of transmembrane helix integration in the endoplasmic reticulum in *S. cerevisiae*. J.Mol.Biol. 386, 1222-1228.

289. Juncker, A.S., Jensen, L.J., Pierleoni, A., Bernsel, A., Tress, M.L., Bork, P., von Heijne, G., Valencia, A., Ouzounis, C.A., Casadio, R., and Brunak, S. (2009) Sequence-based feature prediction and annotation of proteins. *Genome Biol.* 10, 206.
290. Enquist, K., Fransson, M., Boekel, C., Bengtsson, I., Geiger, K., Lang, L., Pettersson, A., Johansson, S., von Heijne, G., and Nilsson, I.M. (2009) Membrane-integration characteristics of two ABC transporters, CFTR and P-glycoprotein. *J.Mol.Biol.* 387, 1153-1164.
291. Jaud, S., Fernández-Vidal, M., Nilsson, I.M., Meindl-Beinker, N.M., Hübner, N., Tobias, D.J., von Heijne, G., and White, S.H. (2009) Insertion of short transmembrane helices by the Sec61 translocon. *Proc.Natl.Acad.Sci. USA* 106, 11588-11593.
292. Fagerberg, L., Jonasson, K., von Heijne, G., Uhlén, M., and Berglund, L. (2010) Prediction of the human membrane proteome. *Proteomics*, in press.
293. Sakata, S., Kurokawa, T., Nørholm, M.H.H., Takagi, M., Okochi, Y., von Heijne, G., and Okamura, Y. (2010) Activities of the voltage-gated proton channel truncated in S4. *Proc.Natl.Acad.Sci. USA*, in press.
294. Hedin, L., Öjemalm, K., Bernsel, A., Hennerdal, A., Illergård, K., Karl Enquist, K., Kauko, A., Cristobal, S., von Heijne, G., Lerch-Bader, M., Nilsson, IM., and Elofsson, A. (2010) Membrane insertion of marginally hydrophobic transmembrane helices depends on sequence context. *J.Mol.Biol.* 396, 221-229.
295. ⁹Daniels, R., Mellroth, P., Bernsel, A., Neiers, F., Normark, S., von Heijne, G., and Henriques-Normark, B. (2010) Gram-positive bacteria cope with oxidative pressure by two distinct strategies. *J.Biol.Chem.* 285, 3300-3309.

⁹ JBC "Paper of the Week"

296. Langel, Ü., Cravatt, B.F., Gräslund, A., von Heijne, G., Niessen, S., and Zorko, M. (2009) Introduction to peptides and proteins. CRC Press, Boca Raton.
297. Kauko, A., Hedin, L., Thebaud, E., Cristobal, S., Elofsson, A., and von Heijne, G. (2010) Repositioning of transmembrane α -helices during membrane protein folding. *J.Mol.Biol.* 397, 190-201.
298. Strömqvist, J., Skoog, K., Daley, D., Widengren, J., and von Heijne, G. (2010) Estimating Z-ring radius and contraction in dividing *Escherichia coli*. *Mol.Microbiol.*, in press.