8. Literaturverzeichnis

Abraham, D. J. and Leo, A. J. (1987) Extension of the fragment method to calculate amino acid zwitterions and side chain partition coefficients. *Proteins,* 2(2), 130-152

Ada, G. L. und Jones, P. D. (1986) The immune response to influenza infection. *Curr. Top. Microbiol. Immunol.,* 1281 - 54.

Alaluf, S.; Mulvihill, E. R. und McIlhinney, R. A. (1995) Palmitoylation of metabotropic glutamate receptor subtype 4 but not 1 alpha expressed in permanently transfected BHK cells. *Biochem. Soc. Trans.,* 23(1), 87S

Alexander, M.; Bor, Y. C.; Ravichandran, K. S.; Hammarskjold, M. L. und Rekosh, D. (2004) Human immunodeficiency virus type 1 Nef associates with lipid rafts to downmodulate cell surface CD4 and class I major histocompatibility complex expression and to increase viral infectivity. *J. Virol.,* 78(4), 1685 - 1696.

Ali, A.; Avalos, R. T.; Ponimaskin, E. und Nayak, D. P. (2000) Influenza virus assembly: effect of influenza virus glycoproteins on the membrane association of M1 protein. *J. Virol.,* 74(18), 8709 - 8719.

Alland, L.; Peseckis, S. M.; Atherton, R. E.; Berthiaume, L. und Resh, M. D. (1994) Dual myristylation and palmitylation of Src family member p59fyn affects subcellular localization. *J. Biol. Chem.,* 269(24), 16701 - 16705.

Anderson, S. J.; Lenburg, M.; Landau, N. R. und Garcia, J. V. (1994) The cytoplasmic domain of CD4 is sufficient for its down-regulation from the cell surface by human immunodeficiency virus type 1 Nef. *J. Virol.,* 68(5), 3092 - 3101.

Arcaro, A.; Gregoire, C.; Boucheron, N.; Stotz, S.; Palmer, E.; Malissen, B. und Luescher, I. F. (2000) Essential role of CD8 palmitoylation in CD8 coreceptor function. *J. Immunol.,* 165(4), 2068 - 2076.

Arcaro, A.; Gregoire, C.; Bakker, T. R.; Baldi, L.; Jordan, M.; Goffin, L.; Boucheron, N.; Wurm, F.; van der Merwe, P. A.; Malissen, B. und Luescher, I. F. (2001) CD8beta endows CD8 with efficient coreceptor function by coupling T cell receptor/CD3 to raft-associated CD8/p56(lck) complexes. *J. Exp. Med.,* 194(10), 1485 - 1495.

Armstrong, R. T.; Kushnir, A. S. und White, J. M. (2000) The transmembrane domain of influenza hemagglutinin exhibits a stringent length requirement to support the hemifusion to fusion transition. *J. Cell Biol.,* 151(2), 425 - 437.

Aurora, R.; Srinivasan, R. und Rose, G. D. (1994) Rules for alpha-helix termination by glycine. *Science,* 264(5162), 1126 - 1130.

Bagai, S.; Puri, A.; Blumenthal, R. und Sarkar, D. P. (1993) Hemagglutinin-neuraminidase enhances F protein-mediated membrane fusion of reconstituted Sendai virus envelopes with cells. *J. Virol.,* 67(6), 3312 - 3318.

Balamuth, F.; Brogdon, J. L. und Bottomly, K. (2004) CD4 raft association and signaling regulate molecular clustering at the immunological synapse site. *J. Immunol.,* 172(10), 5887 - 5892.

Baljinnyam, B. (2003) Untersuchungen zur F-Protein-vermittelten Fusion von Paramyxoviren. *Dissertation, Humboldt-Universität Berlin,*

Baljinnyam, B.; Schroth-Diez, B.; Korte, T. und Herrmann, A. (2002) Lysolipids do not inhibit influenza virus fusion by interaction with hemagglutinin. *J. Biol. Chem.,* 277(23), 20461 - 20467.

Ballesteros, J. A.; Deupi, X.; Olivella, M.; Haaksma, E. E. und Pardo, L. (2000) Serine and threonine residues bend alpha-helices in the chi(1) = g(-) conformation. *Biophys. J.,* 79(5), 2754 - 2760.

Bangs, J. D.; Hereld, D.; Krakow, J. L.; Hart, G. W. und Englund, P. T. (1985) Rapid processing of the carboxyl terminus of a trypanosome variant surface glycoprotein. *Proc. Natl. Acad. Sci. U. S. A,* 82(10), 3207 - 3211.

Banks, J. und Plowright, L. (2003) Additional glycosylation at the receptor binding site of the hemagglutinin (HA) for H5 and H7 viruses may be an adaptation to poultry hosts, but does it influence pathogenicity? *Avian Dis.,* 47(3 Suppl), 942 - 950.

Bano, M. C.; Jackson, C. S. und Magee, A. I. (1998) Pseudo-enzymatic S-acylation of a myristoylated yes protein tyrosine kinase peptide in vitro may reflect non-enzymatic S-acylation in vivo. *Biochem. J.,* 330 (Pt 2)723 - 731.

Bark, I. C.; Hahn, K. M.; Ryabinin, A. E. und Wilson, M. C. (1995) Differential expression of SNAP-25 protein isoforms during divergent vesicle fusion events of neural development. *Proc. Natl. Acad. Sci. U. S. A,* 92(5), 1510 - 1514.

Barnes, J. A. (1989) Conformation and stability of Sendai virus fusion protein. *Int. J. Biol. Macromol.,* 11(3), 130 - 136.

Belanger, C.; Ansanay, H.; Qanbar, R. und Bouvier, M. (2001) Primary sequence requirements for S-acylation of beta(2)-adrenergic receptor peptides. *FEBS Lett.,* 499(1-2), 59 - 64.

Bellizzi, J. J., III; Widom, J.; Kemp, C.; Lu, J. Y.; Das, A. K.; Hofmann, S. L. und Clardy, J. (2000) The crystal structure of palmitoyl protein thioesterase 1 and the molecular basis of infantile neuronal ceroid lipofuscinosis. *Proc. Natl. Acad. Sci. U. S. A,* 97(9), 4573 - 4578.

Berger, M. und Schmidt, M. F. (1984) Identification of acyl donors and acceptor proteins for fatty acid acylation in BHK cells infected with Semliki Forest virus. *EMBO J.,* 3(4), 713 - 719.

Berger, M. und Schmidt, M. F. (1984) Cell-free fatty acid acylation of Semliki Forest viral polypeptides with microsomal membranes from eukaryotic cells. *J. Biol. Chem.,* 259(11), 7245 - 7252.

Berger, M. und Schmidt, M. F. (1985) Protein fatty acyltransferase is located in the rough endoplasmic reticulum. *FEBS Lett.,* 187(2), 289 - 294.

Berger, M. und Schmidt, M. F. (1986) Characterization of a protein fatty acylesterase present in microsomal membranes of diverse origin. *J. Biol. Chem.,* 261(32), 14912 - 14918.

Bernstein, L. S.; Linder, M. E. und Hepler, J. R. (2004) Analysis of RGS protein palmitoylation. *Methods Mol. Biol.,* 237195 - 204.

Berthiaume, L.; Deichaite, I.; Peseckis, S. und Resh, M. D. (1994) Regulation of enzymatic activity by active site fatty acylation. A new role for long chain fatty acid acylation of proteins. *J. Biol. Chem.,* 269(9), 6498 - 6505.

Berthiaume, L. und Resh, M. D. (1995) Biochemical characterization of a palmitoyl acyltransferase activity that palmitoylates myristoylated proteins. *J. Biol. Chem.,* 270(38), 22399 - 22405.

Berthiaume, L. G. (2002) Insider information: how palmitoylation of Ras makes it a signaling double agent. *Sci. STKE.,* 2002(152), E41 -

Bharadwaj, M. und Bizzozero, O. A. (1995) Myelin P0 glycoprotein and a synthetic peptide containing the palmitoylation site are both autoacylated. *J. Neurochem.,* 65(4), 1805 - 1815.

Bhatnagar, R. S.; Qian, J. J. und Gough, C. A. (1997) The role in cell binding of a beta-bend within the triple helical region in collagen alpha 1 (I) chain: structural and biological evidence for conformational tautomerism on fiber surface. *J. Biomol. Struct. Dyn.,* 14(5), 547 - 560.

Bhatnagar, R. S.; Futterer, K.; Farazi, T. A.; Korolev, S.; Murray, C. L.; Jackson-Machelski, E.; Gokel, G. W.; Gordon, J. I. und Waksman, G. (1998) Structure of N-myristoyltransferase with bound myristoylCoA and peptide substrate analogs. *Nat. Struct. Biol.,* 5(12), 1091 - 1097.

Bhatnagar, R. S.; Futterer, K.; Waksman, G. und Gordon, J. I. (1999) The structure of myristoyl-CoA:protein N-myristoyltransferase. *Biochim. Biophys. Acta,* 1441(2-3), 162 - 172.

Biel, M.; Deck, P.; Giannis, A. und Waldmann, H. (2006) Synthesis and Evaluation of Acyl Protein Thioesterase 1 (APT1) Inhibitors. *Chemistry.,*

Bierer, B. E.; Greenstein, J. L.; Sleckman, B.; Ratnofsky, S.; Peterson, A.; Seed, B. und Burakoff, S. J. (1988) Functional analysis of CD2, CD4, and CD8 in T-cell activation. *Ann. N. Y. Acad. Sci.,* 532199 - 206.

Bijlmakers, M. J.; Isobe-Nakamura, M.; Ruddock, L. J. und Marsh, M. (1997) Intrinsic signals in the unique domain target p56(lck) to the plasma membrane independently of CD4. *J. Cell Biol.,* 137(5), 1029 - 1040.

Bijlmakers, M. J. und Marsh, M. (1999) Trafficking of an acylated cytosolic protein: newly synthesized p56(lck) travels to the plasma membrane via the exocytic pathway. *J. Cell Biol.,* 145(3), 457 - 468.

Bijlmakers, M. J. und Marsh, M. (2003) The on-off story of protein palmitoylation. *Trends Cell Biol.,* 13(1), 32 - 42.

Bijlsma, M. F.; Spek, C. A. und Peppelenbosch, M. P. (2004) Hedgehog: an unusual signal transducer. *Bioessays,* 26(4), 387 - 394.

Bizzozero, O. A. und Lees, M. B. (1986) Spectroscopic analysis of acylated and deacylated myelin proteolipid protein. *Biochemistry,* 25(22), 6762 - 6768.

Bizzozero, O. A.; McGarry, J. F. und Lees, M. B. (1986) Acylation of rat brain myelin proteolipid protein with different fatty acids. *J. Neurochem.,* 47(3), 772 - 778.

Bizzozero, O. A. und Lees, M. B. (1986) Fatty acid acylation of rat brain myelin proteolipid protein in vitro: identification of the lipid donor. *J. Neurochem.,* 46(2), 630 - 636.

Bizzozero, O. A. und Lees, M. B. (1986) Spectroscopic analysis of acylated and deacylated myelin proteolipid protein. *Biochemistry,* 25(22), 6762 - 6768.

Bizzozero, O. A.; McGarry, J. F. und Lees, M. B. (1987) Autoacylation of myelin proteolipid protein with acyl coenzyme A. *J. Biol. Chem.,* 262(28), 13550 - 13557.

Bizzozero, O. A.; McGarry, J. F. und Lees, M. B. (1987) Acylation of endogenous myelin proteolipid protein with different acyl-CoAs. *J. Biol. Chem.,* 262(5), 2138 - 2145.

Bizzozero, O. A.; Leyba, J. und Nunez, D. J. (1992) Characterization of proteolipid protein fatty acylesterase from rat brain myelin. *J. Biol. Chem.,* 267(11), 7886 - 7894.

Bizzozero, O. A.; Bixler, H. A. und Pastuszyn, A. (2001) Structural determinants influencing the reaction of cysteine-containing peptides with palmitoyl-coenzyme A and other thioesters. *Biochim. Biophys. Acta,* 1545(1-2), 278 - 288.

Blobel, G. (1980) Regulation of intracellular protein traffic. *Harvey Lect.,* 76125 - 147.

Blumenthal, R. und Morris, S. J. (1999) The influenza haemagglutinin-induced fusion cascade: effects of target membrane permeability changes. *Mol. Membr. Biol.,* 16(1), 43 - 47.

Bonatti, S.; Migliaccio, G. und Simons, K. (1989) Palmitylation of viral membrane glycoproteins takes place after exit from the endoplasmic reticulum. *J. Biol. Chem.,* 264(21), 12590 - 12595.

Bousse, T.; Takimoto, T.; Gorman, W. L.; Takahashi, T. und Portner, A. (1994) Regions on the hemagglutinin-neuraminidase proteins of human parainfluenza virus type-1 and Sendai virus important for membrane fusion. *Virology,* 204(2), 506 - 514.

Bouvier, M.; Loisel, T. P. und Hebert, T. (1995) Dynamic regulation of G-protein coupled receptor palmitoylation: potential role in receptor function. *Biochem. Soc. Trans.,* 23(3), 577 - 581.

Bouvier, M.; Moffett, S.; Loisel, T. P.; Mouillac, B.; Hebert, T. und Chidiac, P. (1995) Palmitoylation of G-protein-coupled receptors: a dynamic modification with functional consequences. *Biochem. Soc. Trans.,* 23(1), 116 - 120.

Bowen, H. A. und Lyles, D. S. (1981) Structure of Sendai viral proteins in plasma membranes of virus-infected cells. *J. Virol.,* 37(3), 1079 - 1082.

Bowie, J. U. (1997) Helix packing in membrane proteins. *J. Mol. Biol.,* 272(5), 780 - 789.

Brady, R. L. und Barclay, A. N. (1996) The structure of CD4. *Curr. Top. Microbiol. Immunol.,* 2051 - 18.

Braun, V. und Rehn, K. (1969) Chemical characterization, spatial distribution and function of a lipoprotein (murein-lipoprotein) of the E. coli cell wall. The specific effect of trypsin on the membrane structure. *Eur. J. Biochem.,* 10(3), 426 - 438.

Breuer, P. und Braulke, T. (1998) Stabilization of mutant 46-kDa mannose 6-phosphate receptors by proteasomal inhibitor lactacystin. *J. Biol. Chem.,* 273(50), 33254 - 33258.

Bryant, M. und Ratner, L. (1990) Myristoylation-dependent replication and assembly of human immunodeficiency virus 1. *Proc. Natl. Acad. Sci. U. S. A,* 87(2), 523 - 527.

Bullough, P. A.; Hughson, F. M.; Treharne, A. C.; Ruigrok, R. W.; Skehel, J. J. und Wiley, D. C. (1994) Crystals of a fragment of influenza haemagglutinin in the low pH induced conformation. *J. Mol. Biol.,* 236(4), 1262 - 1265.

Bullough, P. A.; Hughson, F. M.; Skehel, J. J. und Wiley, D. C. (1994) Structure of influenza haemagglutinin at the pH of membrane fusion. *Nature,* 371(6492), 37 - 43.

Buser, C. A.; Sigal, C. T.; Resh, M. D. und McLaughlin, S. (1994) Membrane binding of myristylated peptides corresponding to the NH2 terminus of Src. *Biochemistry,* 33(44), 13093 - 13101.

Buss, J. E.; Kamps, M. P.; Gould, K. und Sefton, B. M. (1986) The absence of myristic acid decreases membrane binding of p60src but does not affect tyrosine protein kinase activity. *J. Virol.,* 58(2), 468 - 474.

Caballero, M.; Carabana, J.; Ortego, J.; Fernandez-Munoz, R. und Celma, M. L. (1998) Measles virus fusion protein is palmitoylated on transmembrane-intracytoplasmic cysteine residues which participate in cell fusion. *J. Virol.,* 72(10), 8198 - 8204.

Caldwell, S. E. und Lyles, D. S. (1981) Interaction of Sendai virus proteins with the cytoplasmic surface of erythrocyte membranes following viral envelope fusion. *J. Biol. Chem.,* 256(10), 4838 - 4842.

Camp, L. A. und Hofmann, S. L. (1993) Purification and properties of a palmitoyl-protein thioesterase that cleaves palmitate from H-Ras. *J. Biol. Chem.,* 268(30), 22566 - 22574.

Camp, L. A.; Verkruyse, L. A.; Afendis, S. J.; Slaughter, C. A. und Hofmann, S. L. (1994) Molecular cloning and expression of palmitoyl-protein thioesterase. *J. Biol. Chem.,* 269(37), 23212 - 23219.

Carr, B. R.; MacDonald, P. C. und Simpson, E. R. (1982) The role of lipoproteins in the regulation of progesterone secretion by the human corpus luteum. *Fertil. Steril.,* 38(3), 303 - 311.

Carr, C. M. und Kim, P. S. (1993) A spring-loaded mechanism for the conformational change of influenza hemagglutinin. *Cell,* 73(4), 823 - 832.

Casey, P. J. (1992) Biochemistry of protein prenylation. *J. Lipid Res.,* 33(12), 1731 - 1740.

Casey, P. J. (1994) Lipid modifications of G proteins. *Curr. Opin. Cell Biol.,* 6(2), 219 - 225.

Casey, P. J. (1995) Protein lipidation in cell signaling. *Science,* 268(5208), 221 - 225.

Casey, P. J. und Seabra, M. C. (1996) Protein prenyltransferases. *J. Biol. Chem.,* 271(10), 5289 - 5292.

Chamoun, Z.; Mann, R. K.; Nellen, D.; von Kessler, D. P.; Bellotto, M.; Beachy, P. A. und Basler, K. (2001) Skinny hedgehog, an acyltransferase required for palmitoylation and activity of the hedgehog signal. *Science,* 293(5537), 2080 - 2084.

Chatterjee, S. und Mayor, S. (2001) The GPI-anchor and protein sorting. *Cell Mol. Life Sci.,* 58(14), 1969 - 1987.

Chen, J.; Wharton, S. A.; Weissenhorn, W.; Calder, L. J.; Hughson, F. M.; Skehel, J. J. und Wiley, D. C. (1995) A soluble domain of the membrane-anchoring chain of influenza virus hemagglutinin (HA2) folds in Escherichia coli into the low-pH-induced conformation. *Proc. Natl. Acad. Sci. U. S. A,* 92(26), 12205 - 12209.

Chen, J.; Skehel, J. J. und Wiley, D. C. (1999) N- and C-terminal residues combine in the fusion-pH influenza hemagglutinin HA(2) subunit to form an N cap that terminates the triple-stranded coiled coil. *Proc. Natl. Acad. Sci. U. S. A,* 96(16), 8967 - 8972.

Chen, M. H.; Li, Y. J.; Kawakami, T.; Xu, S. M. und Chuang, P. T. (2004) Palmitoylation is required for the production of a soluble multimeric Hedgehog protein complex and long-range signaling in vertebrates. *Genes Dev.,* 18(6), 641 - 659.

Chen, R.; Walter, E. I.; Parker, G.; Lapurga, J. P.; Millan, J. L.; Ikehara, Y.; Udenfriend, S. und Medof, M. E. (1998) Mammalian glycophosphatidylinositol anchor transfer to proteins and posttransfer deacylation. *Proc. Natl. Acad. Sci. U. S. A,* 95(16), 9512 - 9517.

Chernomordik, L. V.; Leikina, E.; Kozlov, M. M.; Frolov, V. A. und Zimmerberg, J. (1999) Structural intermediates in influenza haemagglutinin-mediated fusion. *Mol. Membr. Biol.,* 16(1), 33 - 42.

Cho, S. und Dawson, G. (2000) Palmitoyl protein thioesterase 1 protects against apoptosis mediated by Ras-Akt-caspase pathway in neuroblastoma cells. *J. Neurochem.,* 74(4), 1478 - 1488.

Cho, S.; Dawson, P. E. und Dawson, G. (2000) Antisense palmitoyl protein thioesterase 1 (PPT1) treatment inhibits PPT1 activity and increases cell death in LA-N-5 neuroblastoma cells. *J. Neurosci. Res.,* 62(2), 234 - 240.

Choppin, P. W.; Scheid, A. und Mountcastle, W. E. (1975) Proceedings: Paramyxoviruses, membranes, and persistent infections. *Neurology,* 25(5), 494 -

Choppin, P. W. und Scheid, A. (1980) The role of viral glycoproteins in adsorption, penetration, and pathogenicity of viruses. *Rev. Infect. Dis.,* 2(1), 40 - 61.

Choppin, P. W.; Richardson, C. D.; Merz, D. C. und Scheid, A. (1981) Functions of surface glycoproteins of myxoviruses and paramyxoviruses and their inhibition. *Ciba Found. Symp.,* 80252 - 269.

Chow, M.; Newman, J. F.; Filman, D.; Hogle, J. M.; Rowlands, D. J. und Brown, F. (1987) Myristylation of picornavirus capsid protein VP4 and its structural significance. *Nature,* 327(6122), 482 - 486.

Cohen, F. S. und Melikyan, G. B. (2001) Implications of a fusion peptide structure. *Nat. Struct. Biol.,* 8(8), 653 - 655.

Collins, P. L. und Mottet, G. (1993) Membrane orientation and oligomerization of the small hydrophobic protein of human respiratory syncytial virus. *J. Gen. Virol.,* 74 (Pt 7)1445 - 1450.

Cools, J.; Mentens, N. und Marynen, P. (2001) A new family of small, palmitoylated, membrane-associated proteins, characterized by the presence of a cysteine-rich hydrophobic motif. *FEBS Lett.,* 492(3), 204 - 209.

Copeland, K. F. (2002) The role of CD8+ T cell soluble factors in human immunodeficiency virus infection. *Curr. Med. Chem.,* 9(20), 1781 - 1790.

Corpet, F. (1988) Multiple sequence alignment with hierarchical clustering. *Nucleic Acids Res.,* 16(22), 10881 - 10890.

Coussen, F.; Ayon, A.; Le Goff, A.; Leroy, J.; Massoulie, J. und Bon, S. (2001) Addition of a glycophosphatidylinositol to acetylcholinesterase. Processing, degradation, and secretion. *J. Biol. Chem.,* 276(30), 27881 - 27892.

Crise, B. und Rose, J. K. (1992) Identification of palmitoylation sites on CD4, the human immunodeficiency virus receptor. *J. Biol. Chem.,* 267(19), 13593 - 13597.

Cross, F. R.; Garber, E. A.; Pellman, D. und Hanafusa, H. (1984) A short sequence in the p60src N terminus is required for p60src myristylation and membrane association and for cell transformation. *Mol. Cell Biol.,* 4(9), 1834 - 1842.

Cross, G. A. (1987) Eukaryotic protein modification and membrane attachment via phosphatidylinositol. *Cell,* 48(2), 179 - 181.

Cross, K. J.; Wharton, S. A.; Skehel, J. J.; Wiley, D. C. und Steinhauer, D. A. (2001) Studies on influenza haemagglutinin fusion peptide mutants generated by reverse genetics. *EMBO J.,* 20(16), 4432 - 4442.

Cross, K. J.; Burleigh, L. M. und Steinhauer, D. A. (2001) Mechanisms of cell entry by influenza virus. *Expert. Rev. Mol. Med.,* 20011 - 18.

da Silva, A. M. und Klein, C. (1990) A rapid posttranslational myristylation of a 68-kD protein in D. discoideum. *J. Cell Biol.,* 111(2), 401 - 407.

Das, A. K.; Dasgupta, B.; Bhattacharya, R. und Basu, J. (1997) Purification and biochemical characterization of a protein-palmitoyl acyltransferase from human erythrocytes. *J. Biol. Chem.,* 272(17), 11021 - 11025.

Das, A. K.; Becerra, C. H.; Yi, W.; Lu, J. Y.; Siakotos, A. N.; Wisniewski, K. E. und Hofmann, S. L. (1998) Molecular genetics of palmitoyl-protein thioesterase deficiency in the U.S. *J. Clin. Invest,* 102(2), 361 - 370.

Das, A. K.; Bellizzi, J. J., III; Tandel, S.; Biehl, E.; Clardy, J. und Hofmann, S. L. (2000) Structural basis for the insensitivity of a serine enzyme (palmitoyl-protein thioesterase) to phenylmethylsulfonyl fluoride. *J. Biol. Chem.,* 275(31), 23847 - 23851.

Das, A. K.; Lu, J. Y. und Hofmann, S. L. (2001) Biochemical analysis of mutations in palmitoyl-protein thioesterase causing infantile and late-onset forms of neuronal ceroid lipofuscinosis. *Hum. Mol. Genet.,* 10(13), 1431 - 1439.

Deber, C. M.; Khan, A. R.; Li, Z.; Joensson, C.; Glibowicka, M. und Wang, J. (1993) Val-->Ala mutations selectively alter helix-helix packing in the transmembrane segment of phage M13 coat protein. *Proc. Natl. Acad. Sci. U. S. A,* 90(24), 11648 - 11652.

Degtyarev, M. Y.; Spiegel, A. M. und Jones, T. L. (1993) Increased palmitoylation of the Gs protein alpha subunit after activation by the beta-adrenergic receptor or cholera toxin. *J. Biol. Chem.,* 268(32), 23769 - 23772.

Degtyarev, M. Y.; Spiegel, A. M. und Jones, T. L. (1994) Palmitoylation of a G protein alpha i subunit requires membrane localization not myristoylation. *J. Biol. Chem.,* 269(49), 30898 - 30903.

Deichaite, I.; Casson, L. P.; Ling, H. P. und Resh, M. D. (1988) In vitro synthesis of pp60v-src: myristylation in a cell-free system. *Mol. Cell Biol.,* 8(10), 4295 - 4301.

Del Real, G.; Jimenez-Baranda, S.; Lacalle, R. A.; Mira, E.; Lucas, P.; Gomez-Mouton, C.; Carrera, A. C.; Martinez, A. und Manes, S. (2002) Blocking of HIV-1 infection by targeting CD4 to nonraft membrane domains. *J. Exp. Med.,* 196(3), 293 - 301.

Del Sal, G.; Manfioletti, G. und Schneider, C. (1988) A one-tube plasmid DNA mini-preparation suitable for sequencing. *Nucleic Acids Res.,* 16(20), 9878 -

DeMar, J. C., Jr. und Anderson, R. E. (1997) Identification and quantitation of the fatty acids composing the CoA ester pool of bovine retina, heart, and liver. *J. Biol. Chem.,* 272(50), 31362 - 31368.

Dizhoor, A. M.; Ericsson, L. H.; Johnson, R. S.; Kumar, S.; Olshevskaya, E.; Zozulya, S.; Neubert, T. A.; Stryer, L.; Hurley, J. B. und Walsh, K. A. (1992) The NH2 terminus of retinal recoverin is acylated by a small family of fatty acids. *J. Biol. Chem.,* 267(23), 16033 - 16036.

Doms, R. W.; Helenius, A. und White, J. (1985) Membrane fusion activity of the influenza virus hemagglutinin. The low pH-induced conformational change. *J. Biol. Chem.,* 260(5), 2973 - 2981.

Doms, R. W. und Helenius, A. (1986) Quaternary structure of influenza virus hemagglutinin after acid treatment. *J. Virol.,* 60(3), 833 - 839.

Doms, R. W.; Gething, M. J.; Henneberry, J.; White, J. und Helenius, A. (1986) Variant influenza virus hemagglutinin that induces fusion at elevated pH. *J. Virol.,* 57(2), 603 - 613.

Doms, R. W. (1993) Protein conformational changes in virus-cell fusion. *Methods Enzymol.,* 22161 - 72.

Doms, R. W. und Trono, D. (2000) The plasma membrane as a combat zone in the HIV battlefield. *Genes Dev.,* 14(21), 2677 - 2688.

Doyle, C.; Shin, J.; Dunbrack, R. L., Jr. und Strominger, J. L. (1989) Mutational analysis of the structure and function of the CD4 protein. *Immunol. Rev.,* 10917 - 37.

Duncan, J. A. und Gilman, A. G. (1996) Autoacylation of G protein alpha subunits. *J. Biol. Chem.,* 271(38), 23594 - 23600.

Duncan, J. A. und Gilman, A. G. (1998) A cytoplasmic acyl-protein thioesterase that removes palmitate from G protein alpha subunits and p21(RAS). *J. Biol. Chem.,* 273(25), 15830 - 15837.

Duncan, J. A. und Gilman, A. G. (2002) Characterization of Saccharomyces cerevisiae acyl-protein thioesterase 1, the enzyme responsible for G protein alpha subunit deacylation in vivo. *J. Biol. Chem.,* 277(35), 31740 - 31752.

Dunphy, J. T.; Greentree, W. K.; Manahan, C. L. und Linder, M. E. (1996) G-protein palmitoyltransferase activity is enriched in plasma membranes. *J. Biol. Chem.,* 271(12), 7154 - 7159.

Dunphy, J. T. und Linder, M. E. (1998) Signalling functions of protein palmitoylation. *Biochim. Biophys. Acta,* 1436(1-2), 245 - 261.

Dunphy, J. T.; Schroeder, H.; Leventis, R.; Greentree, W. K.; Knudsen, J. K.; Silvius, J. R. und Linder, M. E. (2000) Differential effects of acyl-CoA binding protein on enzymatic and non-enzymatic thioacylation of protein and peptide substrates. *Biochim. Biophys. Acta,* 1485(2-3), 185 - 198.

Dunphy, J. T.; Greentree, W. K. und Linder, M. E. (2001) Enrichment of G-protein palmitoyltransferase activity in low density membranes: in vitro reconstitution of Galphai to these domains requires palmitoyltransferase activity. *J. Biol. Chem.,* 276(46), 43300 - 43304.

Dunphy, W. G.; Fries, E.; Urbani, L. J. und Rothman, J. E. (1981) Early and late functions associated with the Golgi apparatus reside in distinct compartments. *Proc. Natl. Acad. Sci. U. S. A,* 78(12), 7453 - 7457.

Duronio, R. J.; Towler, D. A.; Heuckeroth, R. O. und Gordon, J. I. (1989) Disruption of the yeast N-myristoyl transferase gene causes recessive lethality. *Science,* 243(4892), 796 - 800.

Dutch, R. E.; Jardetzky, T. S. und Lamb, R. A. (2000) Virus membrane fusion proteins: biological machines that undergo a metamorphosis. *Biosci. Rep.,* 20(6), 597 - 612.

Eichmann, K.; Ehrfeld, A.; Falk, I.; Goebel, H.; Kupsch, J.; Reimann, A.; Zgaga-Griesz, A.; Saizawa, K. M.; Yachelini, P. und Tomonari, K. (1991) Affinity enhancement and transmembrane signaling are associated with distinct epitopes on the CD8 alpha beta heterodimer. *J. Immunol.,* 147(7), 2075 - 2081.

Eilers, M.; Patel, A. B.; Liu, W. und Smith, S. O. (2002) Comparison of helix interactions in membrane and soluble alpha-bundle proteins. *Biophys. J.,* 82(5), 2720 - 2736.

Eisenhaber, B.; Maurer-Stroh, S.; Novatchkova, M.; Schneider, G. und Eisenhaber, F. (2003) Enzymes and auxiliary factors for GPI lipid anchor biosynthesis and post-translational transfer to proteins. *Bioessays,* 25(4), 367 - 385.

El Husseini, A. E.; Craven, S. E.; Chetkovich, D. M.; Firestein, B. L.; Schnell, E.; Aoki, C. und Bredt, D. S. (2000) Dual palmitoylation of PSD-95 mediates its vesiculotubular sorting, postsynaptic targeting, and ion channel clustering. *J. Cell Biol.,* 148(1), 159 - 172.

El Husseini, A. E. und Bredt, D. S. (2002) Protein palmitoylation: a regulator of neuronal development and function. *Nat. Rev. Neurosci.,* 3(10), 791 - 802.

Elroy-Stein, O. und Moss, B. (1990) Cytoplasmic expression system based on constitutive synthesis of bacteriophage T7 RNA polymerase in mammalian cells. *Proc. Natl. Acad. Sci. U. S. A,* 87(17), 6743 - 6747.

Farazi, T. A.; Waksman, G. und Gordon, J. I. (2001) The biology and enzymology of protein N-myristoylation. *J. Biol. Chem.,* 276(43), 39501 - 39504.

Fasshauer, D.; Bruns, D.; Shen, B.; Jahn, R. und Brunger, A. T. (1997) A structural change occurs upon binding of syntaxin to SNAP-25. *J. Biol. Chem.,* 272(7), 4582 - 4590.

Fayadat, L. und Kopito, R. R. (2003) Recognition of a single transmembrane degron by sequential quality control checkpoints. *Mol. Biol. Cell,* 14(3), 1268 - 1278.

Feng, Y. und Davis, N. G. (2000) Akr1p and the type I casein kinases act prior to the ubiquitination step of yeast endocytosis: Akr1p is required for kinase localization to the plasma membrane. *Mol. Cell Biol.,* 20(14), 5350 - 5359.

Ferguson, M. A.; Duszenko, M.; Lamont, G. S.; Overath, P. und Cross, G. A. (1986) Biosynthesis of Trypanosoma brucei variant surface glycoproteins. N-glycosylation and addition of a phosphatidylinositol membrane anchor. *J. Biol. Chem.,* 261(1), 356 - 362.

Ferguson, M. A. und Williams, A. F. (1988) Cell-surface anchoring of proteins via glycosyl-phosphatidylinositol structures. *Annu. Rev. Biochem.,* 57285 - 320.

Ferguson, M. A. (1999) The structure, biosynthesis and functions of glycosylphosphatidylinositol anchors, and the contributions of trypanosome research. *J. Cell Sci.,* 112 (Pt 17)2799 - 2809.

Fischer, C.; Schroth-Diez, B.; Herrmann, A.; Garten, W. und Klenk, H. D. (1998) Acylation of the influenza hemagglutinin modulates fusion activity. *Virology,* 248(2), 284 - 294.

Flandorfer, A.; Garcia-Sastre, A.; Basler, C. F. und Palese, P. (2003) Chimeric influenza A viruses with a functional influenza B virus neuraminidase or hemagglutinin. *J. Virol.,* 77(17), 9116 - 9123.

Fragoso, R.; Ren, D.; Zhang, X.; Su, M. W.; Burakoff, S. J. und Jin, Y. J. (2003) Lipid raft distribution of CD4 depends on its palmitoylation and association with Lck, and evidence for CD4-induced lipid raft aggregation as an additional mechanism to enhance CD3 signaling. *J. Immunol.,* 170(2), 913 - 921.

Fuerst, T. R.; Niles, E. G.; Studier, F. W. und Moss, B. (1986) Eukaryotic transient-expression system based on recombinant vaccinia virus that synthesizes bacteriophage T7 RNA polymerase. *Proc. Natl. Acad. Sci. U. S. A,* 83(21), 8122 - 8126.

Fujimoto, T.; Stroud, E.; Whatley, R. E.; Prescott, S. M.; Muszbek, L.; Laposata, M. und McEver, R. P. (1993) P-selectin is acylated with palmitic acid and stearic acid at cysteine 766 through a thioester linkage. *J. Biol. Chem.,* 268(15), 11394 - 11400.

Fukata, M.; Fukata, Y.; Adesnik, H.; Nicoll, R. A. und Bredt, D. S. (2004) Identification of PSD-95 palmitoylating enzymes. *Neuron,* 44(6), 987 - 996.

Futterer, K.; Murray, C. L.; Bhatnagar, R. S.; Gokel, G. W.; Gordon, J. I. und Waksman, G. (2001) Crystallographic phasing of myristoyl-CoA-protein N-myristoyltransferase using an iodinated analog of myristoyl-CoA. *Acta Crystallogr. D. Biol. Crystallogr.,* 57(Pt 3), 393 - 400.

Gaedigk-Nitschko, K.; Ding, M. X.; Levy, M. A. und Schlesinger, M. J. (1990) Site-directed mutations in the Sindbis virus 6K protein reveal sites for fatty acylation and the underacylated protein affects virus release and virion structure. *Virology,* 175(1), 282 - 291.

Gaedigk-Nitschko, K. und Schlesinger, M. J. (1991) Site-directed mutations in Sindbis virus E2 glycoprotein's cytoplasmic domain and the 6K protein lead to similar defects in virus assembly and budding. *Virology,* 183(1), 206 - 214.

Gagnon, J.; Finch, P. R.; Wood, D. D. und Moscarello, M. A. (1971) Isolation of a highly purified myelin protein. *Biochemistry,* 10(25), 4756 - 4763.

Galbiati, F.; Guzzi, F.; Magee, A. I.; Milligan, G. und Parenti, M. (1994) N-terminal fatty acylation of the alpha-subunit of the G-protein Gi1: only the myristoylated protein is a substrate for palmitoylation. *Biochem. J.,* 303 (Pt 3)697 - 700.

Galbiati, F.; Volonte, D.; Meani, D.; Milligan, G.; Lublin, D. M.; Lisanti, M. P. und Parenti, M. (1999) The dually acylated NH2-terminal domain of gi1alpha is sufficient to target a green fluorescent protein reporter to caveolin-enriched plasma membrane domains. Palmitoylation of caveolin-1 is required for the recognition of dually acylated g-protein alpha subunits in vivo. *J. Biol. Chem.,* 274(9), 5843 - 5850.

Garten, W. und Klenk, H. D. (1999) Understanding influenza virus pathogenicity. *Trends Microbiol.,* 7(3), 99 - 100.

Gaudin, Y.; Ruigrok, R. W. und Brunner, J. (1995) Low-pH induced conformational changes in viral fusion proteins: implications for the fusion mechanism. *J. Gen. Virol.,* 76 (Pt 7)1541 - 1556.

Ge, L. und Rudolph, P. (1997) Simultaneous introduction of multiple mutations using overlap extension PCR. *Biotechniques,* 22(1), 28 - 30.

Gelb, M. H.; Scholten, J. D. und Sebolt-Leopold, J. S. (1998) Protein prenylation: from discovery to prospects for cancer treatment. *Curr. Opin. Chem. Biol.,* 2(1), 40 - 48.

Gething, M.; Koszinowski, U. und Waterfield, M. (1978) Fusion of Sendai virus with the target cell membrane is required for T cell cytotoxicity. *Nature,* 274(5672), 689 - 691.

Gething, M. J.; White, J. M. und Waterfield, M. D. (1978) Purification of the fusion protein of Sendai virus: analysis of the NH2-terminal sequence generated during precursor activation. *Proc. Natl. Acad. Sci. U. S. A,* 75(6), 2737 - 2740.

Gething, M. J.; McCammon, K. und Sambrook, J. (1986) Expression of wild-type and mutant forms of influenza hemagglutinin: the role of folding in intracellular transport. *Cell,* 46(6), 939 - 950.

Giang, D. K. und Cravatt, B. F. (1998) A second mammalian N-myristoyltransferase. *J. Biol. Chem.,* 273(12), 6595 - 6598.

Gilman, A. G. (1995) Nobel Lecture. G proteins and regulation of adenylyl cyclase. *Biosci. Rep.,* 15(2), 65 - 97.

Givan, S. A. und Sprague, G. F., Jr. (1997) The ankyrin repeat-containing protein Akr1p is required for the endocytosis of yeast pheromone receptors. *Mol. Biol. Cell,* 8(7), 1317 - 1327.

Glover, C. J. und Felsted, R. L. (1995) Identification and characterization of multiple forms of bovine brain N-myristoyltransferase. *J. Biol. Chem.,* 270(39), 23226 - 23233.

Gonelle-Gispert, C.; Molinete, M.; Halban, P. A. und Sadoul, K. (2000) Membrane localization and biological activity of SNAP-25 cysteine mutants in insulin-secreting cells. *J. Cell Sci.,* 113 (Pt 18)3197 - 3205.

Gonzalez, E.; Kou, R.; Lin, A. J.; Golan, D. E. und Michel, T. (2002) Subcellular targeting and agonist-induced site-specific phosphorylation of endothelial nitric-oxide synthase. *J. Biol. Chem.,* 277(42), 39554 - 39560.

Gordon, J. I.; Duronio, R. J.; Rudnick, D. A.; Adams, S. P. und Gokel, G. W. (1991) Protein N-myristoylation. *J. Biol. Chem.,* 266(14), 8647 - 8650.

Gorman, J. J.; Nestorowicz, A.; Mitchell, S. J.; Corino, G. L. und Selleck, P. W. (1988) Characterization of the sites of proteolytic activation of Newcastle disease virus membrane glycoprotein precursors. *J. Biol. Chem.,* 263(25), 12522 - 12531.

Gottlinger, H. G.; Sodroski, J. G. und Haseltine, W. A. (1989) Role of capsid precursor processing and myristoylation in morphogenesis and infectivity of human immunodeficiency virus type 1. *Proc. Natl. Acad. Sci. U. S. A,* 86(15), 5781 - 5785.

Grosenbach, D. W.; Ulaeto, D. O. und Hruby, D. E. (1997) Palmitylation of the vaccinia virus 37-kDa major envelope antigen. Identification of a conserved acceptor motif and biological relevance. *J. Biol. Chem.,* 272(3), 1956 - 1964.

Gundersen, C. B.; Mastrogiacomo, A.; Faull, K. und Umbach, J. A. (1994) Extensive lipidation of a Torpedo cysteine string protein. *J. Biol. Chem.,* 269(30), 19197 - 19199.

Gupta, P.; Soyombo, A. A.; Atashband, A.; Wisniewski, K. E.; Shelton, J. M.; Richardson, J. A.; Hammer, R. E. und Hofmann, S. L. (2001) Disruption of PPT1 or PPT2 causes neuronal ceroid lipofuscinosis in knockout mice. *Proc. Natl. Acad. Sci. U. S. A,* 98(24), 13566 - 13571.

Gupta, P.; Soyombo, A. A.; Shelton, J. M.; Wilkofsky, I. G.; Wisniewski, K. E.; Richardson, J. A. und Hofmann, S. L. (2003) Disruption of PPT2 in mice causes an unusual lysosomal storage disorder with neurovisceral features. *Proc. Natl. Acad. Sci. U. S. A,* 100(21), 12325 - 12330.

Hackett, M.; Guo, L.; Shabanowitz, J.; Hunt, D. F. und Hewlett, E. L. (1994) Internal lysine palmitoylation in adenylate cyclase toxin from Bordetella pertussis. *Science,* 266(5184), 433 - 435.

Hallak, H.; Muszbek, L.; Laposata, M.; Belmonte, E.; Brass, L. F. und Manning, D. R. (1994) Covalent binding of arachidonate to G protein alpha subunits of human platelets. *J. Biol. Chem.,* 269(7), 4713 - 4716.

Hallak, H.; Brass, L. F. und Manning, D. R. (1994) Failure to myristoylate the alpha subunit of Gz is correlated with an inhibition of palmitoylation and membrane attachment, but has no affect on phosphorylation by protein kinase C. *J. Biol. Chem.,* 269(6), 4571 - 4576.

Han, M.; Lin, S. W.; Minkova, M.; Smith, S. O. und Sakmar, T. P. (1996) Functional interaction of transmembrane helices 3 and 6 in rhodopsin. Replacement of phenylalanine 261 by alanine causes reversion of phenotype of a glycine 121 replacement mutant. *J. Biol. Chem.,* 271(50), 32337 - 32342.

Hancock, J. F.; Paterson, H. und Marshall, C. J. (1990) A polybasic domain or palmitoylation is required in addition to the CAAX motif to localize p21ras to the plasma membrane. *Cell,* 63(1), 133 - 139.

Hansen, S. G.; Grosenbach, D. W. und Hruby, D. E. (1999) Analysis of the site occupancy constraints of primary amino acid sequences in the motif directing palmitylation of the vaccinia virus 37-kDa envelope protein. *Virology,* 254(1), 124 - 137.

Hantke, K. und Braun, V. (1973) Covalent binding of lipid to protein. Diglyceride and amide-linked fatty acid at the N-terminal end of the murein-lipoprotein of the Escherichia coli outer membrane. *Eur. J. Biochem.,* 34(2), 284 - 296.

Heikinheimo, P.; Goldman, A.; Jeffries, C. und Ollis, D. L. (1999) Of barn owls and bankers: a lush variety of alpha/beta hydrolases. *Structure.,* 7(6), R141 - R146.

Hellsten, E.; Vesa, J.; Olkkonen, V. M.; Jalanko, A. und Peltonen, L. (1996) Human palmitoyl protein thioesterase: evidence for lysosomal targeting of the enzyme and disturbed cellular routing in infantile neuronal ceroid lipofuscinosis. *EMBO J.,* 15(19), 5240 - 5245.

Henis, Y. I. und Gutman, O. (1987) Lateral mobility of reconstituted Sendai virus envelope glycoproteins on human erythrocytes: correlation with cell-cell fusion. *Biochemistry,* 26(3), 812 - 819.

Hennecke, S. und Cosson, P. (1993) Role of transmembrane domains in assembly and intracellular transport of the CD8 molecule. *J. Biol. Chem.,* 268(35), 26607 - 26612.

Hermida-Matsumoto, L. und Resh, M. D. (1999) Human immunodeficiency virus type 1 protease triggers a myristoyl switch that modulates membrane binding of Pr55(gag) and p17MA. *J. Virol.,* 73(3), 1902 - 1908.

Hernandez, D.; Gras, R. und Appel, R. (2004) MoDEL: an efficient strategy for ungapped local multiple alignment. *Comput. Biol. Chem.,* 28(2), 119 - 128.

Higgins, J. B. und Casey, P. J. (1996) The role of prenylation in G-protein assembly and function. *Cell Signal.,* 8(6), 433 - 437.

Hill, C. P.; Worthylake, D.; Bancroft, D. P.; Christensen, A. M. und Sundquist, W. I. (1996) Crystal structures of the trimeric human immunodeficiency virus type 1 matrix protein: implications for membrane association and assembly. *Proc. Natl. Acad. Sci. U. S. A,* 93(7), 3099 - 3104.

Hofmann, S. L.; Lee, L. A.; Lu, J. Y. und Verkruyse, L. A. (1997) Palmitoyl-protein thioesterase and the molecular pathogenesis of infantile neuronal ceroid lipofuscinosis. *Neuropediatrics,* 28(1), 27 - 30.

Holsinger, L. J.; Shaughnessy, M. A.; Micko, A.; Pinto, L. H. und Lamb, R. A. (1995) Analysis of the posttranslational modifications of the influenza virus M2 protein. *J. Virol.,* 69(2), 1219 - 1225.

Horejsi, V. (2004) Transmembrane adaptor proteins in membrane microdomains: important regulators of immunoreceptor signaling. *Immunol. Lett.,* 92(1-2), 43 - 49.

Horvath, C. M.; Paterson, R. G.; Shaughnessy, M. A.; Wood, R. und Lamb, R. A. (1992) Biological activity of paramyxovirus fusion proteins: factors influencing formation of syncytia. *J. Virol.,* 66(7), 4564 - 4569.

Horvath, C. M. und Lamb, R. A. (1992) Studies on the fusion peptide of a paramyxovirus fusion glycoprotein: roles of conserved residues in cell fusion. *J. Virol.,* 66(4), 2443 - 2455.

Hsu, M.; Scheid, A. und Choppin, P. W. (1981) Activation of the Sendai virus fusion protein (f) involves a conformational change with exposure of a new hydrophobic region. *J. Biol. Chem.,* 256(7), 3557 - 3563.

Huang, K.; Yanai, A.; Kang, R.; Arstikaitis, P.; Singaraja, R. R.; Metzler, M.; Mullard, A.; Haigh, B.; Gauthier-Campbell, C.; Gutekunst, C. A.; Hayden, M. R. und El Husseini, A. (2004) Huntingtin-interacting protein HIP14 is a palmitoyl transferase involved in palmitoylation and trafficking of multiple neuronal proteins. *Neuron,* 44(6), 977 - 986.

Huang, Q.; Opitz, R.; Knapp, E. W. und Herrmann, A. (2002) Protonation and stability of the globular domain of influenza virus hemagglutinin. *Biophys. J.,* 82(2), 1050 - 1058.

Huang, Q.; Sivaramakrishna, R. P.; Ludwig, K.; Korte, T.; Bottcher, C. und Herrmann, A. (2003) Early steps of the conformational change of influenza virus hemagglutinin to a fusion active state: stability and energetics of the hemagglutinin. *Biochim. Biophys. Acta,* 1614(1), 3 - 13.

Huang, Q.; Chen, C. L. und Herrmann, A. (2004) Bilayer conformation of fusion peptide of influenza virus hemagglutinin: a molecular dynamics simulation study. *Biophys. J.,* 87(1), 14 - 22.

Hughson, F. M. (1995) Structural characterization of viral fusion proteins. *Curr. Biol.,* 5(3), 265 - 274.

Ishida, N. und Homma, M. (1978) Sendai virus. *Adv. Virus Res.,* 23349 - 383.

Ivanova, L. und Schlesinger, M. J. (1993) Site-directed mutations in the Sindbis virus E2 glycoprotein identify palmitoylation sites and affect virus budding. *J. Virol.,* 67(5), 2546 - 2551.

Javadpour, M. M.; Eilers, M.; Groesbeek, M. und Smith, S. O. (1999) Helix packing in polytopic membrane proteins: role of glycine in transmembrane helix association. *Biophys. J.,* 77(3), 1609 - 1618.

Jin, H.; Leser, G. P. und Lamb, R. A. (1994) The influenza virus hemagglutinin cytoplasmic tail is not essential for virus assembly or infectivity. *EMBO J.,* 13(22), 5504 - 5515.

Jin, H.; Subbarao, K.; Bagai, S.; Leser, G. P.; Murphy, B. R. und Lamb, R. A. (1996) Palmitylation of the influenza virus hemagglutinin (H3) is not essential for virus assembly or infectivity. *J. Virol.,* 70(3), 1406 - 1414.

Jin, H.; Leser, G. P.; Zhang, J. und Lamb, R. A. (1997) Influenza virus hemagglutinin and neuraminidase cytoplasmic tails control particle shape. *EMBO J.,* 16(6), 1236 - 1247.

Jing, S. Q. und Trowbridge, I. S. (1987) Identification of the intermolecular disulfide bonds of the human transferrin receptor and its lipid-attachment site. *EMBO J.,* 6(2), 327 - 331.

Jing, S. Q. und Trowbridge, I. S. (1990) Nonacylated human transferrin receptors are rapidly internalized and mediate iron uptake. *J. Biol. Chem.,* 265(20), 11555 - 11559.

Jing, S. Q.; Spencer, T.; Miller, K.; Hopkins, C. und Trowbridge, I. S. (1990) Role of the human transferrin receptor cytoplasmic domain in endocytosis: localization of a specific signal sequence for internalization. *J. Cell Biol.,* 110(2), 283 - 294.

Johnson, D. R.; Cok, S. J.; Feldmann, H. und Gordon, J. I. (1994) Suppressors of nmtl-181, a conditional lethal allele of the Saccharomyces cerevisiae myristoyl-CoA:protein N-myristoyltransferase gene, reveal proteins involved in regulating protein N-myristoylation. *Proc. Natl. Acad. Sci. U. S. A,* 91(21), 10158 - 10162.

Jones, T. L. (2004) Role of palmitoylation in RGS protein function. *Methods Enzymol.,* 38933 - 55.

Jung, V.; Chen, L.; Hofmann, S. L.; Wigler, M. und Powers, S. (1995) Mutations in the SHR5 gene of Saccharomyces cerevisiae suppress Ras function and block membrane attachment and palmitoylation of Ras proteins. *Mol. Cell Biol.,* 15(3), 1333 - 1342.

Kabouridis, P. S.; Magee, A. I. und Ley, S. C. (1997) S-acylation of LCK protein tyrosine kinase is essential for its signalling function in T lymphocytes. *EMBO J.,* 16(16), 4983 - 4998.

Kamps, M. P.; Buss, J. E. und Sefton, B. M. (1985) Mutation of NH2-terminal glycine of p60src prevents both myristoylation and morphological transformation. *Proc. Natl. Acad. Sci. U. S. A,* 82(14), 4625 - 4628.

Karnik, S. S.; Ridge, K. D.; Bhattacharya, S. und Khorana, H. G. (1993) Palmitoylation of bovine opsin and its cysteine mutants in COS cells. *Proc. Natl. Acad. Sci. U. S. A,* 90(1), 40 - 44.

Kaufmann, S. H. (1988) CD8+ T lymphocytes in intracellular microbial infections. *Immunol. Today,* 9(6), 168 - 174.

Kawate, N. und Menon, K. M. (1994) Palmitoylation of luteinizing hormone/human choriogonadotropin receptors in transfected cells. Abolition of palmitoylation by mutation of Cys-621 and Cys-622 residues in the cytoplasmic tail increases ligand-induced internalization of the receptor. *J. Biol. Chem.,* 269(48), 30651 - 30658.

Keller, P. und Simons, K. (1998) Cholesterol is required for surface transport of influenza virus hemagglutinin. *J. Cell Biol.,* 140(6), 1357 - 1367.

Kennedy, M. E. und Limbird, L. E. (1994) Palmitoylation of the alpha 2A-adrenergic receptor. Analysis of the sequence requirements for and the dynamic properties of alpha 2A-adrenergic receptor palmitoylation. *J. Biol. Chem.,* 269(50), 31915 - 31922.

Kinnunen, P. K. und Holopainen, J. M. (2000) Mechanisms of initiation of membrane fusion: role of lipids. *Biosci. Rep.,* 20(6), 465 - 482.

Klenk, H. D.; Nagai, Y.; Rott, R. und Nicolau, C. (1977) The structure and function of paramyxovirus glycoproteins. *Med. Microbiol. Immunol. (Berl),* 164(1-3), 35 - 47.

Klenk, H. D. und Rott, R. (1988) The molecular biology of influenza virus pathogenicity. *Adv. Virus Res.,* 34247 - 281.

Klenk, H. D. und Garten, W. (1994) Host cell proteases controlling virus pathogenicity. *Trends Microbiol.,* 2(2), 39 - 43.

Kodukula, K.; Gerber, L. D.; Amthauer, R.; Brink, L. und Udenfriend, S. (1993) Biosynthesis of glycosylphosphatidylinositol (GPI)-anchored membrane proteins in intact cells: specific amino acid requirements adjacent to the site of cleavage and GPI attachment. *J. Cell Biol.,* 120(3), 657 - 664.

Koegl, M.; Zlatkine, P.; Ley, S. C.; Courtneidge, S. A. und Magee, A. I. (1994) Palmitoylation of multiple Src-family kinases at a homologous N-terminal motif. *Biochem. J.,* 303 (Pt 3)749 - 753.

Kokame, K.; Fukada, Y.; Yoshizawa, T.; Takao, T. und Shimonishi, Y. (1992) Lipid modification at the N terminus of photoreceptor G-protein alpha-subunit. *Nature,* 359(6397), 749 - 752.

Kozerski, C.; Ponimaskin, E.; Schroth-Diez, B.; Schmidt, M. F. und Herrmann, A. (2000) Modification of the cytoplasmic domain of influenza virus hemagglutinin affects enlargement of the fusion pore. *J. Virol.,* 74(16), 7529 - 7537.

Kuroda, K.; Veit, M. und Klenk, H. D. (1991) Retarded processing of influenza virus hemagglutinin in insect cells. *Virology,* 180(1), 159 - 165.

Kuroya, M. und Ishida, N. (1953) Newborn virus pneumonitis (type Sendai). II. The isolation of a new virus possessing hemagglutinin activity. *Yokohama. Med. Bull.,* 4(4), 217 - 233.

Kwong, J. und Lublin, D. M. (1995) Amino-terminal palmitate or polybasic domain can provide required second signal to myristate for membrane binding of p56lck. *Biochem. Biophys. Res. Commun.,* 207(2), 868 - 876.

Lai, A. L.; Park, H.; White, J. M. und Tamm, L. K. (2006) Fusion peptide of influenza hemagglutinin requires a fixed angle boomerang structure for activity. *J. Biol. Chem.,* 281(9), 5760 - 5770.

Lamb, R. A. und Choppin, P. W. (1983) The gene structure and replication of influenza virus. *Annu. Rev. Biochem.,* 52467 - 506.

Lamb, R. A.; Joshi, S. B. und Dutch, R. E. (1999) The paramyxovirus fusion protein forms an extremely stable core trimer: structural parallels to influenza virus haemagglutinin and HIV-1 gp41. *Mol. Membr. Biol.,* 16(1), 11 - 19.

Landolt-Marticorena, C.; Williams, K. A.; Deber, C. M. und Reithmeier, R. A. (1993) Non-random distribution of amino acids in the transmembrane segments of human type I single span membrane proteins. *J. Mol. Biol.,* 229(3), 602 - 608.

Lane, S. R. und Liu, Y. (1997) Characterization of the palmitoylation domain of SNAP-25. *J. Neurochem.,* 69(5), 1864 - 1869.

Lang, T.; Bruns, D.; Wenzel, D.; Riedel, D.; Holroyd, P.; Thiele, C. und Jahn, R. (2001) SNAREs are concentrated in cholesterol-dependent clusters that define docking and fusion sites for exocytosis. *EMBO J.,* 20(9), 2202 - 2213.

Laposata, M. und Muszbek, L. (1996) Thioesterification of platelet proteins with saturated and polyunsaturated fatty acids. *Lipids,* 31 SupplS217 - S221.

Lee, J. D. und Treisman, J. E. (2001) Sightless has homology to transmembrane acyltransferases and is required to generate active Hedgehog protein. *Curr. Biol.,* 11(14), 1147 - 1152.

Lehtovirta, M.; Kyttala, A.; Eskelinen, E. L.; Hess, M.; Heinonen, O. und Jalanko, A. (2001) Palmitoyl protein thioesterase (PPT) localizes into synaptosomes and synaptic vesicles in neurons: implications for infantile neuronal ceroid lipofuscinosis (INCL). *Hum. Mol. Genet.,* 10(1), 69 - 75.

Lemmon, M. A.; Flanagan, J. M.; Treutlein, H. R.; Zhang, J. und Engelman, D. M. (1992) Sequence specificity in the dimerization of transmembrane alpha-helices. *Biochemistry,* 31(51), 12719 - 12725.

Lemmon, M. A.; Treutlein, H. R.; Adams, P. D.; Brunger, A. T. und Engelman, D. M. (1994) A dimerization motif for transmembrane alpha-helices. *Nat. Struct. Biol.,* 1(3), 157 - 163.

Leventis, R.; Juel, G.; Knudsen, J. K. und Silvius, J. R. (1997) Acyl-CoA binding proteins inhibit the nonenzymic S-acylation of cysteinyl-containing peptide sequences by long-chain acyl-CoAs. *Biochemistry,* 36(18), 5546 - 5553.

Li, S. C. und Deber, C. M. (1992) Glycine and beta-branched residues support and modulate peptide helicity in membrane environments. *FEBS Lett.,* 311(3), 217 - 220.

Li, S. C. und Deber, C. M. (1992) Influence of glycine residues on peptide conformation in membrane environments. *Int. J. Pept. Protein Res.,* 40(3-4), 243 - 248.

Liang, X.; Lu, Y.; Neubert, T. A. und Resh, M. D. (2002) Mass spectrometric analysis of GAP-43/neuromodulin reveals the presence of a variety of fatty acylated species. *J. Biol. Chem.,* 277(36), 33032 - 33040.

Linder, M. E. und Deschenes, R. J. (2004) Model organisms lead the way to protein palmitoyltransferases. *J. Cell Sci.,* 117(Pt 4), 521 - 526.

Littman, D. R. (1987) The structure of the CD4 and CD8 genes. *Annu. Rev. Immunol.,* 5561 - 584.

Liu, J.; Garcia-Cardena, G. und Sessa, W. C. (1995) Biosynthesis and palmitoylation of endothelial nitric oxide synthase: mutagenesis of palmitoylation sites, cysteines-15 and/or -26, argues against depalmitoylation-induced translocation of the enzyme. *Biochemistry,* 34(38), 12333 - 12340.

Liu, J.; Garcia-Cardena, G. und Sessa, W. C. (1996) Palmitoylation of endothelial nitric oxide synthase is necessary for optimal stimulated release of nitric oxide: implications for caveolae localization. *Biochemistry,* 35(41), 13277 - 13281.

Liu, J.; Hughes, T. E. und Sessa, W. C. (1997) The first 35 amino acids and fatty acylation sites determine the molecular targeting of endothelial nitric oxide synthase into the Golgi region of cells: a green fluorescent protein study. *J. Cell Biol.,* 137(7), 1525 - 1535.

Liu, L.; Dudler, T. und Gelb, M. H. (1996) Purification of a protein palmitoyltransferase that acts on H-Ras protein and on a C-terminal N-Ras peptide. *J. Biol. Chem.,* 271(38), 23269 - 23276.

Liu, L. X.; Margottin, F.; Le Gall, S.; Schwartz, O.; Selig, L.; Benarous, R. und Benichou, S. (1997) Binding of HIV-1 Nef to a novel thioesterase enzyme correlates with Nef-mediated CD4 down-regulation. *J. Biol. Chem.,* 272(21), 13779 - 13785.

Lobo, S.; Greentree, W. K.; Linder, M. E. und Deschenes, R. J. (2002) Identification of a Ras palmitoyltransferase in Saccharomyces cerevisiae. *J. Biol. Chem.,* 277(43), 41268 - 41273.

Lodge, J. K.; Jackson-Machelski, E.; Higgins, M.; McWherter, C. A.; Sikorski, J. A.; Devadas, B. und Gordon, J. I. (1998) Genetic and biochemical studies establish that the fungicidal effect of a fully depeptidized inhibitor of Cryptococcus neoformans myristoyl-CoA:protein N-myristoyltransferase (Nmt) is Nmt-dependent. *J. Biol. Chem.,* 273(20), 12482 - 12491.

Lorenzo, M. M. und Blasco, R. (1998) PCR-based method for the introduction of mutations in genes cloned and expressed in vaccinia virus. *Biotechniques,* 24(2), 308 - 313.

Lu, J. Y.; Verkruyse, L. A. und Hofmann, S. L. (1996) Lipid thioesters derived from acylated proteins accumulate in infantile neuronal ceroid lipofuscinosis: correction of the defect in lymphoblasts by recombinant palmitoyl-protein thioesterase. *Proc. Natl. Acad. Sci. U. S. A,* 93(19), 10046 - 10050.

Ludwig, K.; Baljinnyam, B.; Herrmann, A. und Bottcher, C. (2003) The 3D structure of the fusion primed Sendai F-protein determined by electron cryomicroscopy. *EMBO J.,* 22(15), 3761 - 3771.

Lyles, D. S. (1979) Glycoproteins of Sendai virus are transmembrane proteins. *Proc. Natl. Acad. Sci. U. S. A,* 76(11), 5621 - 5625.

Lyu, P. C.; Liff, M. I.; Marky, L. A. und Kallenbach, N. R. (1990) Side chain contributions to the stability of alpha-helical structure in peptides. *Science,* 250(4981), 669 - 673.

Lyu, P. C.; Sherman, J. C.; Chen, A. und Kallenbach, N. R. (1991) Alpha-helix stabilization by natural and unnatural amino acids with alkyl side chains. *Proc. Natl. Acad. Sci. U. S. A,* 88(12), 5317 - 5320.

Mack, D.; Berger, M.; Schmidt, M. F. und Kruppa, J. (1987) Cell-free fatty acylation of microsomal integrated and detergent-solubilized glycoprotein of vesicular stomatitis virus. *J. Biol. Chem.,* 262(9), 4297 - 4302.

Mack, D. und Kruppa, J. (1988) Fatty acid acylation at the single cysteine residue in the cytoplasmic domain of the glycoprotein of vesicular-stomatitis virus. *Biochem. J.,* 256(3), 1021 - 1027.

MacKenzie, K. R.; Prestegard, J. H. und Engelman, D. M. (1997) A transmembrane helix dimer: structure and implications. *Science,* 276(5309), 131 - 133.

Mackett, M. und Smith, G. L. (1986) Vaccinia virus expression vectors. *J. Gen. Virol.,* 67 (Pt 10)2067 - 2082.

Magee, A. I. und Schlesinger, M. J. (1982) Fatty acid acylation of eucaryotic cell membrane proteins. *Biochim. Biophys. Acta,* 694(3), 279 - 289.

Magee, A. I.; Koyama, A. H.; Malfer, C.; Wen, D. und Schlesinger, M. J. (1984) Release of fatty acids from virus glycoproteins by hydroxylamine. *Biochim. Biophys. Acta,* 798(2), 156 - 166.

Magee, A. I.; Gutierrez, L.; McKay, I. A.; Marshall, C. J. und Hall, A. (1987) Dynamic fatty acylation of p21N-ras. *EMBO J.,* 6(11), 3353 - 3357.

Magee, A. I. und Parmryd, I. (2003) Detergent-resistant membranes and the protein composition of lipid rafts. *Genome Biol.,* 4(11), 234 -

Mandel, M. und Higa, A. (1970) Calcium-dependent bacteriophage DNA infection. *J. Mol. Biol.,* 53(1), 159 - 162.

Mann, R. K. und Beachy, P. A. (2000) Cholesterol modification of proteins. *Biochim. Biophys. Acta,* 1529(1-3), 188 - 202.

Marc, D.; Drugeon, G.; Haenni, A. L.; Girard, M. und van der, W. S. (1989) Role of myristoylation of poliovirus capsid protein VP4 as determined by site-directed mutagenesis of its N-terminal sequence. *EMBO J.,* 8(9), 2661 - 2668.

Markwell, M. A. und Fox, C. F. (1980) Protein-protein interactions within paramyxoviruses identified by native disulfide bonding or reversible chemical cross-linking. *J. Virol.,* 33(1), 152 - 166.

Markwell, M. A.; Svennerholm, L. und Paulson, J. C. (1981) Specific gangliosides function as host cell receptors for Sendai virus. *Proc. Natl. Acad. Sci. U. S. A,* 78(9), 5406 - 5410.

Massiah, M. A.; Starich, M. R.; Paschall, C.; Summers, M. F.; Christensen, A. M. und Sundquist, W. I. (1994) Three-dimensional structure of the human immunodeficiency virus type 1 matrix protein. *J. Mol. Biol.,* 244(2), 198 - 223.

Matthews, T. J.; Wild, C.; Chen, C. H.; Bolognesi, D. P. und Greenberg, M. L. (1994) Structural rearrangements in the transmembrane glycoprotein after receptor binding. *Immunol. Rev.,* 14093 - 104.

Maurer-Stroh, S.; Washietl, S. und Eisenhaber, F. (2003) Protein prenyltransferases: anchor size, pseudogenes and parasites. *Biol. Chem.,* 384(7), 977 - 989.

McCabe, J. B. und Berthiaume, L. G. (1999) Functional roles for fatty acylated amino-terminal domains in subcellular localization. *Mol. Biol. Cell,* 10(11), 3771 - 3786.

McIlhinney, R. A. (1995) Characterization and cellular localization of human myristoyl-COA: protein N-myristoyltransferase. *Biochem. Soc. Trans.,* 23(3), 549 - 553.

McIlhinney, R. A. und McGlone, K. (1996) Immunocytochemical characterization and subcellular localization of human myristoyl-CoA: protein N-myristoyltransferase in HeLa cells. *Exp. Cell Res.,* 223(2), 348 - 356.

McIlhinney, R. A. (1998) Membrane targeting via protein N-myristoylation. *Methods Mol. Biol.,* 88211 - 225.

McWherter, C. A.; Rocque, W. J.; Zupec, M. E.; Freeman, S. K.; Brown, D. L.; Devadas, B.; Getman, D. P.; Sikorski, J. A. und Gordon, J. I. (1997) Scanning alanine mutagenesis and de-peptidization of a Candida albicans myristoyl-CoA:protein N-myristoyltransferase octapeptide substrate reveals three elements critical for molecular recognition. *J. Biol. Chem.,* 272(18), 11874 - 11880.

Mehta, R. K. und Singh, J. (1999) Bridge-overlap-extension PCR method for constructing chimeric genes. *Biotechniques,* 26(6), 1082 - 1086.

Melikyan, G. B. und Chernomordik, L. V. (1997) Membrane rearrangements in fusion mediated by viral proteins. *Trends Microbiol.,* 5(9), 349 - 355.

Melikyan, G. B.; Jin, H.; Lamb, R. A. und Cohen, F. S. (1997) The role of the cytoplasmic tail region of influenza virus hemagglutinin in formation and growth of fusion pores. *Virology,* 235(1), 118 - 128.

Melikyan, G. B.; Lin, S.; Roth, M. G. und Cohen, F. S. (1999) Amino acid sequence requirements of the transmembrane and cytoplasmic domains of influenza virus hemagglutinin for viable membrane fusion. *Mol. Biol. Cell,* 10(6), 1821 - 1836.

Melkonian, K. A.; Ostermeyer, A. G.; Chen, J. Z.; Roth, M. G. und Brown, D. A. (1999) Role of lipid modifications in targeting proteins to detergent-resistant membrane rafts. Many raft proteins are acylated, while few are prenylated. *J. Biol. Chem.,* 274(6), 3910 - 3917.

Meng, L.; Sin, N. und Crews, C. M. (1998) The antiproliferative agent didemnin B uncompetitively inhibits palmitoyl protein thioesterase. *Biochemistry,* 37(29), 10488 - 10492.

Micchelli, C. A.; The, I.; Selva, E.; Mogila, V. und Perrimon, N. (2002) Rasp, a putative transmembrane acyltransferase, is required for Hedgehog signaling. *Development,* 129(4), 843 - 851.

Miceli, M. C. und Parnes, J. R. (1993) Role of CD4 and CD8 in T cell activation and differentiation. *Adv. Immunol.,* 5359 - 122.

Michel, J. B. und Michel, T. (1997) The role of palmitoyl-protein thioesterase in the palmitoylation of endothelial nitric oxide synthase. *FEBS Lett.,* 405(3), 356 - 362.

Milligan, G.; Parenti, M. und Magee, A. I. (1995) The dynamic role of palmitoylation in signal transduction. *Trends Biochem. Sci.,* 20(5), 181 - 187.

Milligan, G.; Grassie, M. A.; Wise, A.; MacEwan, D. J.; Magee, A. I. und Parenti, M. (1995) G-protein palmitoylation: regulation and functional significance. *Biochem. Soc. Trans.,* 23(3), 583 - 587.

Miura, N.; Soe, G.; Uchida, T. und Okada, Y. (1993) Assessment of membrane fusion efficiency and its use for distinguishing epitopes on the fusion (F) protein of Sendai virus (HVJ). *Biochem. Biophys. Res. Commun.,* 194(3), 1051 - 1057.

Molenaar, C. M.; Prange, R. und Gallwitz, D. (1988) A carboxyl-terminal cysteine residue is required for palmitic acid binding and biological activity of the ras-related yeast YPT1 protein. *EMBO J.,* 7(4), 971 - 976.

Molinari, M. und Helenius, A. (2002) Analyzing cotranslational protein folding and disulfide formation by diagonal sodium dodecyl sulfate-polyacrylamide gel electrophoresis. *Methods Enzymol.,* 34835 - 42.

Mollner, S.; Ferreira, P.; Beck, K. und Pfeuffer, T. (1998) Nonenzymatic palmitoylation at Cys 3 causes extra-activation of the alpha-subunit of the stimulatory GTP-binding protein Gs. *Eur. J. Biochem.,* 257(1), 236 - 241.

Moody, A. M.; Xiong, Y.; Chang, H. C. und Reinherz, E. L. (2001) The CD8alphabeta co-receptor on double-positive thymocytes binds with differing affinities to the products of distinct class I MHC loci. *Eur. J. Immunol.,* 31(9), 2791 - 2799.

Moody, A. M.; North, S. J.; Reinhold, B.; Van Dyken, S. J.; Rogers, M. E.; Panico, M.; Dell, A.; Morris, H. R.; Marth, J. D. und Reinherz, E. L. (2003) Sialic acid capping of CD8beta core 1-O-glycans controls thymocyte-major histocompatibility complex class I interaction. *J. Biol. Chem.,* 278(9), 7240 - 7246.

Moorman, J. P. (2003) Viral characteristics of influenza. *South. Med. J.,* 96(8), 758 - 761.

Morrison, T. G. und Simpson, D. (1980) Synthesis, stability, and cleavage of Newcastle disease virus glycoproteins in the absence of glycosylation. *J. Virol.,* 36(1), 171 - 180.

Morrison, T. G. (1988) Structure, function, and intracellular processing of paramyxovirus membrane proteins. *Virus Res.,* 10(2-3), 113 - 135.

Moscufo, N.; Gallina, A.; Schiavo, G.; Montecucco, C. und Tomasi, M. (1987) Multiple lipid interactions of the Sendai virus fusogenic protein. *J. Biol. Chem.,* 262(24), 11490 - 11496.

Moss, B. und Flexner, C. (1987) Vaccinia virus expression vectors. *Annu. Rev. Immunol.,* 5305 - 324.

Moss, B.; Elroy-Stein, O.; Mizukami, T.; Alexander, W. A. und Fuerst, T. R. (1990) Product review. New mammalian expression vectors. *Nature,* 348(6296), 91 - 92.

Mottet, G.; Tuffereau, C. und Roux, L. (1986) Reduced temperature can block different glycoproteins at different steps during transport to the plasma membrane. *J. Gen. Virol.,* 67 (Pt 9)2029 - 2035.

Mottet, G.; Portner, A. und Roux, L. (1986) Drastic immunoreactivity changes between the immature and mature forms of the Sendai virus HN and F0 glycoproteins. *J. Virol.,* 59(1), 132 - 141.

Mumby, S. M.; Kleuss, C. und Gilman, A. G. (1994) Receptor regulation of G-protein palmitoylation. *Proc. Natl. Acad. Sci. U. S. A,* 91(7), 2800 - 2804.

Murray, D.; Ben Tal, N.; Honig, B. und McLaughlin, S. (1997) Electrostatic interaction of myristoylated proteins with membranes: simple physics, complicated biology. *Structure.,* 5(8), 985 - 989.

Murray, D.; Hermida-Matsumoto, L.; Buser, C. A.; Tsang, J.; Sigal, C. T.; Ben Tal, N.; Honig, B.; Resh, M. D. und McLaughlin, S. (1998) Electrostatics and the membrane association of Src: theory and experiment. *Biochemistry,* 37(8), 2145 - 2159.

Muszbek, L. und Laposata, M. (1993) Covalent modification of proteins by arachidonate and eicosapentaenoate in platelets. *J. Biol. Chem.,* 268(24), 18243 - 18248.

Naeve, C. W. und Williams, D. (1990) Fatty acids on the A/Japan/305/57 influenza virus hemagglutinin have a role in membrane fusion. *EMBO J.,* 9(12), 3857 - 3866.

Nagai, Y. und Klenk, H. D. (1977) Activation of precursors to both glycoporteins of Newcastle disease virus by proteolytic cleavage. *Virology,* 77(1), 125 - 134.

Naim, H. Y.; Amarneh, B.; Ktistakis, N. T. und Roth, M. G. (1992) Effects of altering palmitylation sites on biosynthesis and function of the influenza virus hemagglutinin. *J. Virol.,* 66(12), 7585 - 7588.

Naim, H. Y. und Roth, M. G. (1993) Basis for selective incorporation of glycoproteins into the influenza virus envelope. *J. Virol.,* 67(8), 4831 - 4841.

Nakamura, F.; Strittmatter, P. und Strittmatter, S. M. (1998) GAP-43 augmentation of G protein-mediated signal transduction is regulated by both phosphorylation and palmitoylation. *J. Neurochem.,* 70(3), 983 - 992.

Navarro-Lerida, I.; Alvarez-Barrientos, A.; Gavilanes, F. und Rodriguez-Crespo, I. (2002) Distance-dependent cellular palmitoylation of de-novo-designed sequences and their translocation to plasma membrane subdomains. *J. Cell Sci.,* 115(Pt 15), 3119 - 3130.

Nestorowicz, A.; Laver, G. und Jackson, D. C. (1985) Antigenic determinants of influenza virus haemagglutinin. X. A comparison of the physical and antigenic properties of monomeric and trimeric forms. *J. Gen. Virol.,* 66 (Pt 8)1687 - 1695.

Ng, G. Y.; George, S. R.; Zastawny, R. L.; Caron, M.; Bouvier, M.; Dennis, M. und O'Dowd, B. F. (1993) Human serotonin1B receptor expression in Sf9 cells: phosphorylation, palmitoylation, and adenylyl cyclase inhibition. *Biochemistry,* 32(43), 11727 - 11733.

Ng, G. Y.; O'Dowd, B. F.; Caron, M.; Dennis, M.; Brann, M. R. und George, S. R. (1994) Phosphorylation and palmitoylation of the human D2L dopamine receptor in Sf9 cells. *J. Neurochem.,* 63(5), 1589 - 1595.

Ng, G. Y.; Mouillac, B.; George, S. R.; Caron, M.; Dennis, M.; Bouvier, M. und O'Dowd, B. F. (1994) Desensitization, phosphorylation and palmitoylation of the human dopamine D1 receptor. *Eur. J. Pharmacol.,* 267(1), 7 - 19.

Novick, S. L. und Hoekstra, D. (1988) Membrane penetration of Sendai virus glycoproteins during the early stages of fusion with liposomes as determined by hydrophobic photoaffinity labeling. *Proc. Natl. Acad. Sci. U. S. A,* 85(20), 7433 - 7437.

Nur-E-Kamal MS; Reverey, H.; Ponimaskin, E.; Schroth-Diez, B.; Herrmann, A. und Schmidt, M. F. (1997) Targeted delivery of human neurofibromin and c-Raf-1 mutants to the cytoplasmic membrane by use of the influenza virus hemagglutinin. *Biochim. Biophys. Acta,* 1338(2), 233 - 243.

O'Brien, P. J.; St Jules, R. S.; Reddy, T. S.; Bazan, N. G. und Zatz, M. (1987) Acylation of disc membrane rhodopsin may be nonenzymatic. *J. Biol. Chem.,* 262(11), 5210 - 5215.

O'Dowd, B. F.; Hnatowich, M.; Caron, M. G.; Lefkowitz, R. J. und Bouvier, M. (1989) Palmitoylation of the human beta 2-adrenergic receptor. Mutation of Cys341 in the carboxyl tail leads to an uncoupled nonpalmitoylated form of the receptor. *J. Biol. Chem.,* 264(13), 7564 - 7569.

O'Neil, K. T. und DeGrado, W. F. (1990) A thermodynamic scale for the helix-forming tendencies of the commonly occurring amino acids. *Science,* 250(4981), 646 - 651.

Olson, E. N.; Glaser, L. und Merlie, J. P. (1984) Alpha and beta subunits of the nicotinic acetylcholine receptor contain covalently bound lipid. *J. Biol. Chem.,* 259(9), 5364 - 5367.

Olson, E. N.; Towler, D. A. und Glaser, L. (1985) Specificity of fatty acid acylation of cellular proteins. *J. Biol. Chem.,* 260(6), 3784 - 3790.

Olson, E. N. und Spizz, G. (1986) Fatty acylation of cellular proteins. Temporal and subcellular differences between palmitate and myristate acylation. *J. Biol. Chem.,* 261(5), 2458 - 2466.

Omary, M. B. und Trowbridge, I. S. (1981) Biosynthesis of the human transferrin receptor in cultured cells. *J. Biol. Chem.,* 256(24), 12888 - 12892.

Omary, M. B. und Trowbridge, I. S. (1981) Covalent binding of fatty acid to the transferrin receptor in cultured human cells. *J. Biol. Chem.,* 256(10), 4715 - 4718.

Ostermann, J.; Orci, L.; Tani, K.; Amherdt, M.; Ravazzola, M.; Elazar, Z. und Rothman, J. E. (1993) Stepwise assembly of functionally active transport vesicles. *Cell,* 75(5), 1015 - 1025.

Overbaugh, J.; Miller, A. D. und Eiden, M. V. (2001) Receptors and entry cofactors for retroviruses include single and multiple transmembrane-spanning proteins as well as newly described glycophosphatidylinositol-anchored and secreted proteins. *Microbiol. Mol. Biol. Rev.,* 65(3), 371 - 89, table.

Oxford, J. S.; Hockley, D. J.; Heath, T. D. und Patterson, S. (1981) The interaction of influenza virus haemagglutinin with phospholipid vesicles - morphological and immunological studies. *J. Gen. Virol.,* 52(Pt 2), 329 - 343.

Pace, C. N. und Scholtz, J. M. (1998) A helix propensity scale based on experimental studies of peptides and proteins. *Biophys. J.,* 75(1), 422 - 427.

Paige, L. A.; Nadler, M. J.; Harrison, M. L.; Cassady, J. M. und Geahlen, R. L. (1993) Reversible palmitoylation of the protein-tyrosine kinase p56lck. *J. Biol. Chem.,* 268(12), 8669 - 8674.

Papoucheva E, Dumuis A, Sebben M, Richter DW, Ponimaskin EG. (2004) The 5-hydroxytryptamine(1A) receptor is stably palmitoylated, and acylation is critical for communication of receptor with G_i protein. *J. Biol. Chem.,* 279(5), 3280 - 3291.

Parat, M. O. und Fox, P. L. (2001) Palmitoylation of caveolin-1 in endothelial cells is post-translational but irreversible. *J. Biol. Chem.,* 276(19), 15776 - 15782.

Parenti, M.; Vigano, M. A.; Newman, C. M.; Milligan, G. und Magee, A. I. (1993) A novel N-terminal motif for palmitoylation of G-protein alpha subunits. *Biochem. J.,* 291 (Pt 2)349 - 353.

Parnes, J. R. (1989) Molecular biology and function of CD4 and CD8. *Adv. Immunol.,* 44265 - 311.

Paterson, R. G.; Hiebert, S. W. und Lamb, R. A. (1985) Expression at the cell surface of biologically active fusion and hemagglutinin/neuraminidase proteins of the paramyxovirus simian virus 5 from cloned cDNA. *Proc. Natl. Acad. Sci. U. S. A,* 82(22), 7520 - 7524.

Paterson, R. G. und Lamb, R. A. (1987) Ability of the hydrophobic fusion-related external domain of a paramyxovirus F protein to act as a membrane anchor. *Cell,* 48(3), 441 - 452.

Patterson, S. I. (2002) Posttranslational protein S-palmitoylation and the compartmentalization of signaling molecules in neurons. *Biol. Res.,* 35(2), 139 - 150.

Peisajovich, S. G.; Epand, R. F.; Epand, R. M. und Shai, Y. (2002) Sendai virus N-terminal fusion peptide consists of two similar repeats, both of which contribute to membrane fusion. *Eur. J. Biochem.,* 269(17), 4342 - 4350.

Peitzsch, R. M. und McLaughlin, S. (1993) Binding of acylated peptides and fatty acids to phospholipid vesicles: pertinence to myristoylated proteins. *Biochemistry,* 32(39), 10436 - 10443.

Pepinsky, R. B.; Zeng, C.; Wen, D.; Rayhorn, P.; Baker, D. P.; Williams, K. P.; Bixler, S. A.; Ambrose, C. M.; Garber, E. A.; Miatkowski, K.; Taylor, F. R.; Wang, E. A. und Galdes, A. (1998) Identification of a palmitic acid-modified form of human Sonic hedgehog. *J. Biol. Chem.,* 273(22), 14037 - 14045.

Percherancier, Y.; Lagane, B.; Planchenault, T.; Staropoli, I.; Altmeyer, R.; Virelizier, J. L.; Arenzana-Seisdedos, F.; Hoessli, D. C. und Bachelerie, F. (2003) HIV-1 entry into T-cells is not dependent on CD4 and CCR5 localization to sphingolipid-enriched, detergent-resistant, raft membrane domains. *J. Biol. Chem.,* 278(5), 3153 - 3161.

Pfanner, N. und Neupert, W. (1989) Transport of proteins into mitochondria. *Curr. Opin. Cell Biol.,* 1(4), 624 - 629.

Pfanner, N.; Orci, L.; Glick, B. S.; Amherdt, M.; Arden, S. R.; Malhotra, V. und Rothman, J. E. (1989) Fatty acyl-coenzyme A is required for budding of transport vesicles from Golgi cisternae. *Cell,* 59(1), 95 - 102.

Pfanner, N.; Glick, B. S.; Arden, S. R. und Rothman, J. E. (1990) Fatty acylation promotes fusion of transport vesicles with Golgi cisternae. *J. Cell Biol.,* 110(4), 955 - 961.

Philipp, H. C.; Schroth, B.; Veit, M.; Krumbiegel, M.; Herrmann, A. und Schmidt, M. F. (1995) Assessment of fusogenic properties of influenza virus hemagglutinin deacylated by site-directed mutagenesis and hydroxylamine treatment. *Virology,* 210(1), 20 - 28.

Ponimaskin, E.; Veit, M. und Schmidt, M. F. (1994) Expression of the Sendai virus fusion protein in insect cells and characterization of its post-translational modifications. *J. Gen. Virol.,* 75 (Pt 5)1163 - 1167.

Ponimaskin, E. und Schmidt, M. F. (1995) Acylation of viral glycoproteins: structural requirements for palmitoylation of transmembrane proteins. *Biochem. Soc. Trans.,* 23(3), 565 - 568.

Ponimaskin, E.; Harteneck, C.; Schultz, G. und Schmidt, M. F. (1998) A cysteine-11 to serine mutant of G alpha12 impairs activation through the thrombin receptor. *FEBS Lett.,* 429(3), 370 - 374.

Ponimaskin, E. und Schmidt, M. F. (1998) Domain-structure of cytoplasmic border region is main determinant for palmitoylation of influenza virus hemagglutinin (H7). *Virology,* 249(2), 325 - 335.

Ponimaskin, E.; Behn, H.; Adarichev, V.; Voyno-Yasenetskaya, T. A.; Offermanns, S. und Schmidt, M. F. (2000) Acylation of Galpha(13) is important for its interaction with thrombin receptor, transforming activity and actin stress fiber formation. *FEBS Lett.,* 478(1-2), 173 - 177.

Ponimaskin, E.G.; Heine, M.; Joubert, L.; Sebben, M.; Bickmeyer, U.; Richter, D. W. und Dumuis, A. (2002) The 5-hydroxytryptamine(4a) receptor is palmitoylated at two different sites, and acylation is critically involved in regulation of receptor constitutive activity. *J. Biol. Chem.,* 277(4), 2534 - 2546.

Popik, W. und Alce, T. M. (2004) CD4 receptor localized to non-raft membrane microdomains supports HIV-1 entry. Identification of a novel raft localization marker in CD4. *J. Biol. Chem.,* 279(1), 704 - 712.

Porter, J. A.; Young, K. E. und Beachy, P. A. (1996) Cholesterol modification of hedgehog signaling proteins in animal development. *Science,* 274(5285), 255 - 259.

Portincasa, P.; Conti, G. und Chezzi, C. (1992) Role of acylation of viral haemagglutinin during the influenza virus infectious cycle. *Res. Virol.,* 143(6), 401 - 406.

Poulin, L.; Evans, L. A.; Tang, S. B.; Barboza, A.; Legg, H.; Littman, D. R. und Levy, J. A. (1991) Several CD4 domains can play a role in human immunodeficiency virus infection in cells. *J. Virol.,* 65(9), 4893 - 4901.

Prabhakar, P.; Cheng, V. und Michel, T. (2000) A chimeric transmembrane domain directs endothelial nitric-oxide synthase palmitoylation and targeting to plasmalemmal caveolae. *J. Biol. Chem.,* 275(25), 19416 - 19421.

Pryciak, P. M. und Hartwell, L. H. (1996) AKR1 encodes a candidate effector of the G beta gamma complex in the Saccharomyces cerevisiae pheromone response pathway and contributes to control of both cell shape and signal transduction. *Mol. Cell Biol.,* 16(6), 2614 - 2626.

Qiao, H.; Pelletier, S. L.; Hoffman, L.; Hacker, J.; Armstrong, R. T. und White, J. M. (1998) Specific single or double proline substitutions in the "spring-loaded" coiled-coil region of the influenza hemagglutinin impair or abolish membrane fusion activity. *J. Cell Biol.,* 141(6), 1335 - 1347.

Quesnel, S. und Silvius, J. R. (1994) Cysteine-containing peptide sequences exhibit facile uncatalyzed transacylation and acyl-CoA-dependent acylation at the lipid bilayer interface. *Biochemistry,* 33(45), 13340 - 13348.

Raju, R. V. und Sharma, R. K. (1997) Demonstration and purification of a myristoyl-CoA binding protein from bovine cardiac muscle. *Life Sci.,* 60(23), 2145 - 2153.

Ramalho-Santos, J.; Nir, S.; Duzgunes, N.; de Carvalho, A. P. und de Lima, M. C. (1993) A common mechanism for influenza virus fusion activity and inactivation. *Biochemistry,* 32(11), 2771 - 2779.

Rapaport, D. und Shai, Y. (1994) Interaction of fluorescently labeled analogues of the amino-terminal fusion peptide of Sendai virus with phospholipid membranes. *J. Biol. Chem.,* 269(21), 15124 - 15131.

Rasmussen, J. T.; Borchers, T. und Knudsen, J. (1990) Comparison of the binding affinities of acyl-CoA-binding protein and fatty-acid-binding protein for long-chain acyl-CoA esters. *Biochem. J.,* 265(3), 849 - 855.

Reschner, A.; Moretta, A.; Landmann, R.; Heberer, M.; Spagnoli, G. C. und Padovan, E. (2003) The ester-bonded palmitoyl side chains of Pam3CysSerLys4 lipopeptide account for its powerful adjuvanticity to HLA class I-restricted CD8+ T lymphocytes. *Eur. J. Immunol.,* 33(7), 2044 - 2052.

Resh, M. D. (1994) Myristylation and palmitylation of Src family members: the fats of the matter. *Cell,* 76(3), 411 - 413.

Resh, M. D. (1996) Regulation of cellular signalling by fatty acid acylation and prenylation of signal transduction proteins. *Cell Signal.,* 8(6), 403 - 412.

Resh, M. D. (1999) Fatty acylation of proteins: new insights into membrane targeting of myristoylated and palmitoylated proteins. *Biochim. Biophys. Acta,* 1451(1), 1 - 16.

Resh, M. D. (2004) Membrane targeting of lipid modified signal transduction proteins. *Subcell. Biochem.,* 37217 - 232.

Resh, M. D. (2004) A myristoyl switch regulates membrane binding of HIV-1 Gag. *Proc. Natl. Acad. Sci. U. S. A,* 101(2), 417 - 418.

Reverey, H.; Veit, M.; Ponimaskin, E. und Schmidt, M. F. (1996) Differential fatty acid selection during biosynthetic S-acylation of a transmembrane protein (HEF) and other proteins in insect cells (Sf9) and in mammalian cells (CV1). *J. Biol. Chem.,* 271(39), 23607 - 23610.

Rhee, S. S. und Hunter, E. (1987) Myristylation is required for intracellular transport but not for assembly of D-type retrovirus capsids. *J. Virol.,* 61(4), 1045 - 1053.

Rizzolo, L. J. und Kornfeld, R. (1988) Post-translational protein modification in the endoplasmic reticulum. Demonstration of fatty acylase and deoxymannojirimycin-sensitive alpha-mannosidase activities. *J. Biol. Chem.,* 263(19), 9520 - 9525.

Robbins, S. M.; Quintrell, N. A. und Bishop, J. M. (1995) Myristoylation and differential palmitoylation of the HCK protein-tyrosine kinases govern their attachment to membranes and association with caveolae. *Mol. Cell Biol.,* 15(7), 3507 - 3515.

Robinson, L. J. und Michel, T. (1995) Mutagenesis of palmitoylation sites in endothelial nitric oxide synthase identifies a novel motif for dual acylation and subcellular targeting. *Proc. Natl. Acad. Sci. U. S. A,* 92(25), 11776 - 11780.

Robinson, L. J.; Busconi, L. und Michel, T. (1995) Agonist-modulated palmitoylation of endothelial nitric oxide synthase. *J. Biol. Chem.,* 270(3), 995 - 998.

Rose, J. K.; Adams, G. A. und Gallione, C. J. (1984) The presence of cysteine in the cytoplasmic domain of the vesicular stomatitis virus glycoprotein is required for palmitate addition. *Proc. Natl. Acad. Sci. U. S. A,* 81(7), 2050 - 2054.

Rose, J. K. und Doms, R. W. (1988) Regulation of protein export from the endoplasmic reticulum. *Annu. Rev. Cell Biol.,* 4257 - 288.

Rosendal, J.; Ertbjerg, P. und Knudsen, J. (1993) Characterization of ligand binding to acyl-CoA-binding protein. *Biochem. J.,* 290 (Pt 2)321 - 326.

Rost, B.; Casadio, R. und Fariselli, P. (1996) Refining neural network predictions for helical transmembrane proteins by dynamic programming. *Proc. Int. Conf. Intell. Syst. Mol. Biol.,* 4192 - 200.

Roth, A. F.; Feng, Y.; Chen, L. und Davis, N. G. (2002) The yeast DHHC cysteine-rich domain protein Akr1p is a palmitoyl transferase. *J. Cell Biol.,* 159(1), 23 - 28.

Rousso, I.; Mixon, M. B.; Chen, B. K. und Kim, P. S. (2000) Palmitoylation of the HIV-1 envelope glycoprotein is critical for viral infectivity. *Proc. Natl. Acad. Sci. U. S. A,* 97(25), 13523 - 13525.

Rudd, C. E. (1990) CD4, CD8 and the TCR-CD3 complex: a novel class of protein-tyrosine kinase receptor. *Immunol. Today,* 11(11), 400 - 406.

Rudnick, D. A.; McWherter, C. A.; Adams, S. P.; Ropson, I. J.; Duronio, R. J. und Gordon, J. I. (1990) Structural and functional studies of Saccharomyces cerevisiae myristoyl-CoA:protein N-myristoyltransferase produced in Escherichia coli. Evidence for an acyl-enzyme intermediate. *J. Biol. Chem.,* 265(22), 13370 - 13378.

Sambrook, J., Fritsch, E. F., and Maniatis, T. (1989) Molecular Cloning: A Laboratory Manual. 2nd Ed.., Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Sanger, F.; Nicklen, S. und Coulson, A. R. (1977) DNA sequencing with chain-terminating inhibitors. *Proc. Natl. Acad. Sci. U. S. A,* 74(12), 5463 - 5467.

Sarkar, D. P. und Blumenthal, R. (1987) The role of the target membrane structure in fusion with Sendai virus. *Membr. Biochem.,* 7(4), 231 - 247.

Sato, S. B.; Kawasaki, K. und Ohnishi, S. (1983) Hemolytic activity of influenza virus hemagglutinin glycoproteins activated in mildly acidic environments. *Proc. Natl. Acad. Sci. U. S. A,* 80(11), 3153 - 3157.

Scheid, A. und Choppin, P. W. (1974) Identification of biological activities of paramyxovirus glycoproteins. Activation of cell fusion, hemolysis, and infectivity of proteolytic cleavage of an inactive precursor protein of Sendai virus. *Virology,* 57(2), 475 - 490.

Scheid, A. und Choppin, P. W. (1977) Two disulfide-linked polypeptide chains constitute the active F protein of paramyxoviruses. *Virology,* 80(1), 54 - 66.

Scheiffele, P.; Roth, M. G. und Simons, K. (1997) Interaction of influenza virus haemagglutinin with sphingolipid-cholesterol membrane domains via its transmembrane domain. *EMBO J.,* 16(18), 5501 - 5508.

Schlesinger, M. J.; Magee, A. I. und Schmidt, M. F. (1980) Fatty acid acylation of proteins in cultured cells. *J. Biol. Chem.,* 255(21), 10021 - 10024.

Schlesinger, M. J. und Malfer, C. (1982) Cerulenin blocks fatty acid acylation of glycoproteins and inhibits vesicular stomatitis and Sindbis virus particle formation. *J. Biol. Chem.,* 257(17), 9887 - 9890.

Schlesinger, M. J. (1983) Fatty acid acylation of eukaryotic cell proteins. *Methods Enzymol.,* 96795 - 801.

Schmidt, M.; Schmidt, M. F. und Rott, R. (1988) Chemical identification of cysteine as palmitoylation site in a transmembrane protein (Semliki Forest virus E1). *J. Biol. Chem.,* 263(35), 18635 - 18639.

Schmidt, M. F. und Schlesinger, M. J. (1979) Fatty acid binding to vesicular stomatitis virus glycoprotein: a new type of post-translational modification of the viral glycoprotein. *Cell,* 17(4), 813 - 819.

Schmidt, M. F.; Bracha, M. und Schlesinger, M. J. (1979) Evidence for covalent attachment of fatty acids to Sindbis virus glycoproteins. *Proc. Natl. Acad. Sci. U. S. A,* 76(4), 1687 - 1691.

Schmidt, M. F. und Schlesinger, M. J. (1980) Relation of fatty acid attachment to the translation and maturation of vesicular stomatitis and Sindbis virus membrane glycoproteins. *J. Biol. Chem.,* 255(8), 3334 - 3339.

Schmidt, M. F. (1982) Acylation of viral spike glycoproteins: a feature of enveloped RNA viruses. *Virology,* 116(1), 327 - 338.

Schmidt, M. F. (1983) Fatty acid binding: a new kind of posttranslational modification of membrane proteins. *Curr. Top. Microbiol. Immunol.,* 102101 - 129.

Schmidt, M. F. (1984) The transfer of myristic and other fatty acids on lipid and viral protein acceptors in cultured cells infected with Semliki Forest and influenza virus. *EMBO J.,* 3(10), 2295 - 2300.

Schmidt, M. F. und Lambrecht, B. (1985) On the structure of the acyl linkage and the function of fatty acyl chains in the influenza virus haemagglutinin and the glycoproteins of Semliki Forest virus. *J. Gen. Virol.,* 66 (Pt 12)2635 - 2647.

Schmidt, M. F. (1989) Fatty acylation of proteins. *Biochim. Biophys. Acta,* 988(3), 411 - 426.

Schmidt, M. F. und Burns, G. R. (1989) Solubilization of protein fatty acyltransferase from placental membranes and cell-free acyl transfer on to exogenous and endogenous acceptors. *Biochem. Soc. Trans.,* 17(5), 859 - 861.

Schmidt, M. F. und Burns, G. R. (1989) Hydrophobic modifications of membrane proteins by palmitoylation in vitro. *Biochem. Soc. Trans.,* 17(4), 625 - 626.

Schmidt, M. F. und Burns, G. R. (1991) On the enzymes which make "fatty proteins". *Behring Inst. Mitt.,* (89), 185 - 197.

Schmidt, M. F.; McIlhinney, R. A. und Burns, G. R. (1995) Palmitoylation of endogenous and viral acceptor proteins by fatty acyltransferase (PAT) present in erythrocyte ghosts and in placental membranes. *Biochim. Biophys. Acta,* 1257(3), 205 - 213.

Schroth-Diez, B.; Ponimaskin, E.; Reverey, H.; Schmidt, M. F. und Herrmann, A. (1998) Fusion activity of transmembrane and cytoplasmic domain chimeras of the influenza virus glycoprotein hemagglutinin. *J. Virol.,* 72(1), 133 - 141.

Schroth-Diez, B.; Ludwig, K.; Baljinnyam, B.; Kozerski, C.; Huang, Q. und Herrmann, A. (2000) The role of the transmembrane and of the intraviral domain of glycoproteins in membrane fusion of enveloped viruses. *Biosci. Rep.,* 20(6), 571 - 595.

Schroth, B.; Philipp, H. C.; Veit, M.; Schmidt, M. F. und Herrmann, A. (1996) Deacylation of influenza virus hemagglutinin does not affect the kinetics of low pH induced membrane fusion. *Pflugers Arch.,* 431(6 Suppl 2), R257 - R258.

Schultz, A. M. und Rein, A. (1989) Unmyristylated Moloney murine leukemia virus Pr65gag is excluded from virus assembly and maturation events. *J. Virol.,* 63(5), 2370 - 2373.

Schweizer, A.; Rohrer, J. und Kornfeld, S. (1995) Determination of the structural requirements for palmitoylation of p63. *J. Biol. Chem.,* 270(16), 9638 - 9644.

Schweizer, A.; Kornfeld, S. und Rohrer, J. (1996) Cysteine34 of the cytoplasmic tail of the cation-dependent mannose 6-phosphate receptor is reversibly palmitoylated and required for normal trafficking and lysosomal enzyme sorting. *J. Cell Biol.,* 132(4), 577 - 584.

Schweizer, A.; Loffler, B. M. und Rohrer, J. (1999) Palmitoylation of the three isoforms of human endothelin-converting enzyme-1. *Biochem. J.,* 340 (Pt 3)649 - 656.

Sechoy, O.; Philippot, J. R. und Bienvenue, A. (1987) F protein-F protein interaction within the Sendai virus identified by native bonding or chemical cross-linking. *J. Biol. Chem.,* 262(24), 11519 - 11523.

Sefton, B. M. und Buss, J. E. (1987) The covalent modification of eukaryotic proteins with lipid. *J. Cell Biol.,* 104(6), 1449 - 1453.

Shah, N. K.; Sharma, M.; Kirkpatrick, A.; Ramshaw, J. A. und Brodsky, B. (1997) Gly-Gly-containing triplets of low stability adjacent to a type III collagen epitope. *Biochemistry,* 36(19), 5878 - 5883.

Shahinian, S. und Silvius, J. R. (1995) Doubly-lipid-modified protein sequence motifs exhibit long-lived anchorage to lipid bilayer membranes. *Biochemistry,* 34(11), 3813 - 3822.

Shenoy-Scaria, A. M.; Gauen, L. K.; Kwong, J.; Shaw, A. S. und Lublin, D. M. (1993) Palmitylation of an amino-terminal cysteine motif of protein tyrosine kinases p56lck and p59fyn mediates interaction with glycosyl-phosphatidylinositol-anchored proteins. *Mol. Cell Biol.,* 13(10), 6385 - 6392.

Shenoy-Scaria, A. M.; Dietzen, D. J.; Kwong, J.; Link, D. C. und Lublin, D. M. (1994) Cysteine3 of Src family protein tyrosine kinase determines palmitoylation and localization in caveolae. *J. Cell Biol.,* 126(2), 353 - 363.

Shin, J.; Dunbrack, R. L., Jr.; Lee, S. und Strominger, J. L. (1991) Signals for retention of transmembrane proteins in the endoplasmic reticulum studied with CD4 truncation mutants. *Proc. Natl. Acad. Sci. U. S. A,* 88(5), 1918 - 1922.

Shmulevitz, M.; Salsman, J. und Duncan, R. (2003) Palmitoylation, membrane-proximal basic residues, and transmembrane glycine residues in the reovirus p10 protein are essential for syncytium formation. *J. Virol.,* 77(18), 9769 - 9779.

Shum, L.; Turck, C. W. und Derynck, R. (1996) Cysteines 153 and 154 of transmembrane transforming growth factor-alpha are palmitoylated and mediate cytoplasmic protein association. *J. Biol. Chem.,* 271(45), 28502 - 28508.

Sigal, C. T. und Resh, M. D. (1993) The ADP/ATP carrier is the 32-kilodalton receptor for an NH2-terminally myristylated src peptide but not for pp60src polypeptide. *Mol. Cell Biol.,* 13(5), 3084 - 3092.

Sigal, C. T.; Zhou, W.; Buser, C. A.; McLaughlin, S. und Resh, M. D. (1994) Amino-terminal basic residues of Src mediate membrane binding through electrostatic interaction with acidic phospholipids. *Proc. Natl. Acad. Sci. U. S. A,* 91(25), 12253 - 12257.

Sikorski, J. A.; Devadas, B.; Zupec, M. E.; Freeman, S. K.; Brown, D. L.; Lu, H. F.; Nagarajan, S.; Mehta, P. P.; Wade, A. C.; Kishore, N. S.; Bryant, M. L.; Getman, D. P.; McWherter, C. A. und Gordon, J. I. (1997) Selective peptidic and peptidomimetic inhibitors of Candida albicans myristoylCoA: protein N-myristoyltransferase: a new approach to antifungal therapy. *Biopolymers,* 43(1), 43 - 71.

Simons, K. und Garoff, H. (1980) The budding mechanisms of enveloped animal viruses. *J. Gen. Virol.,* 50(1), 1 - 21.

Simons, K.; Garoff, H. und Helenius, A. (1982) How an animal virus gets into and out of its host cell. *Sci. Am.,* 246(2), 58 - 66.

Simons, K. und Toomre, D. (2000) Lipid rafts and signal transduction. *Nat. Rev. Mol. Cell Biol.,* 1(1), 31 - 39.

Skehel, J. J. und Wiley, D. C. (2000) Receptor binding and membrane fusion in virus entry: the influenza hemagglutinin. *Annu. Rev. Biochem.,* 69531 - 569.

Skene, J. H. und Virag, I. (1989) Posttranslational membrane attachment and dynamic fatty acylation of a neuronal growth cone protein, GAP-43. *J. Cell Biol.,* 108(2), 613 - 624.

Sleat, D. E.; Sohar, I.; Lackland, H.; Majercak, J. und Lobel, P. (1996) Rat brain contains high levels of mannose-6-phosphorylated glycoproteins including lysosomal enzymes and palmitoyl-protein thioesterase, an enzyme implicated in infantile neuronal lipofuscinosis. *J. Biol. Chem.,* 271(32), 19191 - 19198.

Smith, S. O. und Bormann, B. J. (1995) Determination of helix-helix interactions in membranes by rotational resonance NMR. *Proc. Natl. Acad. Sci. U. S. A,* 92(2), 488 - 491.

Smith, S. O.; Smith, C.; Shekar, S.; Peersen, O.; Ziliox, M. und Aimoto, S. (2002) Transmembrane interactions in the activation of the Neu receptor tyrosine kinase. *Biochemistry,* 41(30), 9321 - 9332.

Smotrys, J. E. und Linder, M. E. (2004) Palmitoylation of intracellular signaling proteins: regulation and function. *Annu. Rev. Biochem.,* 73559 - 587.

Soares, M. V.; Maini, M. K.; Beverley, P. C.; Salmon, M. und Akbar, A. N. (2000) Regulation of apoptosis and replicative senescence in CD8+ T cells from patients with viral infections. *Biochem. Soc. Trans.,* 28(2), 255 - 258.

Sol-Foulon, N.; Esnault, C.; Percherancier, Y.; Porrot, F.; Metais-Cunha, P.; Bachelerie, F. und Schwartz, O. (2004) The effects of HIV-1 Nef on CD4 surface expression and viral infectivity in lymphoid cells are independent of rafts. *J. Biol. Chem.,* 279(30), 31398 - 31408.

Solimena, M.; Dirkx, R., Jr.; Radzynski, M.; Mundigl, O. und De Camilli, P. (1994) A signal located within amino acids 1-27 of GAD65 is required for its targeting to the Golgi complex region. *J. Cell Biol.,* 126(2), 331 - 341.

Song, J.; Hirschman, J.; Gunn, K. und Dohlman, H. G. (1996) Regulation of membrane and subunit interactions by N-myristoylation of a G protein alpha subunit in yeast. *J. Biol. Chem.,* 271(34), 20273 - 20283.

Soyombo, A. A. und Hofmann, S. L. (1997) Molecular cloning and expression of palmitoyl-protein thioesterase 2 (PPT2), a homolog of lysosomal palmitoyl-protein thioesterase with a distinct substrate specificity. *J. Biol. Chem.,* 272(43), 27456 - 27463.

Spiro, R. G. (2002) Protein glycosylation: nature, distribution, enzymatic formation, and disease implications of glycopeptide bonds. *Glycobiology,* 12(4), 43R - 56R.

Sprent, J. und Schaefer, M. (1990) Antigen-presenting cells for CD8+ T cells. *Immunol. Rev.,* 117213 - 234.

Staggs, D. R.; Burton, D. W. und Deftos, L. J. (1996) Importance of liposome complexing volume in transfection optimization. *Biotechniques,* 21(5), 792, 784, 796, 798 -

Staufenbiel, M. (1987) Ankyrin-bound fatty acid turns over rapidly at the erythrocyte plasma membrane. *Mol. Cell Biol.,* 7(8), 2981 - 2984.

Staufenbiel, M. (1988) Fatty acids covalently bound to erythrocyte proteins undergo a differential turnover in vivo. *J. Biol. Chem.,* 263(27), 13615 - 13622.

Steegmaier, M.; Yang, B.; Yoo, J. S.; Huang, B.; Shen, M.; Yu, S.; Luo, Y. und Scheller, R. H. (1998) Three novel proteins of the syntaxin/SNAP-25 family. *J. Biol. Chem.,* 273(51), 34171 - 34179.

Stegmann, T.; White, J. M. und Helenius, A. (1990) Intermediates in influenza induced membrane fusion. *EMBO J.,* 9(13), 4231 - 4241.

Steinhauer, D. A.; Wharton, S. A.; Wiley, D. C. und Skehel, J. J. (1991) Deacylation of the hemagglutinin of influenza A/Aichi/2/68 has no effect on membrane fusion properties. *Virology,* 184(1), 445 - 448.

Stoffel, W.; Hillen, H.; Schroder, W. und Deutzmann, R. (1983) The primary structure of bovine brain myelin lipophilin (proteolipid apoprotein). *Hoppe Seylers. Z. Physiol Chem.,* 364(10), 1455 - 1466.

Stoffyn, P. und Folch-Pi, J. (1971) On the type of linkage binding fatty acids present in brain white matter proteolipid apoprotein. *Biochem. Biophys. Res. Commun.,* 44(1), 157 - 161.

Streuli, C. H. und Griffin, B. E. (1987) Myristic acid is coupled to a structural protein of polyoma virus and SV40. *Nature,* 326(6113), 619 - 622.

Stryer, L. (1995) Biochemistry. *W.H.Freeman & Co Ltd,* ISBN 978-0716720096.

Sugrue, R. J.; Belshe, R. B. und Hay, A. J. (1990) Palmitoylation of the influenza A virus M2 protein. *Virology,* 179(1), 51 - 56.

Sunaga, H.; Sugimoto, H.; Nagamachi, Y. und Yamashita, S. (1995) Purification and properties of lysophospholipase isoenzymes from pig gastric mucosa. *Biochem. J.,* 308 (Pt 2)551 - 557.

Sutter, G. und Moss, B. (1992) Nonreplicating vaccinia vector efficiently expresses recombinant genes. *Proc. Natl. Acad. Sci. U. S. A,* 89(22), 10847 - 10851.

Swarthout, J. T.; Lobo, S.; Farh, L.; Croke, M. R.; Greentree, W. K.; Deschenes, R. J. und Linder, M. E. (2005) DHHC9 and GCP16 constitute a human protein fatty acyltransferase with specificity for H- and N-Ras. *J. Biol. Chem.,* 280(35), 31141 - 31148.

Taipale, J. und Beachy, P. A. (2001) The Hedgehog and Wnt signalling pathways in cancer. *Nature,* 411(6835), 349 - 354.

Tatulian, S. A. und Tamm, L. K. (1996) Reversible pH-dependent conformational change of reconstituted influenza hemagglutinin. *J. Mol. Biol.,* 260(3), 312 - 316.

Tatulian, S. A. und Tamm, L. K. (2000) Secondary structure, orientation, oligomerization, and lipid interactions of the transmembrane domain of influenza hemagglutinin. *Biochemistry,* 39(3), 496 - 507.

ten Brinke, A.; Batenburg, J. J.; Gadella, B. M.; Haagsman, H. P.; Vaandrager, A. B. und van Golde, L. M. (2001) The juxtamembrane lysine and arginine residues of surfactant protein C precursor influence palmitoylation via effects on trafficking. *Am. J. Respir. Cell Mol. Biol.,* 25(2), 156 - 163.

ten Brinke, A.; van Golde, L. M. und Batenburg, J. J. (2002) Palmitoylation and processing of the lipopeptide surfactant protein C. *Biochim. Biophys. Acta,* 1583(3), 253 - 265.

ten Brinke, A.; Vaandrager, A. B.; Haagsman, H. P.; Ridder, A. N.; van Golde, L. M. und Batenburg, J. J. (2002) Structural requirements for palmitoylation of surfactant protein C precursor. *Biochem. J.,* 361(Pt 3), 663 - 671.

ten Brinke, A.; Posthuma, G.; Batenburg, J. J.; Haagsman, H. P.; Ridder, A. N.; van Golde, L. M. und Vaandrager, A. B. (2003) The transmembrane domain of surfactant protein C precursor determines the morphology of the induced membrane compartment in CHO cells. *Eur. J. Cell Biol.,* 82(6), 285 - 294.

Tendian, S. W.; Myszka, D. G.; Sweet, R. W.; Chaiken, I. M. und Brouillette, C. G. (1995) Interdomain communication of T-cell CD4 studied by absorbance and fluorescence difference spectroscopy measurements of urea-induced unfolding. *Biochemistry,* 34(19), 6464 - 6474.

Tomasi, M.; Pasti, C.; Manfrinato, C.; Dallocchio, F. und Bellini, T. (2003) Peptides derived from the heptad repeat region near the C-terminal of Sendai virus F protein bind the hemagglutinin-neuraminidase ectodomain. *FEBS Lett.,* 536(1-3), 56 - 60.

Topinka, J. R. und Bredt, D. S. (1998) N-terminal palmitoylation of PSD-95 regulates association with cell membranes and interaction with K+ channel Kv1.4. *Neuron,* 20(1), 125 - 134.

Torres, J.; Kukol, A. und Arkin, I. T. (2000) Use of a single glycine residue to determine the tilt and orientation of a transmembrane helix. A new structural label for infrared spectroscopy. *Biophys. J.,* 79(6), 3139 - 3143.

Torres, J.; Kukol, A. und Arkin, I. T. (2001) Mapping the energy surface of transmembrane helix-helix interactions. *Biophys. J.,* 81(5), 2681 - 2692.

Towler, D. A.; Adams, S. P.; Eubanks, S. R.; Towery, D. S.; Jackson-Machelski, E.; Glaser, L. und Gordon, J. I. (1987) Purification and characterization of yeast myristoyl CoA:protein N-myristoyltransferase. *Proc. Natl. Acad. Sci. U. S. A,* 84(9), 2708 - 2712.

Towler, D. A.; Gordon, J. I.; Adams, S. P. und Glaser, L. (1988) The biology and enzymology of eukaryotic protein acylation. *Annu. Rev. Biochem.,* 5769 - 99.

Townsend, L. E.; Agrawal, D.; Benjamins, J. A. und Agrawal, H. C. (1982) In vitro acylation of rat brain myelin proteolipid protein. *J. Biol. Chem.,* 257(16), 9745 - 9750.

Toyoda, T.; Sugimoto, H. und Yamashita, S. (1999) Sequence, expression in Escherichia coli, and characterization of lysophospholipase II. *Biochim. Biophys. Acta,* 1437(2), 182 - 193.

Tsurudome, M.; Gluck, R.; Graf, R.; Falchetto, R.; Schaller, U. und Brunner, J. (1992) Lipid interactions of the hemagglutinin HA2 NH2-terminal segment during influenza virus-induced membrane fusion. *J. Biol. Chem.,* 267(28), 20225 - 20232.

Udenfriend, S. und Kodukula, K. (1995) How glycosylphosphatidylinositol-anchored membrane proteins are made. *Annu. Rev. Biochem.,* 64563 - 591.

Ueno, K. und Suzuki, Y. (1997) p260/270 expressed in embryonic abdominal leg cells of Bombyx mori can transfer palmitate to peptides. *J. Biol. Chem.,* 272(21), 13519 - 13526.

Urban, A.; Neukirchen, S. und Jaeger, K. E. (1997) A rapid and efficient method for site-directed mutagenesis using one-step overlap extension PCR. *Nucleic Acids Res.,* 25(11), 2227 - 2228.

van't Hof, W. und Resh, M. D. (1997) Rapid plasma membrane anchoring of newly synthesized p59fyn: selective requirement for NH2-terminal myristoylation and palmitoylation at cysteine-3. *J. Cell Biol.,* 136(5), 1023 - 1035.

van't Hof, W. und Crystal, R. G. (2001) Manipulation of the cytoplasmic and transmembrane domains alters cell surface levels of the coxsackie-adenovirus receptor and changes the efficiency of adenovirus infection. *Hum. Gene Ther.,* 12(1), 25 - 34.

van't Hof, W. und Crystal, R. G. (2002) Fatty acid modification of the coxsackievirus and adenovirus receptor. *J. Virol.,* 76(12), 6382 - 6386.

Veit, M.; Schmidt, M. F. und Rott, R. (1989) Different palmitoylation of paramyxovirus glycoproteins. *Virology,* 168(1), 173 - 176.

Veit, M.; Herrler, G.; Schmidt, M. F.; Rott, R. und Klenk, H. D. (1990) The hemagglutinating glycoproteins of influenza B and C viruses are acylated with different fatty acids. *Virology,* 177(2), 807 - 811.

Veit, M.; Kretzschmar, E.; Kuroda, K.; Garten, W.; Schmidt, M. F.; Klenk, H. D. und Rott, R. (1991) Site-specific mutagenesis identifies three cysteine residues in the cytoplasmic tail as acylation sites of influenza virus hemagglutinin. *J. Virol.,* 65(5), 2491 - 2500.

Veit, M.; Klenk, H. D.; Kendal, A. und Rott, R. (1991) The M2 protein of influenza A virus is acylated. *J. Gen. Virol.,* 72 (Pt 6)1461 - 1465.

Veit, M. und Schmidt, M. F. (1993) Timing of palmitoylation of influenza virus hemagglutinin. *FEBS Lett.,* 336(2), 243 - 247.

Veit, M.; Sott, C.; Borchers, K.; Ludwig, H. und Schmidt, M. F. (1993) Structure, function, and intracellular localization of glycoprotein B of herpesvirus simian agent 8 expressed in insect and mammalian cells. *Arch. Virol.,* 133(3-4), 335 - 347.

Veit, M.; Nurnberg, B.; Spicher, K.; Harteneck, C.; Ponimaskin, E.; Schultz, G. und Schmidt, M. F. (1994) The alpha-subunits of G-proteins G12 and G13 are palmitoylated, but not amidically myristoylated. *FEBS Lett.,* 339(1-2), 160 - 164.

Veit, M.; Reverey, H. und Schmidt, M. F. (1996) Cytoplasmic tail length influences fatty acid selection for acylation of viral glycoproteins. *Biochem. J.,* 318 (Pt 1)163 - 172.

Veit, M.; Ponimaskin, E.; Baiborodin, S.; Gelderblom, H. R. und Schmidt, M. F. (1996) Intracellular compartmentalization of the glycoprotein B of herpesvirus Simian agent 8 expressed with a baculovirus vector in insect cells. *Arch. Virol.,* 141(10), 2009 - 2017.

Veit, M. und Schmidt, M. F. (1998) Membrane targeting via protein palmitoylation. *Methods Mol. Biol.,* 88227 - 239.

Veit, M.; Sachs, K.; Heckelmann, M.; Maretzki, D.; Hofmann, K. P. und Schmidt, M. F. (1998) Palmitoylation of rhodopsin with S-protein acyltransferase: enzyme catalyzed reaction versus autocatalytic acylation. *Biochim. Biophys. Acta,* 1394(1), 90 - 98.

Veit, M. (2000) Palmitoylation of the 25-kDa synaptosomal protein (SNAP-25) in vitro occurs in the absence of an enzyme, but is stimulated by binding to syntaxin. *Biochem. J.,* 345 Pt 1145 - 151.

Veit, M.; Becher, A. und Ahnert-Hilger, G. (2000) Synaptobrevin 2 is palmitoylated in synaptic vesicles prepared from adult, but not from embryonic brain. *Mol. Cell Neurosci.,* 15(4), 408 - 416.

Veit, M.; Laage, R.; Dietrich, L.; Wang, L. und Ungermann, C. (2001) Vac8p release from the SNARE complex and its palmitoylation are coupled and essential for vacuole fusion. *EMBO J.,* 20(12), 3145 - 3155.

Veit, M. und Schmidt, M. F. (2001) Enzymatic depalmitoylation of viral glycoproteins with acyl-protein thioesterase 1 in vitro. *Virology,* 288(1), 89 - 95.

Veit, M. (2002) Palmitoylierung von Proteinen mit membranfusionierender Aktivität und ihre Bedeutung für Viruspenetration und Neurosekretion. HABIL Freie Universität Berlin

Veit, M.; Ponimaskin, E. und Schmidt, M. F. (2002) Analysis of S-acylation of proteins. *Methods Mol. Biol.,* 194, 159 - 178.

Veit, M.; Dietrich, L. E. und Ungermann, C. (2003) Biochemical characterization of the vacuolar palmitoyl acyltransferase. *FEBS Lett.,* 540(1-3), 101 - 105.

Verderame, M. F.; Nelle, T. D. und Wills, J. W. (1996) The membrane-binding domain of the Rous sarcoma virus Gag protein. *J. Virol.,* 70(4), 2664 - 2668.

Verkruyse, L. A. und Hofmann, S. L. (1996) Lysosomal targeting of palmitoyl-protein thioesterase. *J. Biol. Chem.,* 271(26), 15831 - 15836.

Verkruyse, L. A.; Natowicz, M. R. und Hofmann, S. L. (1997) Palmitoyl-protein thioesterase deficiency in fibroblasts of individuals with infantile neuronal ceroid lipofuscinosis and I-cell disease. *Biochim. Biophys. Acta,* 1361(1), 1 - 5.

Verma, R. S.; Giannola, D.; Shlomchik, W. und Emerson, S. G. (1998) Increased efficiency of liposome-mediated transfection by volume reduction and centrifugation. *Biotechniques,* 25(1), 46 - 49.

Vesa, J.; Hellsten, E.; Verkruyse, L. A.; Camp, L. A.; Rapola, J.; Santavuori, P.; Hofmann, S. L. und Peltonen, L. (1995) Mutations in the palmitoyl protein thioesterase gene causing infantile neuronal ceroid lipofuscinosis. *Nature,* 376(6541), 584 - 587.

Vidal, S.; Mottet, G.; Kolakofsky, D. und Roux, L. (1989) Addition of high-mannose sugars must precede disulfide bond formation for proper folding of Sendai virus glycoproteins. *J. Virol.,* 63(2), 892 - 900.

Vogel, K. und Roche, P. A. (1999) SNAP-23 and SNAP-25 are palmitoylated in vivo. *Biochem. Biophys. Res. Commun.,* 258(2), 407 - 410.

Walser, A. und Deppert, W. (1989) A novel mechanism for covalent attachment of fatty acid to SV40 large T antigen. *Oncogene,* 4(2), 249 - 252.

Ward, G. A.; Stover, C. K.; Moss, B. und Fuerst, T. R. (1995) Stringent chemical and thermal regulation of recombinant gene expression by vaccinia virus vectors in mammalian cells. *Proc. Natl. Acad. Sci. U. S. A,* 92(15), 6773 - 6777.

Washbourne, P.; Cansino, V.; Mathews, J. R.; Graham, M.; Burgoyne, R. D. und Wilson, M. C. (2001) Cysteine residues of SNAP-25 are required for SNARE disassembly and exocytosis, but not for membrane targeting. *Biochem. J.,* 357(Pt 3), 625 - 634.

Weaver, T. A. und Panganiban, A. T. (1990) N myristoylation of the spleen necrosis virus matrix protein is required for correct association of the Gag polyprotein with intracellular membranes and for particle formation. *J. Virol.,* 64(8), 3995 - 4001.

Webster, R. G. und Rott, R. (1987) Influenza virus A pathogenicity: the pivotal role of hemagglutinin. *Cell,* 50(5), 665 - 666.

Wedegaertner, P. B. und Bourne, H. R. (1994) Activation and depalmitoylation of Gs alpha. *Cell,* 77(7), 1063 - 1070.

Wedegaertner, P. B.; Wilson, P. T. und Bourne, H. R. (1995) Lipid modifications of trimeric G proteins. *J. Biol. Chem.,* 270(2), 503 - 506.

Welker, R.; Harris, M.; Cardel, B. und Krausslich, H. G. (1998) Virion incorporation of human immunodeficiency virus type 1 Nef is mediated by a bipartite membrane-targeting signal: analysis of its role in enhancement of viral infectivity. *J. Virol.,* 72(11), 8833 - 8840.

Weston, S. A.; Camble, R.; Colls, J.; Rosenbrock, G.; Taylor, I.; Egerton, M.; Tucker, A. D.; Tunnicliffe, A.; Mistry, A.; Mancia, F.; de la, F. E.; Irwin, J.; Bricogne, G. und Pauptit, R. A. (1998) Crystal structure of the anti-fungal target N-myristoyl transferase. *Nat. Struct. Biol.,* 5(3), 213 - 221.

White, J. M. und Wilson, I. A. (1987) Anti-peptide antibodies detect steps in a protein conformational change: low-pH activation of the influenza virus hemagglutinin. *J. Cell Biol.,* 105(6 Pt 2), 2887 - 2896.

Whitt, M. A. und Rose, J. K. (1991) Fatty acid acylation is not required for membrane fusion activity or glycoprotein assembly into VSV virions. *Virology,* 185(2), 875 - 878.

Wickner, W. T. und Lodish, H. F. (1985) Multiple mechanisms of protein insertion into and across membranes. *Science,* 230(4724), 400 - 407.

Wilcox, C.; Hu, J. S. und Olson, E. N. (1987) Acylation of proteins with myristic acid occurs cotranslationally. *Science,* 238(4831), 1275 - 1278.

Wiley, D. C.; Skehel, J. J. und Waterfield, M. (1977) Evidence from studies with a cross-linking reagent that the haemagglutinin of influenza virus is a trimer. *Virology,* 79(2), 446 - 448.

Wiley, D. C.; Wilson, I. A. und Skehel, J. J. (1981) Structural identification of the antibody-binding sites of Hong Kong influenza haemagglutinin and their involvement in antigenic variation. *Nature,* 289(5796), 373 - 378.

Wiley, D. C. und Skehel, J. J. (1987) The structure and function of the hemagglutinin membrane glycoprotein of influenza virus. *Annu. Rev. Biochem.,* 56365 - 394.

Willbold, D. und Rosch, P. (1996) Solution Structure of the Human CD4 (403-419) Receptor Peptide. *J. Biomed. Sci.,* 3(6), 435 - 441.

Willey, R. L.; Buckler-White, A. und Strebel, K. (1994) Sequences present in the cytoplasmic domain of CD4 are necessary and sufficient to confer sensitivity to the human immunodeficiency virus type 1 Vpu protein. *J. Virol.,* 68(2), 1207 - 1212.

Wilson, I. A.; Skehel, J. J. und Wiley, D. C. (1981) Structure of the haemagglutinin membrane glycoprotein of influenza virus at 3 A resolution. *Nature,* 289(5796), 366 - 373.

Wold, F. (1981) In vivo chemical modification of proteins (post-translational modification). *Annu. Rev. Biochem.,* 50783 - 814.

Wong, P. und Pamer, E. G. (2003) CD8 T cell responses to infectious pathogens. *Annu. Rev. Immunol.,* 2129 - 70.

Wray, V.; Mertins, D.; Kiess, M.; Henklein, P.; Trowitzsch-Kienast, W. und Schubert, U. (1998) Solution structure of the cytoplasmic domain of the human CD4 glycoprotein by CD and 1H NMR spectroscopy: implications for biological functions. *Biochemistry,* 37(23), 8527 - 8538.

Wu, H.; Myszka, D. G.; Tendian, S. W.; Brouillette, C. G.; Sweet, R. W.; Chaiken, I. M. und Hendrickson, W. A. (1996) Kinetic and structural analysis of mutant CD4 receptors that are defective in HIV gp120 binding. *Proc. Natl. Acad. Sci. U. S. A,* 93(26), 15030 - 15035.

Yamazaki, M.; Fukaya, M.; Abe, M.; Ikeno, K.; Kakizaki, T.; Watanabe, M. und Sakimura, K. (2001) Differential palmitoylation of two mouse glutamate receptor interacting protein 1 forms with different N-terminal sequences. *Neurosci. Lett.,* 304(1-2), 81 - 84.

Yang, C.; Spies, C. P. und Compans, R. W. (1995) The human and simian immunodeficiency virus envelope glycoprotein transmembrane subunits are palmitoylated. *Proc. Natl. Acad. Sci. U. S. A,* 92(21), 9871 - 9875.

Yao, M.; Tien, H. F.; Lin, M. T.; Su, I. J.; Wang, C. T.; Chen, Y. C.; Shen, M. C. und Wang, C. H. (1996) Clinical and hematological characteristics of hepatosplenic T gamma/delta lymphoma with isochromosome for long arm of chromosome 7. *Leuk. Lymphoma,* 22(5-6), 495 - 500.

Yao, X. J.; Friborg, J.; Checroune, F.; Gratton, S.; Boisvert, F.; Sekaly, R. P. und Cohen, E. A. (1995) Degradation of CD4 induced by human immunodeficiency virus type 1 Vpu protein: a predicted alpha-helix structure in the proximal cytoplasmic region of CD4 contributes to Vpu sensitivity. *Virology,* 209(2), 615 - 623.

Yeh, D. C.; Duncan, J. A.; Yamashita, S. und Michel, T. (1999) Depalmitoylation of endothelial nitric-oxide synthase by acyl-protein thioesterase 1 is potentiated by Ca(2+)-calmodulin. *J. Biol. Chem.,* 274(46), 33148 - 33154.

Yik, J. H. und Weigel, P. H. (2002) The position of cysteine relative to the transmembrane domain is critical for palmitoylation of H1, the major subunit of the human asialoglycoprotein receptor. *J. Biol. Chem.,* 277(49), 47305 - 47312.

Yoshima, H.; Nakanishi, M.; Okada, Y. und Kobata, A. (1981) Carbohydrate structures of HVJ (Sendai virus) glycoproteins. *J. Biol. Chem.,* 256(11), 5355 - 5361.

Yuan, X.; Yu, X.; Lee, T. H. und Essex, M. (1993) Mutations in the N-terminal region of human immunodeficiency virus type 1 matrix protein block intracellular transport of the Gag precursor. *J. Virol.,* 67(11), 6387 - 6394.

Yurchak, L. K. und Sefton, B. M. (1995) Palmitoylation of either Cys-3 or Cys-5 is required for the biological activity of the Lck tyrosine protein kinase. *Mol. Cell Biol.,* 15(12), 6914 - 6922.

Zeng, F. Y.; Kaphalia, B. S.; Ansari, G. A. und Weigel, P. H. (1995) Fatty acylation of the rat asialoglycoprotein receptor. The three subunits from active receptors contain covalently bound palmitate and stearate. *J. Biol. Chem.,* 270(36), 21382 - 21387.

Zhang, F. L. und Casey, P. J. (1996) Protein prenylation: molecular mechanisms and functional consequences. *Annu. Rev. Biochem.,* 65241 - 269.

Zhang, J.; Pekosz, A. und Lamb, R. A. (2000) Influenza virus assembly and lipid raft microdomains: a role for the cytoplasmic tails of the spike glycoproteins. *J. Virol.,* 74(10), 4634 - 4644.

Zhang, Z.; Lee, Y. C.; Kim, S. J.; Choi, M. S.; Tsai, P. C.; Xu, Y.; Xiao, Y. J.; Zhang, P.; Heffer, A. und Mukherjee, A. B. (2006) Palmitoyl-protein thioesterase-1 deficiency mediates the activation of the unfolded protein response and neuronal apoptosis in INCL. *Hum. Mol. Genet.,* 15(2), 337 - 346.

Zhao, L.; Lobo, S.; Dong, X.; Ault, A. D. und Deschenes, R. J. (2002) Erf4p and Erf2p form an endoplasmic reticulum-associated complex involved in the plasma membrane localization of yeast Ras proteins. *J. Biol. Chem.,* 277(51), 49352 - 49359.

Zheng, J.; Knighton, D. R.; Xuong, N. H.; Taylor, S. S.; Sowadski, J. M. und Ten Eyck, L. F. (1993) Crystal structures of the myristylated catalytic subunit of cAMP-dependent protein kinase reveal open and closed conformations. *Protein Sci.,* 2(10), 1559 - 1573.

Zhou, F.; Xue, Y.; Yao, X. und Xu, Y. (2006) CSS-Palm: palmitoylation site prediction with a clustering and scoring strategy (CSS). *Bioinformatics.,* 22(7), 894 - 896.

Zhou, W.; Parent, L. J.; Wills, J. W. und Resh, M. D. (1994) Identification of a membrane-binding domain within the amino-terminal region of human immunodeficiency virus type 1 Gag protein which interacts with acidic phospholipids. *J. Virol.,* 68(4), 2556 - 2569.

Zhou, W. und Resh, M. D. (1996) Differential membrane binding of the human immunodeficiency virus type 1 matrix protein. *J. Virol.,* 70(12), 8540 - 8548.

Zhu, H.; Wang, H. und Ascoli, M. (1995) The lutropin/choriogonadotropin receptor is palmitoylated at intracellular cysteine residues. *Mol. Endocrinol.,* 9(2), 141 - 150.

Zurcher, T.; Luo, G. und Palese, P. (1994) Mutations at palmitylation sites of the influenza virus hemagglutinin affect virus formation. *J. Virol.,* 68(9), 5748 - 5754.