

7 Literatur

1. <http://prowl.rocketeer.edu/cgi-bin/ProFound>
2. **Abe, I., K. Okumoto, S. Tamura, and Y. Fujiki.** 1998. Clofibrate-inducible, 28-kDa peroxisomal integral membrane protein is encoded by *PEX11*. FEBS Lett **431**:468-472.
3. **Abraham, P. R., A. Mulder, J. Van Riet, R. J. Planta, and H. A. Raue.** 1992. A molecular cloning and physical analysis of an 8.2 kb segment of chromosome XI of *Saccharomyces cerevisiae*. Yeast **8**:227-38.
4. **Albertini, M., W. Girzalsky, M. Veenhuis, and W. H. Kunau.** 2001. Pex12p of *Saccharomyces cerevisiae* is a component of a multi-protein complex essential for peroxisomal matrix protein import. Eur J Cell Biol **80**:257-70.
5. **Albertini, M., P. Rehling, R. Erdmann, W. Girzalsky, J. A. Kiel, M. Veenhuis, and W. H. Kunau.** 1997. Pex14p, a peroxisomal membrane protein binding both receptors of the two PTS-dependent import pathways. Cell **89**:83-92.
6. **Altschul, S. F., T. L. Madden, A. A. Schaffer, J. Zhang, Z. Zhang, W. Miller, and D. J. Lipman.** 1997. Gapped BLAST and PSI-BLAST: a new generation of protein database search programs. Nucleic Acid Res. **25**:3389-3402.
7. **Andrade, M. A., C. Sander, and A. Valencia.** 1998. Updated catalogue of homologues to human disease-related proteins in the yeast genome. FEBS Lett **426**:7-16.
8. **Athenstaedt, K., D. Zweytick, A. Jandrositz, S. D. Kohlwein, and G. Daum.** 1999. Identification and characterization of major lipid particle proteins of the yeast *Saccharomyces cerevisiae*. J Bacteriol **181**:6441-8.
9. **Baerends, R. J. S., S. W. Rasmussen, R. E. Hilbrands, M. van der Heide, K. N. Faber, P. T. W. Reuvekamp, J. A. K. W. Kiel, J. M. Cregg, I. J. van der Klei, and M. Veenhuis.** 1996. The *Hansenula polymorpha* *PER9* gene encodes a peroxisomal membrane protein essential for peroxisome assembly and integrity. J Biol Chem. **271**:8887-8894.
10. **Baird, G. S., Zacharias, David A., and Tsien, Roger Y.** 2000. Biochemistry, mutagenesis, and oligomerization of DsRed, a red fluorescent protein from coral. PNAS **97**:11984-11989.
11. **Bairoch, A., P. Bucher, and K. Hofmann.** 1996. The PROSITE database, its status in 1995. Nucleic Acids Res. **24**:189-196.
12. **Benz, R.** 1994. Permeation of hydrophilic solutes through mitochondrial outer membranes: review on mitochondrial porins. Biochim Biophys. Acta **1197**:167-96.
13. **Benz, R.** 1989. Porins from mitochondrial and bacterial outer membranes: structural and functional aspects., p. 200-214. In A. Azzi (ed.), Anion Carriers of Mitochondrial Membranes. Springer Verlag, Berlin.
14. **Berteaux-Lecellier, V., M. Picard, C. Thompson-Coffe, D. Zickler, A. Panvier-Adoutte, and J. M. Simonet.** 1995. A nonmammalian homolog of the PAF1 gene (Zellweger syndrome) discovered as a gene involved in caryogamy in the fungus *Podospora anserina*. Cell **81**:1043-1051.
15. **Bhattacharjee, J. K.** 1985. alpha-Aminoadipate pathway for the biosynthesis of lysine in lower eucaryotes. Crit Rev Microbiol. **12**:131-51.
16. **Biardi, L., and S. K. Krisans.** 1996. Compartmentalization of cholesterol biosynthesis. Conversion of mevalonate to farnesyl diphosphate occurs in the peroxisomes. J Biol Chem **271**:1784-8.
17. **Birnboim, H. C., and J. Doly.** 1979. A rapid alkaline extraction procedure for screening recombinant DNA. Nucl. Acid Res **7**:1513-1523.
18. **Blattner, J., B. Swinkels, H. Dorsam, T. Prospero, S. Subramani, and C. Clayton.** 1992. Glycosome assembly in trypanosome: variations in acceptable degeneracy of a COOH-terminal microbody targeting signal. J Cell Biol **119**:1129-36.
19. **B Blobel, F., and R. Erdmann.** 1996. Identification of a yeast peroxisomal member of the family of AMP-binding proteins. Eur J Biochem **240**:468-76.
20. **Borden, K. L. B.** 2000. Ring domains: master builders of molecular scaffolds? J. mol. Biol. **295**:1103-12.
21. **Bottger, G., P. Barnett, A. T. Klein, A. Kragt, H. F. Tabak, and B. Distel.** 2000. *Saccharomyces cerevisiae* PTS1 receptor Pex5p interacts with the SH3 domain of the peroxisomal membrane protein Pex13p in an unconventional, non-PXXP-related manner. Mol Biol Cell. **11**:3963-76.
22. **Bowen, P., C. S. N. Lee, H. Zellweger, and R. Lindberg.** 1964. A familial syndrome of multiple congenital defects. Bull Johns Hopkins Hosp **114**:402-414.
23. **Braun, A., S. Kammerer, W. Weissenhorn, E. H. Weiss, and H. Cleve.** 1994. Sequence of a putative human housekeeping gene (*HK33*) localized on chromosome 1. Gene **146**:291-295.
24. **Braverman, N., G. Steel, C. Obie, A. Moser, H. Moser, S. J. Gould, and D. Valle.** 1997. Human PEX7 encodes the peroxisomal PTS2 receptor and is responsible for rhizomelic chondrodysplasia punctata. Nat Genet **15**:369-76.
25. **Brocard, C., F. Kragler, M. M. Simon, T. Schuster, and A. Hartig.** 1994. The tetratricopeptide repeat-domain of the PAS10 protein of *Saccharomyces cerevisiae* is essential for binding the peroxisomal targeting signal-SKL. Biochem Biophys Res Commun **204**:1016-22.
26. **Brocard, C., G. Lametschwandtner, R. Koudelka, and A. Hartig.** 1997. Pex14p is a member of the protein linkage map of Pex5p. EMBO J **16**:5491-500.

27. **Brown, F. R., A. J. McAdams, J. W. Cummins, R. Konkol, I. Singh, A. B. Moser, and H. W. Moser.** 1982. Cerebro-hepato-renal (zellweger) syndrome and neonatal adrenoleukodystrophy: Similarities in phenotype and accumulation of very long chain fatty acids. *Johns Hopkins Med. Journal* **151**:344-351.
28. **Brown, T. W., V. I. Titorenko, and R. A. Rachubinski.** 2000. Mutants of the *Yarrowia lipolytica* PEX23 gene encoding an integral peroxisomal membrane peroxin mislocalize matrix proteins and accumulate vesicles containing peroxisomal matrix and membrane proteins. *Mol Biol Cell* **11**:141-52.
29. **Bussereau, F., L. Mallet, L. Gaillon, and M. Jacquet.** 1993. A 12.8 kb segment, on the right arm of chromosome II from *Saccharomyces cerevisiae* including part of the DUR1,2 gene, contains five putative new genes. *Yeast* **9**:797-806.
30. **Chang, C. C., W. H. Lee, H. Moser, D. Valle, and S. J. Gould.** 1997. Isolation of the human PEX12 gene, mutated in group 3 of the peroxisome biogenesis disorders. *Nat Genet* **15**:385-8.
31. **Chang, C. C., D. S. Warren, K. A. Sacksteder, and S. J. Gould.** 1999. PEX12 interacts with PEX5 and PEX10 and acts downstream of receptor docking in peroxisomal matrix protein import. *J Cell Biol* **147**:761-74.
32. **Cigan, A. M., and T. F. Donahue.** 1987. Sequence and structural features associated with translational initiator regions in yeast. *Gene* **59**:1-18.
33. **Claros, M. G., and P. Vincens.** 1996. Computational method to predict mitochondrial imported proteins and their targeting sequences. *Eur. Journal Biochem* **241**:770-786.
34. **Colombini, M.** 1979. A candidate for the permeability pathway of the outer mitochondrial membrane. *Nature* **279**:643-645.
35. **Costanzo, M. C., J. D. Hogan, M. E. Cusick, B. P. Davis, A. M. Fancher, P. E. Hodges, P. Kondu, C. Lengieza, J. E. Lew-Smith, C. Lingner, K. J. Roberg-Perez, M. Tillberg, J. E. Brooks, and J. I. Garrels.** 2000. The yeast proteome database (YPD) and *Caenorhabditis elegans* proteome database (WormPD): comprehensive resources for the organization and comparison of model organism protein information. *Nuc Acids Res.* **28**:73-76.
36. **Crane, D. I., J. E. Kalish, and S. J. Gould.** 1994. The *Pichia pastoris* PAS4 gene encodes a ubiquitin-conjugating enzyme required for peroxisome assembly. *J Biol Chem* **269**:21835-44.
37. **Dammai, V., and S. Subramani.** 2001. The human peroxisomal targeting signal receptor, Pex5p, is translocated into the peroxisomal matrix and recycled to the cytosol. *Cell* **105**:187-96.
38. **Dansen, T. B., K. W. Wirtz, R. J. Wanders, and E. H. Pap.** 2000. Peroxisomes in human fibroblasts have a basic pH. *Nat Cell Biol* **2**:51-3.
39. **Daum, G., Lees, N.D., Bard, M. und Dickson, R.** 1998. Biochemistry, cell biology and molecular biology of lipids of *Saccharomyces cerevisiae*. *Yeast* **14**:1471-1510.
40. **De Duve, C., and P. Baudhuin.** 1966. Peroxisomes (microbodies and related particles). *Physiol Rev* **46**:323-57.
41. **de Virgilio, C., N. Buerckert, G. Barth, J. M. Neuhaus, T. Boller, and A. Wiemken.** 1992. Cloning and disruption of a gene required for growth on acetate but not on ethanol: the acetyl-coenzyme A synthetase gene of *Saccharomyces cerevisiae*. *Yeast* **8**:1043-1051.
42. **de Walque, S., J. A. K. W. Kiel, M. Veenhuis, F. R. Opperdoes, and P. A. M. Michels.** 1999. Cloning and analysis of PTS-1 receptor in *Trypanosoma brucei*. *Mol. Biochem. Parasitol.* **104**:107-19.
43. **Distel, B., R. Erdmann, S. J. Gould, G. Blobel, D. I. Crane, J. M. Cregg, G. Dodt, Y. Fujiki, J. M. Goodman, W. W. Just, J. A. Kiel, W. H. Kunau, P. B. Lazarow, G. P. Mannaerts, H. W. Moser, T. Osumi, R. A. Rachubinski, A. Roscher, S. Subramani, H. F. Tabak, T. Tsukamoto, D. Valle, I. van der Klei, P. P. van Veldhoven, and M. Veenhuis.** 1996. A unified nomenclature for peroxisome biogenesis factors. *J Cell Biol* **135**:1-3.
44. **Dmochowska, A., D. Dignard, R. Maleszka, and D. Y. Thomas.** 1990. Structure and transcriptional control of the *Saccharomyces cerevisiae* POX1 gene encoding acyl-CoA oxidase. *Gene* **88**:247-252.
45. **Dodt, G., N. Braverman, C. Wong, A. Moser, H. W. Moser, P. Watkins, D. Valle, and S. J. Gould.** 1995. Mutations in the PTS1 receptor gene, PXR1, define complementation group 2 of the peroxisome biogenesis disorders. *Nat Genet* **9**:115-25.
46. **Dodt, G., and S. J. Gould.** 1996. Multiple PEX genes are required for proper subcellular distribution and stability of Pex5p, the PTS1 receptor: evidence that PTS1 protein import is mediated by a cycling receptor. *J Cell Biol* **135**:1763-74.
47. **Dorer, R., C. Boone, T. Kimbrough, J. Kim, and L. H. Hartwell.** 1997. Genetic analysis of default mating behavior in *Saccharomyces cerevisiae*. *Genetics* **146**:39-55.
48. **Drablos, F., and S. Petersen.** 1997. Identification of conserved residues in family of esterase and lipase sequences. *Methods Enzymol* **284**:28-61.
49. **Dyer, J. M., J. A. McNew, and J. M. Goodman.** 1996. The sorting sequence of the peroxisomal integral membrane protein PMP47 is contained within a short hydrophilic loop. *J Cell Biol* **133**:269-80.
50. **Eckert, J. H.** 2001. Dissertation. Universität Köln, Köln.
51. **Einerhand, A. W., W. T. Kos, B. Distel, and H. F. Tabak.** 1993. Characterization of a transcriptional control element involved in proliferation of peroxisomes in yeast in response to oleate. *Eur J Biochem* **214**:323-31.
52. **Einerhand, A. W., T. M. Voorn-Brouwer, R. Erdmann, W. H. Kunau, and H. F. Tabak.** 1991. Regulation of transcription of the gene coding for peroxisomal 3-oxoacyl-CoA thiolase of *Saccharomyces cerevisiae*. *Eur J Biochem* **200**:113-22.
53. **Etzen, G. A., J. D. Aitchinson, R. K. Szilard, M. Veenhuis, W. M. Nuttley, and R. A. Rachubinski.** 1995. The *Yarrowia lipolytica* gene PYA2 encodes a 42-kDa peroxisomal integral membrane protein

- essential for matrix protein import and peroxisome enlargement but not for peroxisomal membrane proliferation. *J Biol Chem.* **137**:1265-1278.
54. **Elgersma, Y., M. Elgersma-Hooisma, T. Wenzel, J. M. McCaffery, M. G. Farquhar, and S. Subramani.** 1998. A mobile PTS2 receptor for peroxisomal protein import in *Pichia pastoris*. *J Cell Biol* **140**:807-20.
55. **Elgersma, Y., L. Kwast, A. Klein, T. Voorn-Brouwer, M. van den Berg, B. Metzig, T. America, H. F. Tabak, and B. Distel.** 1996. The SH3 domain of the *Saccharomyces cerevisiae* peroxisomal membrane protein Pex13p functions as a docking site for Pex5p, a mobile receptor for the import of PTS1-containing proteins. *J Cell Biol* **135**:97-109.
56. **Elgersma, Y., L. Kwast, M. van den Berg, W. B. Snyder, B. Distel, S. Subramani, and H. F. Tabak.** 1997. Overexpression of Pex15p, a phosphorylated peroxisomal integral membrane protein required for peroxisome assembly in *S.cerevisiae*, causes proliferation of the endoplasmic reticulum membrane. *EMBO J* **16**:7326-41.
57. **Elgersma, Y., A. Vos, M. van den Berg, C. W. van Roermund, P. van der Sluijs, B. Distel, and H. F. Tabak.** 1996. Analysis of the carboxyl-terminal peroxisomal targeting signal 1 in a homologous context in *Saccharomyces cerevisiae*. *J Biol Chem* **271**:26375-82.
58. **Erdmann, R.** 1994. The peroxisomal targeting signal of 3-oxoacyl-CoA thiolase from *Saccharomyces cerevisiae*. *Yeast* **10**:935-44.
59. **Erdmann, R., and G. Blobel.** 1995. Giant peroxisomes in oleic acid-induced *Saccharomyces cerevisiae* lacking the peroxisomal membrane protein Pmp27p. *J Cell Biol* **128**:509-23.
60. **Erdmann, R., and G. Blobel.** 1996. Identification of Pex13p a peroxisomal membrane receptor for the PTS1 recognition factor. *J Cell Biol* **135**:111-21.
61. **Erdmann, R., and W. H. Kunau.** 1992. A genetic approach to the biogenesis of peroxisomes in the yeast *Saccharomyces cerevisiae*. *Cell Biochem Funct* **10**:167-74.
62. **Erdmann, R., M. Veenhuis, and W. H. Kunau.** 1997. Peroxisomes: organelles at the crossroads. *Trends Cell Biol* **7**:400-407.
63. **Erdmann, R., M. Veenhuis, D. Mertens, and W. H. Kunau.** 1989. Isolation of peroxisome-deficient mutants of *Saccharomyces cerevisiae*. *Proc Natl Acad Sci U S A* **86**:5419-23.
64. **Erdmann, R., F. F. Wiebel, A. Flessau, J. Rytka, A. Beyer, K. U. Frohlich, and W. H. Kunau.** 1991. PAS1, a yeast gene required for peroxisome biogenesis, encodes a member of a novel family of putative ATPases. *Cell* **64**:499-510.
65. **Faber, K. N., J. A. Heyman, and S. Subramani.** 1998. Two AAA family peroxins, PpPex1p and PpPex6p, interact with each other in an ATP-dependent manner and are associated with different subcellular membranous structures distinct from peroxisomes. *Mol Cell Biol* **18**:936-43.
66. **Fischer, K., A. Weber, S. Brink, B. Arbinger, D. Schünemann, S. Borchert, H. W. Heldt, B. Popp, R. Benz, T. A. Link, C. Eckerskorn, and U. I. Flügge.** 1994. Porins from plants: molecular cloning, heterologous expression and functional characterization of two members of the porin family. *J Biol Chem* **269**:25754-25760.
67. **Flügge, U. I., and R. Benz.** 1984. Pore-forming activity in the outer membrane of the chloroplast envelope. *FEBS Lett* **169**:85-89.
68. **Flynn, C. R., R. T. Mullen, and R. N. Trelease.** 1998. Mutational analyses of a type 2 peroxisomal targeting signal that is capable of directing oligomeric protein import into tobacco BY-2 glyoxysomes. *Plant J* **16**:709-20.
69. **Foulon, V., V. D. Antonenkov, K. Croes, E. Waelkens, G. P. Mannaerts, P. P. Van Veldhoven, and M. Casteels.** 1999. Purification, molecular cloning, and expression of 2-hydroxyphytanoyl-CoA lyase, a peroxisomal thiamine pyrophosphate-dependent enzyme that catalyzes the carbon-carbon bond cleavage during alpha-oxidation of 3-methyl-branched fatty acids. *Proc Natl Acad Sci U S A* **96**:10039-44.
70. **Fransen, M., C. Brees, E. Baumgart, J. C. Vanhooren, M. Baes, G. P. Mannaerts, and P. P. Van Veldhoven.** 1995. Identification and characterization of the putative human peroxisomal C-terminal targeting signal import receptor. *J Biol Chem* **270**:7731-6.
71. **Fransen, M., S. R. Terlecky, and S. Subramani.** 1998. Identification of a human PTS1 receptor docking protein directly required for peroxisomal protein import. *Proc Natl Acad Sci U S A* **95**:8087-92.
72. **Fujiki, Y.** 2000. Peroxisome biogenesis and peroxisome biogenesis disorders. *FEBS letters* **476**:42-46.
73. **Gachotte, D., R. Barbuch, J. Gaylor, E. Nickel, and Bard, M.** 1998. Characterisation of the *Saccharomyces cerevisiae* ERG26 gene encoding the C-3 sterol dehydrogenase (C-4 decarboxylase) involved in sterol biosynthesis. *Proc. Natl. Acad. Sci. USA* **95**:13794-13799.
74. **Gärtner, J.** 2000. Organelle disease:peroxisomal disorders. *Eur Journal Pediatr* **159**:236-239.
75. **Gatto, G. J., Jr., B. V. Geisbrecht, S. J. Gould, and J. M. Berg.** 2000. A proposed model for the PEX5-peroxisomal targeting signal-1 recognition complex. *Proteins* **38**:241-6.
76. **Gavin, A., M. Bösche, R. Krause, P. Grandi, M. Marzioch, A. Bauer, J. Schultz, J. M. Rick, A.-M. Michon, C.-M. Cruciat, M. Remor, C. Höpfert, M. Scheider, M. Brajenovic, H. Ruffner, A. Merino, K. Klein, M. Hudak, D. Dickson, T. Rudi, V. Gnau, A. Bauch, S. Bastuck, B. Huhse, C. Leutwein, M.-A. Heurtier, R. R. Copley, A. Edelmann, E. Querfurth, V. Rybin, G. Drewes, M. Raida, T. Bouwmeester, P. Bork, B. Seraphin, B. Kuster, G. Neubauer, and G. Superti-Furga.** 2002. Functional organization of the yeast proteome by systematic analysis of protein complexes. *Nature* **415**:141-47.

77. **Geisbrecht, B. V., K. Schulz, K. Nau, M. T. Geraghty, H. Schulz, R. Erdmann, and S. J. Gould.** 1999. Preliminary characterization of Yor180Cp: identification of a novel peroxisomal protein of *Saccharomyces cerevisiae* involved in fatty acid metabolism. *Biochem Biophys Res Commun* **260**:28-34.
78. **Geisbrecht, B. V., D. Zhu, K. Schulz, K. Nau, J. C. Morrell, M. Geraghty, H. Schulz, R. Erdmann, and S. J. Gould.** 1998. Molecular characterization of *Saccharomyces cerevisiae* Delta3, Delta2-enoyl-CoA isomerase. *J Biol Chem* **273**:33184-91.
79. **Geraghty, M. T., D. Bassett, J. C. Morrell, G. J. Gatto, Jr., J. Bai, B. V. Geisbrecht, P. Hieter, and S. J. Gould.** 1999. Detecting patterns of protein distribution and gene expression *in silico*. *Proc Natl Acad Sci U S A* **96**:2937-42.
80. **Girzalsky, W., P. Rehling, K. Stein, J. Kipper, L. Blank, W. H. Kunau, and R. Erdmann.** 1999. Involvement of Pex13p in Pex14p localization and peroxisomal targeting signal 2-dependent protein import into peroxisomes. *J Cell Biol* **144**:1151-62.
81. **Glover, J. R., D. W. Andrews, S. Subramani, and R. A. Rachubinski.** 1994. Mutagenesis of the amino targeting signal of *Saccharomyces cerevisiae* 3-ketoacyl-CoA thiolase reveals conserved amino acids required for import into peroxisomes *in vivo*. *J Biol. Chem.* **269**:7558-7563.
82. **Goffeau, A., B. G. Barrell, H. Bussey, R. W. Davis, and B. Dujon.** 1996. Life with 6000 genes. *Science* **274**:546-67.
83. **Goldfischer, S., C. L. Moor, A. B. Johnson, A. J. Spiro, M. P. Valsamis, H. K. Wisniewski, R. H. Ritch, W. T. Norton, I. Rapin, and L. M. Gerner.** 1973. Peroxisomal and mitochondrial defects in cerebrohepatorenal syndrome. *Science* **182**:62-64.
84. **Götte, K., W. Girzalsky, M. Linkert, E. Baumgart, S. Kammerer, W. H. Kunau, and R. Erdmann.** 1998. Pex19p, a farnesylated protein essential for peroxisome biogenesis. *Mol Cell Biol* **18**:616-28.
85. **Gould, S. J., and C. Collins.** 2002. Peroxisomal protein import: is it really that complex. *Nature-reviews* **3**:382-389.
86. **Gould, S. J., J. E. Kalish, J. C. Morrell, J. Bjorkman, A. J. Urquhart, and D. I. Crane.** 1996. Pex13p is an SH3 protein of the peroxisome membrane and a docking factor for the predominantly cytoplasmic PTs1 receptor. *J Cell Biol* **135**:85-95.
87. **Gould, S. J., G. A. Keller, and S. Subramani.** 1988. Identification of peroxisomal targeting signals located at the carboxy terminus of four peroxisomal proteins. *J Cell Biol* **107**:897-905.
88. **Gould, S. J., and D. Valle.** 2000. Peroxisome biogenesis disorders: genetics and cell biology. *Trends Genet* **16**:340-5.
89. **Güldener, U., S. Heck, T. Fielder, J. Beinhauer, and J. H. Hegemann.** 1996. A new efficient gene disruption cassette for repeated use in budding yeast. *Nucleic Acids Res* **24**:2519-24.
90. **Gurvitz, A., B. Hamilton, H. Ruis, and A. Hartig.** 2001. Peroxisomal degradation of trans-unsaturated fatty acids in the yeast *Saccharomyces cerevisiae*. *J Biol Chem.* **276**:895-903.
91. **Gurvitz, A., A. M. Mursula, A. Firzinger, B. Hamilton, S. H. Kilpelainen, A. Hartig, H. Ruis, J. K. Hiltunen, and H. Rottensteiner.** 1998. Peroxisomal Delta3-cis-Delta2-trans-enoyl-CoA isomerase encoded by ECI1 is required for growth of the yeast *Saccharomyces cerevisiae* on unsaturated fatty acids. *J Biol Chem* **273**:31366-74.
92. **Gurvitz, A., H. Rottensteiner, J. K. Hiltunen, M. Binder, I. W. Dawes, H. Ruis, and B. Hamilton.** 1997. Regulation of the yeast SPS19 gene encoding peroxisomal 2,4-dienoyl-CoA reductase by the transcription factors Pip2p and Oaf1p: beta-oxidation is dispensable for *Saccharomyces cerevisiae* sporulation in acetate medium. *Mol Microbiol* **26**:675-85.
93. **Hallstrom, T. C., and W. S. Moye Rowley.** 2000. Hyperactive forms of the Pdr1p transcription factor fail to respond to positive regulation by the Hsp70 protein Pdr13p. *Mol Microbiol* **36**:402-413.
94. **Hanahan, D.** 1983. Studies on transformation of *Escherichia coli* with plasmids. *J Mol Biol* **166**:557-80.
95. **Hashimoto, T.** 1982. Individual peroxisomal beta-oxidation enzymes. *An. N Y Acad. Sci.* **386**:5-12.
96. **Hayashi, M., and K. Nito.** 2000. AtPex14p maintains peroxisomal functions by determining protein targeting to three kinds of plant peroxisomes. *The EMBO Journal* **19**:5701-5710.
97. **Henikoff, S., and J. G. Henikoff.** 1992. Amino acid substitution matrices from protein blocks. *Proc. Natl. Acad. Sci. USA* **89**:10915-10919.
98. **Henke, B., W. Girzalsky, V. Berteaux-Lecellier, and R. Erdmann.** 1998. IDP3 encodes a peroxisomal NADP-dependent isocitrate dehydrogenase required for the beta-oxidation of unsaturated fatty acids. *J Biol Chem* **273**:3702-11.
99. **Herrera, F., H. Correia, L. Triana, and G. Fraile.** 1991. Association of ribosomal subunits. A new functional role for yeast EF1 alpha in protein biosynthesis. *Eur J Biochem* **200**:321-7.
100. **Hettema, E. H., C. C. M. Ruigrok, M. G. Koerkamp, M. van den Berg, H. F. Tabak, B. Distel, and I. Braakman.** 1998. The cytosolic DnaJ-like protein djp1p is involved specifically in peroxisomal protein import. *J Cell Biol* **142**:421-34.
101. **Hettema, E. H., C. W. van Roermund, B. Distel, M. van den Berg, C. Vilela, C. Rodrigues-Pousada, R. J. Wanders, and H. F. Tabak.** 1996. The ABC transporter proteins Pat1 and Pat2 are required for import of long-chain fatty acids into peroxisomes of *Saccharomyces cerevisiae*. *EMBO J* **15**:3813-22.
102. **Heyman, J. A., E. Monosov, and S. Subramani.** 1994. Role of the PAS1 gene of *Pichia pastoris* in peroxisome biogenesis. *J Cell Biol* **127**:1259-73.
103. **Higgins, D. G., A. J. Bleasby, and J. Fuchs.** 1992. ClustalW: improved software for multiple sequence alignment. *Compt. Appl. Biosci* **8**:189-191.
104. **Hiltunen, J. K., B. Wenzel, A. Beyer, R. Erdmann, A. Fossa, and W. H. Kunau.** 1992. Peroxisomal multifunctional beta-oxidation protein of *Saccharomyces cerevisiae*. Molecular analysis of the fox2 gene and gene product. *J Biol Chem* **267**:6646-53.

105. Höfeld, J., M. Veenhuis, and W. H. Kunau. 1991. PAS3, a *Saccharomyces cerevisiae* gene encoding a peroxisomal integral membrane protein essential for peroxisome biogenesis. *J Cell Biol* **114**:1167-78.
106. Hohmann, S., and P. A. Meacock. 1998. Thiamin metabolism and thiamin diphosphate-dependent enzymes in the yeast *Saccharomyces cerevisiae*: genetic regulation. *Biochimica et Biophysica Acta* **1385**:201-219.
107. Holroyd, C., and R. Erdmann. 2001. Protein translocation Machineries of Peroxisomes. *FEBS Letters*. **25030**:1-5.
108. Honsho, M., S. Tamura, N. Shimozawa, Y. Suzuki, N. Kondo, and Y. Fujiki. 1998. Mutation in PEX16 is causal in the peroxisome-deficient Zellweger syndrome of complementation group D. *Am J Hum Genet* **63**:1622-30.
109. Höpfner, D., M. van den Berg, P. Philippse, H. F. Tabak, and E. H. Hettema. 2001. A role for Vps1p, actin, and the myo motor in peroxisome abundance and inheritance in *Saccharomyces cerevisiae*. *The Journal Cell Biol* **155**:979-990.
110. Hoshi, M., A. Takashima, K. Noguchi, M. Murayama, M. Sato, S. Kondo, Y. Saitoh, K. Ishiguro, T. Hoshino, and K. Imahori. 1996. Regulation of mitochondrial pyruvate dehydrogenase activity by tau protein kinase I/glycogen synthase kinase 3 beta in brain. *Proc. Natl. Acad. Sci. USA* **93**:2719-2723.
<http://psort.ncbi.nlm.nih.gov/cgi-bin...>
111. <http://www.ch.embnet.org/cgi-bin/TMPRED>.
112. <http://www.ncbi.nlm.nih.gov/Genbank/index.html>.
113. Huhse, B., P. Rehling, M. Albertini, L. Blank, K. Meller, and W. H. Kunau. 1998. Pex17p of *Saccharomyces cerevisiae* is a novel peroxin and component of the peroxisomal protein translocation machinery. *J Cell Biol* **140**:49-60.
114. Immler, D., D. Gremm, D. Kirsch, B. Spengler, and H. E. Meyer. 1998. Identification of phosphorylated proteins from thrombin-activated human platelets isolated by two-dimensional gel electrophoresis by electrospray ionization-tandem mass spectrometry (ESI-MS/MS) and liquid chromatography-electrospray ionization-mass spectrometry (LC-ESI-MS). *Electrophoresis* **19**:1015-1023.
115. Jank, B., B. Habermann, R. J. Schweyen, and T. A. Link. 1993. PMP47, a peroxisomal homologue of mitochondrial solute carrier proteins. *Trends Biochem Sci* **18**:427-8.
116. Jansen, G. A., R. Ofman, S. Ferdinandusse, L. Ijlst, A. O. Muijsers, O. H. Skjeldal, O. Stokke, C. Jakobs, G. T. Besley, J. E. Wraith, and R. J. Wanders. 1997. Refsum disease is caused by mutations in the phytanoyl-CoA hydroxylase gene. *Nat Genet* **17**:190-3.
117. Jardim, A., W. Lui, E. Zheleznova, and B. Ullman. 2000. Peroxisomal targeting signal-1 receptor PEX5 from Leishmania donovani-molecular, biochemical, and immunocytochemical characterization. *J Biol Chem* **275**:13637-44.
118. Jiang, Y., and S. Ferro-Novick. 1994. Identification of yeast component A: reconstitution of the geranylgeranyltransferase that modifies Ypt1p and Sec4p. *Proc. Natl. Acad. Sci. USA* **91**:4377-4381.
119. Johnson, D. R., L. J. Knoll, D. E. Levin, and J. I. Gordon. 1994. *Saccharomyces cerevisiae* contains four fatty acid activation (FAA) genes: an assessment of their role in regulating protein N-myristylation and cellular lipid metabolism. *J Cell Biol* **127**:751-62.
120. Johnson, M. A., W. B. Snyder, J. L. Cereghino, M. Veenhuis, S. Subramani, and J. M. Cregg. 2001. *Pichia pastoris* Pex14p, a phosphorylated peroxisomal membrane protein, is part of a PTS-receptor docking complex and interacts with may peroxins. *Yeast* **18**:621-641.
121. Jones, E. W. 1977. Proteinase mutants of *Saccharomyces cerevisiae*. *Genetics* **85**:23-33.
122. Jones, J. M., J. C. Morrell, and S. J. Gould. 2001. Multiple distinct targeting signals in integral peroxisomal membrane proteins. *J Cell Biol* **153**:1141-50.
123. Jones, J. M., K. Nau, M. T. Geraghty, R. Erdmann, and S. J. Gould. 1999. Identification of peroxisomal acyl-CoA thioesterases in yeast and humans. *J Biol Chem* **274**:9216-23.
124. Kal, A. J., A. J. van Zonneveld, V. Benes, M. van den Berg, M. G. Koerkamp, K. Albermann, N. Strack, J. M. Ruijter, A. Richter, B. Dujon, W. Ansorge, and H. F. Tabak. 1999. Dynamics of gene expression revealed by comparison of serial analysis of gene expression transcript profiles from yeast grown on two different carbon sources. *Mol Biol Cell* **10**:1859-72.
125. Kalish, J. E., C. I. Chen, S. J. Gould, and P. A. Watkins. 1995. Peroxisomal activation of long- and very long-chain fatty acids in the yeast *Pichia pastoris*. *Biochem Biophys Res Commun* **206**:335-40.
126. Kalish, J. E., G. A. Keller, J. C. Morrell, S. J. Mihalik, B. Smith, J. M. Cregg, and S. J. Gould. 1996. Characterization of a novel component of the peroxisomal protein import apparatus using fluorescent peroxisomal proteins. *EMBO J* **15**:3275-85.
127. Kammerer, S., A. Holzinger, U. Welsch, and A. A. Roscher. 1998. Cloning and characterization of a gene encoding the human peroxisomal assembly protein Pex3p. *FEBS Lett*. **429**:53-60.
128. Karpichev, I. V., Y. Luo, R. C. Marians, and G. M. Small. 1997. A complex containing two transcription factors regulates peroxisome proliferation and the coordinate induction of beta-oxidation enzymes in *Saccharomyces cerevisiae*. *Mol Cell Biol* **17**:69-80.
129. Klein, A. T. J., P. Barnett, G. Bottger, D. Konings, H. F. Tabak, and B. Distel. 2001. Recognition of the peroxisomal targeting signal type 1 by the protein import receptor Pex5p. *J Biol Chem* **2765**:15034-41.
130. Klein, A. T. J., M. van den Berg, G. Bottger, H. F. Tabak, and B. Distel. 2002. *Saccharomyces cerevisiae* acyl-CoA oxidase follows a novel, non-PTS1, import pathway into peroxisomes that is dependent on Pex5p. *J Biol Chem*. **in press**.
131. Klein, H. P., and L. Jahnke. 1968. Cellular localization of acetyl-Coenzym A synthetase in yeast. *Journal Bacteriology* **96**:1632-1639.

133. **Klein, H. P., and L. Jahnke.** 1971. Variations in the localization of acetyl-Coenzyme A synthetase in aerobic yeast cells. *Journal Bacteriology* **106**:596-602.
134. **Knoll, L. J., D. R. Johnson, and J. I. Gordon.** 1995. Complementation of *Saccharomyces cerevisiae* strains containing fatty acid activation gene (FAA) deletions with a mammalian acyl-CoA synthetase. *J Biol Chem* **270**:10861-7.
135. **Koller, A., W. B. Snyder, K. N. Faber, T. J. Wenzel, L. Rangell, G. A. Keller, and S. Subramani.** 1999. Pex22p of *Pichia pastoris*, essential for peroxisomal matrix protein import, anchors the ubiquitin-conjugating enzyme, Pex4p, on the peroxisomal membrane. *J Cell Biol* **146**:99-112.
136. **Komori, M., J. A. Kiel, and M. Veenhuis.** 1999. The peroxisomal membrane protein Pex14p of Hansenula polymorpha is phosphorylated in vivo. *FEBS Lett* **457**:397-9.
137. **Kotti, T. J., K. Savolainen, H. M. Helander, A. Yagi, D. K. Novikov, N. Kakkinnen, E. Conzelmann, J. K. Hiltunen, and W. Schmitz.** 2000. Mouse {alpha}-methylacyl-CoA racemase - the same gene product is simultaneously located in mitochondria and peroxisomes. *J Biol Chem*.
138. **Kragler, F., G. Lametschwandtner, J. Christmann, A. Hartig, and J. J. Harada.** 1998. Identification and analysis of the plant peroxisomal targeting signal 1 receptor *NtPEX5*. *Proc Natl Acad Sci U S A* **95**:13336-41.
139. **Krimmer, T., D. Rapaport, M. Ryan, C. Meisinger, C. K. Kassenbrock, E. Blachly-Dyson, M. Forte, M. G. Douglas, W. Neupert, F. E. Nargang, and N. Pfanner.** 2001. Biogenesis of Porin of the outer mitochondrial membrane involves an import pathway via receptors and the general import pore of the TOM complex. *J Cell Biol* **152**:289-300.
140. **Kunau, W. H., S. Buhne, M. de la Garza, C. Kionka, M. Mateblowski, U. Schultz-Borchard, and R. Thieringer.** 1988. Comparative enzymology of beta-oxidation. *Biochem Soc Trans* **16**:418-20.
141. **Kunau, W. H., and R. Erdmann.** 1998. Peroxisome biogenesis: back to the endoplasmic reticulum? *Curr Biol* **8**:R299-302.
142. **Laemmli, U. K.** 1970. Cleavage of structural proteins during the assembly of the head of bacteriophage T4. *Nature* **227**:680-5.
143. **Lametschwandtner, G., C. Brocard, M. Fransen, P. Van Veldhoven, J. Berger, and A. Hartig.** 1998. The difference in recognition of terminal tripeptides as peroxisomal targeting signal 1 between yeast and human is due to different affinities of their receptor Pex5p to the cognate signal and to residues adjacent to it. *J Biol Chem* **273**:33635-43.
144. **Lazarow, P. B., and C. De Duve.** 1976. A fatty acyl-CoA oxidizing system in rat liver peroxisomes; enhancement by clofibrate, a hypolipidemic drug. *Proc Natl Acad Sci U S A* **73**:2043-6.
145. **Lazarow, P. B., and Y. Fujiki.** 1985. Biogenesis of peroxisomes. *Annu Rev Cell Biol* **1**:489-530.
146. **Lee, F. J., L. W. Lin, and J. A. Smith.** 1996. Acetyl-CoA hydrolase involved in acetate utilization in *Saccharomyces cerevisiae*. *Biochim Biophys Acta* **1297**:105-109.
147. **Lee, F.-J., L.-W. Lin, and J. A. Smith.** 1990. A glucose-repressible gene encodes acetyl-CoA hydrolase from *Saccharomyces cerevisiae*. *The Journal of Biological Chemistry* **265**:7413-7418.
148. **Linder, P., and A. Prat.** 1990. Baker's yeast, the new work horse in protein synthesis studies: Analyzing eucaryotic translation initiation. *BioEssays* **12**:519-526.
149. **Liu, H., X. Tan, K. A. Russel, M. Veenhuis, and J. M. Cregg.** 1995. PER3, a gene required for peroxisome biogenesis in *Pichia pastoris*, encodes a peoxisomal membrane protein involved in protein import. *J Biol Chem* **270**.
150. **Lorenz, P., A. G. Maier, E. Baumgart, R. Erdmann, and C. Clayton.** 1998. Elongation and clustering of glycosomes in *Trypanosoma brucei* overexpressing the glycosomal Pex11p. *EMBO J* **17**:3542-55.
151. **Mannella, C. A., A. F. Neuwald, and C. E. Lawrence.** 1996. Detection of likely transmembrane beta strand regions in sequences of mitochondrial pore proteins using Gibbs sampler. *J Bioenerg. Biomembr.* **28**:163-169.
152. **Margolin, W.** 2000. Green Fluorescent protein as a Reporter for Macromolecular Lokalisation in Bacterial Cells. *Methods* **20**:62-72.
153. **Marshall, P. A., J. M. Dyer, M. E. Quick, and J. M. Goodman.** 1996. Redox-sensitive homodimerization of Pex11p: a proposed mechanism to regulate peroxisomal division. *J Cell Biol* **135**:123-37.
154. **Marshall, P. A., Y. I. Krimkevich, R. H. Lark, J. M. Dyer, M. Veenhuis, and J. M. Goodman.** 1995. Pmp27 promotes peroxisomal proliferation. *J Cell Biol* **129**:345-55.
155. **Marzioch, M., R. Erdmann, M. Veenhuis, and W. H. Kunau.** 1994. PAS7 encodes a novel yeast member of the WD-40 protein family essential for import of 3-oxoacyl-CoA thiolase, a PTS2-containing protein, into peroxisomes. *EMBO J* **13**:4908-18.
156. **Mathur, J., N. Mathur, and M. Hülskamp.** 2002. Simultaneous visualization of peroxisomes and cytoskeletal elements reveals actin and not microtubule-based peroxisome motility in plants. *Plant Phys* **128**:1031-1045.
157. **Matsuzono, Y., N. Kinoshita, S. Tamura, N. Shimozawa, M. Hamasaki, K. Ghaedi, R. J. Wanders, Y. Suzuki, N. Kondo, and Y. Fujiki.** 1999. Human PEX19: cDNA cloning by functional complementation, mutation analysis in a patient with Zellweger syndrome, and potential role in peroxisomal membrane assembly. *Proc Natl Acad Sci U S A* **96**:2116-21.
158. **McCammon, M. T., C. A. Dowds, K. Orth, C. R. Moomaw, C. A. Slaughter, and J. M. Goodman.** 1990. Sorting of peroxisomal membrane protein PMP47 from *Candida boidinii* into peroxisomal membranes of *Saccharomyces cerevisiae*. *J Biol Chem* **265**:20098-105.
159. **McCammon, M. T., J. A. McNew, P. J. Willy, and J. M. Goodman.** 1994. An internal region of the peroxisomal membrane protein PMP47 is essential for sorting to peroxisomes. *J Cell Biol* **124**:915-25.

160. **McCollum, D., E. Monosov, and S. Subramani.** 1993. The pas8 mutant of *Pichia pastoris* exhibits the peroxisomal protein import deficiencies of Zellweger syndrome cells--the PAS8 protein binds to the COOH-terminal tripeptide peroxisomal targeting signal, and is a member of the TPR protein family [published erratum appears in J Cell Biol 1993 Sep;122(5):following 1143]. *J Cell Biol* **121**:761-74.
161. **McNew, J. A., and J. M. Goodman.** 1994. An oligomeric protein is imported into peroxisomes in vivo. *J Cell Biol* **127**:1245-57.
162. **Mewes, H. W., K. Heumann, A. Kaps, K. Mayer, and Pfeiffer et al.** 1999. MIPS: a database for genomes and protein sequences. *Nucleic Acids Res* **27**:44-48.
163. **Mihalik, S. J., J. C. Morrell, D. Kim, K. A. Sacksteder, P. A. Watkins, and S. J. Gould.** 1997. Identification of PAHX, a Refsum disease gene. *Nat Genet* **17**:185-9.
164. **Moreno de la Garza, M., U. Schultz-Bochard, J. W. Crabb, and W.-H. Kunau.** 1985. Peroxisomal beta-oxidation system of *Candida tropicalis*. Purification of a multifunctional protein possessing enoyl-CoA hydratase, 3-hydroxyacyl-CoA dehydrogenase and 3-hydroxyacyl-CoA epimerase activities. *Eur J Biochem* **148**:285-291.
165. **Moser, H. W.** 1999. Genotype-phenotype correlations in disorders of peroxisome biogenesis. *Molecular Genetics and Metabolism* **68**:316-327.
166. **Motley, A. M., E. H. Hettema, E. M. Hogenhout, P. Brites, A. L. ten Asbroek, F. A. Wijburg, F. Baas, H. S. Heijmans, H. F. Tabak, R. J. Wanders, and B. Distel.** 1997. Rhizomelic chondrodysplasia punctata is a peroxisomal protein targeting disease caused by a non-functional PTS2 receptor. *Nat Genet* **15**:377-80.
167. **Motley, A. M., E. H. Hettema, R. Ketting, R. Plasterk, and H. F. Tabak.** 2000. *Caenorhabditis elegans* has a single pathway to target matrix proteins to peroxisomes. *EMBO Rep.* **1**:40-46.
168. **Mozdy, A. D., McCaffery, J.M. and Shaw, J.M.** 2000. Dnm1p GFTase-mediated Mitochondrial Fission is a multi-step process requiring the novel integral membrane component Fis1p. *J Cell Biol* **151**:367-379.
169. **Murakami, H., G. Blobel, and D. Pain.** 1993. Signal sequence region of mitochondrial precursor proteins binds to mitochondrial import receptor. *Proc. Natl Acad Sci USA* **90**:3358-62.
170. **Nakagawa, T., T. Imanaka, M. Morita, K. Ishiguro, H. Yurimoto, A. Yamashita, N. Kato, and Y. Sakai.** 2000. Peroxisomal membrane protein Pmp47 is essential in the metabolism of middle-chain fatty acid in yeast peroxisomes and is associated with peroxisome proliferation. *J Biol Chem* **275**:3455-61.
171. **Nakamura, N., A. Hirata, Y. Ohsumi, and Y. Wada.** 1997. Vam2/Vps41p and Vam6/Vps39p are components of a protein complex on the vacuolar membranes and involved in the vacuolar assembly in the yeast *Saccharomyces cerevisiae*. *J Biol Chem* **272**:11344-9.
172. **Nobelpreis.** Pressemitteilung für den Nobelpreis des Jahres 1999 für Physiologie oder Medizin <http://www.nobel.se/medicine/laureates/1999/press-ty.html>.
173. **Nuttley, W. M., A. M. Brade, G. A. Eitzen, M. Veenhuis, J. D. Aitchinson, R. K. Szilard, J. R. Glover, and R. A. Rachubinski.** 1994. PAY4, a gene required for peroxisome assembly in the yeast *Yarrowia lipolytica*, encodes a novel member of a family of putative ATPases. *J Biol Chem* **269**:556-566.
174. **Nuttley, W. M., R. K. Szilard, J. J. Smith, M. Veenhuis, and R. A. Rachubinski.** 1995. The PAH2 gene is required for peroxisome assembly in the methylotrophic yeast *Hansenula polymorpha* and encodes a member of the tetratricopeptide repeat family of proteins. *Gene* **160**:33-39.
175. **Okumoto, K., I. Abe, and Y. Fujiki.** 2000. Molecular anatomy of the peroxin Pex12p: ring finger domain is essential for Pex12p function and interacts with the peroxisome-targeting signal type 1-receptor Pex5p and a ring peroxin, Pex10p. *J Biol Chem* **2000**:25700-10.
176. **Omer, C. A., and J. B. Gibbs.** 1994. Protein prenylation in eucaryotic microorganisms: genetics, biology and biochemistry. *Mol. Microbiol* **11**:219-225.
177. **Osumi, T., T. Tsukamoto, S. Hata, S. Yokota, S. Miura, Y. Fujiki, M. Hijikata, S. Miyazawa, and T. Hashimoto.** 1991. Amino-terminal presequence of the precursor of peroxisomal 3-ketoacyl-CoA thiolase is a cleavable signal peptide for peroxisomal targeting. *Biochem. Biophys. Res. Commun.* **181**:947-954.
178. **Otera, H., T. Harano, M. Honsho, K. Ghaedi, S. Mukai, A. Tanaka, A. Kawai, N. Shimizu, and Y. Fujiki.** 2000. The mammalian peroxin Pex5pL, the longer isoform of the mobile peroxisome targeting signal (PTS) type 1 transporter, translocates the Pex7p. PTS2 protein complex into peroxisomes via its initial docking site, Pex14p. *J Biol Chem* **275**:21703-14.
179. **Palmieri, F.** 1994. Mitochondrial carrier proteins. *FEBS Lett* **346**:48-54.
180. **Palmieri, L., G. Agrimi, M. J. Runswick, I. M. Fearnley, F. Palmieri, and J. E. Walker.** 2001. Identification in *Saccharomyces cerevisiae* of two isoforms of a novel mitochondrial transporter for 2-oxoadipate and 2-oxoglutarate. *J Biol Chem* **276**:1916-22.
181. **Palmieri, L., F. M. Lasorsa, A. Vozza, G. Agrimi, G. Fiermonte, M. J. Runswick, J. E. Walker, and F. Palmieri.** 2000. Identification and functions of new transporters in yeast mitochondria. *Biochim Biophys Acta* **1459**:363-9.
182. **Palmieri, L., H. Rottensteiner, W. Girzalsky, P. Scarcia, F. Palmieri, and R. Erdmann.** 2001. Identification and functional reconstitution of the yeast peroxisomal adenine nucleotide transporter. *EMBO* **20**:1-11.
183. **Palmieri, L., M. J. Runswick, G. Fiermonte, J. F. Walker, and F. Palmieri.** 2000. Yeast mitochondrial carriers: bacterial expression, biochemical identification and metabolic significance. *Journal of Bioenergetics and Biomembranes* **32**:67-77.
184. **Passreiter, M., M. Anton, D. Lay, R. Frank, C. Harter, F. T. Wieland, K. Gorgas, and W. W. Just.** 1998. Peroxisome biogenesis: Involvement of ARF and Coatomer. *Journal of Cell Biology* **141**:373-383.

185. **Patel, S., and M. Latterich.** 1998. The AAA team: related ATPases with diverse functions. *Trend Cell Biol* **8**.
186. **Paulsen, I. T., M. K. Sliwinski, B. Nellisen, A. Goffeau, and M. H. Saier.** 1998. Unified inventory of established and putative transporters encoded within the complete genome of *Saccharomyces cerevisiae*. *FEBS Lett* **430**:116-125.
187. **Pohlmeier, K., J. Soll, R. Grimm, K. Hill, and R. Wagner.** 1998. A high-conductance solute channel in the chloroplastic outer envelope from Pea. *Plant Cell* **10**:1207-1216.
188. **Portsteffen, H., A. Beyer, E. Becker, C. Epplen, A. Pawlak, W.-H. Kunau, and G. Dodt.** 1997. Human PEX1 is mutated in complementation group 1 of the peroxisome biogenesis disorders. *Nature Genet* **17**:449-452.
189. **Prasher, D. C., V. K. Eckenrode, W. W. Ward, F. G. Predergast, and M. Cormier.** 1992. Primary structure of the *Aequorea victoria* green-fluorescent protein. *Gene* **111**:229-233.
190. **Purdue, P. E., and P. B. Lazarow.** 2001. Peroxisome Biogenesis. *Annu. Rev. Cell Dev. Biol.* **17**:701-752.
191. **Purdue, P. E., and P. B. Lazarow.** 1996. Targeting of human catalase to peroxisomes is dependent upon a novel COOH-terminal peroxisomal targeting sequence. *J Cell Biol.* **134**:849-62.
192. **Purdue, P. E., X. Yang, and P. B. Lazarow.** 1998. Pex18p and Pex21p, a novel pair of related peroxins essential for peroxisomal targeting by the PTS2 pathway. *J Cell Biol.* **143**:1859-69.
193. **Purdue, P. E., J. W. Zhang, M. Skoneczny, and P. B. Lazarow.** 1997. Rhizomelic chondrodysplasia punctata is caused by deficiency of human PEX7, a homologue of the yeast PTS2 receptor. *Nat Genet* **15**:381-4.
194. **Rassow, J., and N. Pfanner.** 2000. The protein import machinery of the mitochondrial membranes. *Traffic* **1**:457-464.
195. **Rehling, P., M. Marzioch, F. Niesen, E. Wittke, M. Veenhuis, and W. H. Kunau.** 1996. The import receptor for the peroxisomal targeting signal 2 (PTS2) in *Saccharomyces cerevisiae* is encoded by the PAST7 gene. *EMBOJ* **15**:2901-13.
196. **Rehling, P., A. Skaletz-Rorowski, W. Girzalsky, T. Voorn-Brouwer, M. M. Franse, B. Distel, M. Veenhuis, W. H. Kunau, and R. Erdmann.** 2000. Pex8p, an intraperoxisomal peroxin of *Saccharomyces cerevisiae* required for protein transport into peroxisomes binds the PTS1 receptor pex5p. *J Biol Chem* **275**:3593-602.
197. **Reumann, S.** 2000. The structural properties of plant peroxisomes and their metabolic significance. *Biol Chem* **381**:639-48.
198. **Reumann, S., E. Maier, R. Benz, and H. W. Heldt.** 1995. The membrane of leaf peroxisomes contains a porin-like channel. *J Biol Chem* **270**:17559-65.
199. **Rigaut, G., A. Shevchenko, B. Rutz, M. Wilm, M. Mann, and B. Seraphin.** 1999. A generic protein purification method for protein complex characterization and proteome exploration. *Nature Biotechnology* **17**:1030-1032.
200. **Rizzo, W. B., and D. A. Craft.** 2000. Sjogren-Larsson syndrome. Accumulation of free fatty alcohols in cultured fibroblasts and plasma. *J Lipid Res* **41**:1077-1081.
201. **Rothman, J. H., I. Howald, and T. H. Stevens.** 1989. Characterization of genes required for protein sorting and vacuolar function in the yeast *Saccharomyces cerevisiae*. *EMBO J* **8**:2057-65.
202. **Rottensteiner, H., A. J. Kal, M. Filipits, M. Binder, B. Hamilton, H. F. Tabak, and H. Ruis.** 1996. Pip2p: a transcriptional regulator of peroxisome proliferation in the yeast *Saccharomyces cerevisiae*. *EMBO J* **15**:2924-34.
203. **Sakai, Y., P. A. Marshall, A. Saiganji, K. Takabe, H. Saiki, N. Kato, and J. M. Goodman.** 1995. The *Candida boidinii* peroxisomal membrane protein Pmp30 has a role in peroxisomal proliferation and is functionally homologous to Pmp27 from *Saccharomyces cerevisiae*. *J Bacteriol* **177**:6773-81.
204. **Sambrook, J., E. F. Fritsch, and T. Maniatis.** 1989. Molecular Cloning: A Laboratory Manual. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
205. **Schäfer, H.** 2000. Diplomarbeit. Ruhr Universität, Bochum.
206. **Schäfer, H., K. Nau, A. Sickmann, R. Erdmann, and H. E. Meyer.** 2001. Identification of peroxisomal membrane proteins of *Saccharomyces cerevisiae* by mass spectrometry. *Electrophoresis* **22**:2955-2968.
207. **Schepers, L., M. Casteels, J. Vamecq, G. Parmentier, P. P. Van Veldhoven, and G. P. Mannaerts.** 1988. beta-oxidation of carboxyl side chain of prostaglandin E2 in rat liver peroxisomes and mitochondria. *J Biol Chem* **274**:5666-5673.
208. **Schrader, M., B. E. Reuber, J. C. Morrell, G. Jimenez-Sanchez, C. Obie, T. A. Stroh, D. Valle, T. A. Schroer, and S. J. Gould.** 1998. Expression of PEX11beta mediates peroxisome proliferation in the absence of extracellular stimuli. *J Biol Chem* **273**:29607-14.
209. **Shani, N., G. Jimenez-Sanchez, G. Steel, M. Dean, and D. Valle.** 1997. Identification of a fourth half ABC transporter in the human peroxisomal membrane. *Hum Mol Genet* **6**:1925-31.
210. **Shani, N., and D. Valle.** 1996. A *Saccharomyces cerevisiae* homolog of the human adrenoleukodystrophy transporter is a heterodimer of two half ATP-binding cassette transporters. *Proc Natl Acad Sci U S A* **93**:11901-6.
211. **Shimizu, N., R. Itoh, Y. Hirono, H. Otera, K. Ghaedi, K. Tateishi, S. Tamura, K. Okumoto, T. Harano, S. Mukai, and Y. Fujiki.** 1999. The peroxin Pex14p. cDNA cloning by functional complementation on a Chinese hamster ovary cell mutant, characterization and functional analysis. *J Biol Chem* **274**:12593-604.

212. **Shimozawa, N., T. Tsukamoto, Y. Suzuki, T. Orii, Y. Shirayoshi, T. Mori, and Y. Fujiki.** 1992. A human gene responsible for Zellweger syndrome that affects peroxisome assembly. *Science* **255**:1132-1134.
213. **Skoneczny, N., and P. B. Lazarow.** 1998. A novel, non PTS1, peroxisomal import route dependent on the PTS1 receptor Pex5p. *Mol. Biol. Cell* **9**:348.
214. **Smith, J. J., and R. A. Rachubinski.** 2001. A role for the peroxin Pex8p in Pex20p-dependent thiolase import into peroxisomes of the yeast *Yarrowia lipolytica*. *J Biol Chem.* **276**:1618-25.
215. **Snyder, W. B., K. N. Faber, T. J. Wenzel, A. Koller, G. H. Luers, L. Rangell, G. A. Keller, and S. Subramani.** 1999. Pex19p interacts with Pex3p and Pex10p and is essential for peroxisome biogenesis in *Pichia pastoris*. *Mol Biol Cell* **10**:1745-61.
216. **Snyder, W. B., A. Koller, A. J. Choy, M. A. Johnson, J. M. Cregg, L. Rangell, G. A. Keller, and S. Subramani.** 1999. Pex17p is required for import of both peroxisome membrane and luminal proteins and interacts with Pex19p and the peroxisome targeting signal-receptor docking complex in *Pichia pastoris*. *Mol Biol Cell* **10**:4005-19.
217. **South, S. T., and S. J. Gould.** 1999. Peroxisome synthesis in the absence of preexisting peroxisomes. *J Cell Biol* **144**:255-66.
218. **Spong, A. P., and S. Subramani.** 1993. Cloning and characterization of PAS5: a gene required for peroxisome biogenesis in the methylotrophic yeast *Pichia pastoris*. *J Cell Biol* **123**:535-48.
219. **Stein, K., A. Schell-Steven, R. Erdmann, and H. Rottensteiner.** 2002. Interactions of Pex7p and Pex18p/Pex21p with the peroxisomal docking machinery: implications for the first steps in PTS2 protein import, eingereicht bei Mol Cell Biol am 14.02.2002, akzeptiert am 23.05.2002 .
220. **Subramani, S.** 1998. Components involved in peroxisome import, biogenesis, proliferation, turnover, and movement. *Physiol Rev* **78**:171-88.
221. **Subramani, S., A. Koller, and W. B. Snyder.** 2000. Import of peroxisomal matrix and membrane proteins. *Annu Rev Biochem* **69**:399-418.
222. **Sulter, G. J., K. Verheyden, M. G., W. Harder, and M. Veenhuis.** 1993. The in vitro permeability of yeast peroxisomal membranes is caused by a 31 kDa integral membrane protein. *Yeast* **9**:733-742.
223. **Swinkels, B. W., S. J. Gould, A. G. Bodnar, R. A. Rachubinski, and S. Subramani.** 1991. A novel, cleavable peroxisomal targeting signal at the amino-terminus of the rat 3-ketoacyl-CoA thiolase. *EMBO J* **10**:3255-62.
224. **Szilard, R. K., V. I. Titorenko, M. Veenhuis, and R. A. Rachubinski.** 1995. Pay32p of the yeast *Yarrowia lipolytica* is an intraperoxisomal component of the matrix protein translocation machinery. *J Cell Biol* **131**:1453-69.
225. **Tam, Y. Y. C., and R. A. Rachubinski.** 2002. *Yarrowia lipolytica* cell mutant for the PEX24 gene encoding a peroxisomal membrane peroxin mislocalize peroxisomal proteins and accumulate membrane structures containing peroxisomal matrix and membrane proteins. *Mol Biol Cell* **10**.
226. **Tan, X., H. R. Waterham, M. Veenhuis, and J. M. Cregg.** 1995. The Hansenula polymorpha PER8 gene encodes a novel peroxisomal integral membrane protein involved in proliferation. *J Cell Biol.* **128**:307-319.
227. **Terlecky, S. R., W. M. Nuttley, D. McCollum, E. Sock, and S. Subramani.** 1995. The *Pichia pastoris* peroxisomal protein PAS8p is the receptor for the C-terminal tripeptide peroxisomal targeting signal. *EMBO J* **14**:3627-34.
228. **Thomas, D. a. S.-K., Y.** 1991. The synthesis of the two S-adenosyl-methionine synthetases is differently regulated in *Saccharomyces cerevisiae*. *Mol Gen Genet* **226**:224-32.
229. **Titorenko, V. I., and R. A. Rachubinski.** 2001. Dynamics of peroxisome assembly and function. *Trends Cell Biol* **11**:22-29.
230. **Titorenko, V. I., and R. A. Rachubinski.** 1998. Mutants of the yeast *Yarrowia lipolytica* defective in protein exit from the endoplasmic reticulum are also defective in peroxisome biogenesis. *Mol Cell Biol* **18**:2789-803.
231. **Trotter, P.** 2001. The genetics of fatty acid metabolism in *Saccharomyces cerevisiae*. *Annu. rev. Nutr.* **21**:97-119.
232. **Tsien, R. Y.** 1998. The green fluorescent protein. *Annu rev Biochem.* **67**:509-544.
233. **Tsukamoto, T., S. Miura, and Y. Fujiki.** 1991. Restoration by a 35K membrane protein of peroxisome assembly in a peroxisome-deficient mammalian cell mutant. *Nature* **350**:77-81.
234. **Tsukamoto, T., S. Miura, T. Nakai, S. Yokota, N. Shimozawa, Y. Suzuki, T. Orii, Y. Fujiki, F. Sakai, A. Bogaki, H. Yasuno, and T. Osumi.** 1995. Peroxisomal assembly factor-2, a putative ATPase cloned by functional complementation of a peroxisome-deficient mammalian cell mutant. *Nature Genetics* **11**:395-401.
235. **Urquhart, A. J., D. Kennedy, S. J. Gould, and D. I. Crane.** 2000. Interaction of Pex5p, the type 1 peroxisome targeting signal receptor, with the peroxisomal membrane proteins Pex14p and Pex13p. *J Biol Chem* **275**:4127-36.
236. **van der Klei, I. J., R. E. Hilbrands, J. A. K. W. Kiel, S. W. Rasmussen, J. M. Cregg, and M. Veenhuis.** 1998. The ubiquitin-conjugating enzyme Pex4p of *Hansenula polymorpha* is required for efficient functioning of the PTS1 import machinery. *EMBO* **17**:3608-3618.
237. **van der Klei, I. J., R. E. Hilbrands, G. J. Swaving, H. R. Waterham, E. G. Vrieling, V. I. Titorenko, J. M. Cregg, W. Harder, and M. Veenhuis.** 1995. The *Hansenula polymorpha* PER3 gene is essential for the import of PTS1 proteins into the peroxisomal matrix. *J.Biol.Chem* **270**:17229-17236.
238. **van der Klei, I. J., and M. Veenhuis.** 1996. Peroxisome biogenesis in the yeast *Hansenula polymorpha*: a structural and functional analysis. *Ann N Y Acad Sci* **804**:47-59.

239. **Van der Leij, I., M. M. Franse, Y. Elgersma, B. Distel, and H. F. Tabak.** 1993. PAS10 is a tetratricopeptide-repeat protein that is essential for the import of most matrix proteins into peroxisomes of *Saccharomyces cerevisiae* [published erratum appears in Proc Natl Acad Sci U S A 1995 Jun 6;92(12):5759]. *Proc Natl Acad Sci U S A* **90**:11782-6.
240. **van Heusden, G. P. H., M. Nebohacova, T. L. A. Overbeeke, and H. Y. Steensma.** 1998. The *Saccharomyces cerevisiae* TGL2 gene encodes a protein with lipolytic activity and can complement an *Escherichia coli* Diacylglycerol Kinase disruptant. *Yeast* **14**:225-232.
241. **van Roermund, C. W., Y. Elgersma, N. Singh, R. J. Wanders, and H. F. Tabak.** 1995. The membrane of peroxisomes in *Saccharomyces cerevisiae* is impermeable to NAD(H) and acetyl-CoA under in vivo conditions. *EMBO J* **14**:3480-6.
242. **van Roermund, C. W., E. H. Hettema, A. J. Kal, M. van den Berg, H. F. Tabak, and R. J. Wanders.** 1998. Peroxisomal beta-oxidation of polyunsaturated fatty acids in *Saccharomyces cerevisiae*: isocitrate dehydrogenase provides NADPH for reduction of double bonds at even positions. *EMBO J* **17**:677-87.
243. **van Roermund, C. W., H. F. Tabak, M. van Den Berg, R. J. Wanders, and E. H. Hettema.** 2000. Pex11p plays a primary role in medium-chain fatty acid oxidation, a process that affects peroxisome number and size in *Saccharomyces cerevisiae*. *J Cell Biol* **150**:489-98.
244. **Van Veldhoven, P. P., W. W. Just, and G. P. Mannaerts.** 1987. Permeability of the peroxisomal membrane to cofactors of beta-oxidation. Evidence for the presence of a pore-forming protein. *J Biol Chem* **262**:4310-8.
245. **Veenhuis, M., M. Mateblowski, W. H. Kunau, and W. Harder.** 1987. Proliferation of microbodies in *Saccharomyces cerevisiae*. *Yeast* **3**:77-84.
246. **Voorn-Brouwer, T., I. van der Leij, W. Hemrika, B. Distel, and H. F. Tabak.** 1993. Sequence of the PAS8 gene, the product of which is essential for biogenesis of peroxisomes in *Saccharomyces cerevisiae*. *Biochim Biophys Acta* **1216**:325-8.
247. **Voss, H., V. Benes, M. A. Andrade, A. Valencia, S. Rechmann, c. Teodoru, C. Schwager, V. Paces, C. Sander, and W. Ansorge.** 1997. DNA Sequencing and Analysis of 130 kb from Yeast Chromosome XV. *Yeast* **13**:655-672.
248. **Walker, J. E.** 1992. The mitochondrial transport family. *Curr. Opin. Struct. Biol.* **2**:519-526.
249. **Walton, P. A., P. E. Hill, and S. Subramani.** 1995. Import of stably folded proteins into peroxisomes. *Mol Biol Cell* **6**:675-83.
250. **Walton, P. A., M. Wendland, S. Subramani, R. A. Rachubinski, and W. J. Welch.** 1994. Involvement of 70-kD heat-shock proteins in peroxisomal import. *J Cell Biol.* **125**:1037-46.
251. **Wanders, R. J., and J. M. Tager.** 1998. Lipid metabolism in peroxisomes in relation to human disease. *Mol Aspects Med* **19**:69-154.
252. **Warren, D. S., J. C. Morrell, H. W. Moser, D. Valle, and S. J. Gould.** 1998. Identification of PEX10, the gene defective in complementation group 7 of the peroxisome-biogenesis disorders. *Am J Hum Genet* **63**:347-59.
253. **Waterham, H. R., Y. de Vries, K. A. Russel, W. Xie, M. Veenhuis, and J. M. Cregg.** 1996. The *Pichia pastoris* PER6 gene product is a peroxisomal integral membrane protein essential for peroxisome biogenesis and has sequence similarity to the Zellweger syndrome protein PAF-1. *Mol. Cell. Biol.* **16**:2527-2536.
254. **Watkins, P. A., J. F. Lu, S. J. Steinberg, S. J. Gould, K. D. Smith, and L. T. Braiterman.** 1998. Disruption of the *Saccharomyces cerevisiae* FAT1 gene decreases very long-chain fatty acyl-CoA synthetase activity and elevates intracellular very long-chain fatty acid concentrations. *J Biol Chem* **273**:18210-9.
255. **Weber, F. E., G. Minestrini, J. H. Dyer, M. Werder, D. Boffelli, S. Compassi, E. Wehrli, R. M. Thomas, G. Schulthess, and H. Hauser.** 1997. Molecular cloning of a peroxisomal Ca²⁺-dependent member of the mitochondrial carrier superfamily. *Proc Natl Acad Sci U S A* **94**:8509-14.
256. **Wiebel, F. F., and W. H. Kunau.** 1992. The Pas2 protein essential for peroxisome biogenesis is related to ubiquitin-conjugating enzymes. *Nature* **359**.
257. **Wiemer, E. A., S. R. Terlecky, W. M. Nuttley, and S. Subramani.** 1995. Characterization of the yeast and human receptors for the carboxy-terminal tripeptide peroxisomal targeting signal. *Cold Spring Harb Symp Quant Biol* **60**:637-48.
258. **Wiemer, E. A. C., G. H. Luers, K. N. Faber, T. Wenzel, M. Veenhuis, and S. Subramani.** 1996. Isolation and characterization of Pas2p, a peroxisomal membrane protein essential for peroxisome biogenesis in the methylotrophic yeast *Pichia pastoris*. *J Biol Chem* **271**:18973-80.
259. **Wierzbicki, A. S., M. D. Lloyd, C. J. Schofield, M. D. Feher, and F. B. Gibberd.** 2002. Refsum's disease: a peroxisomal disorder affecting phytanic acid alpha-oxidation. *Journal of Neurochemistry* **80**:727-735.
260. **Will, G. K., M. Soukupova, X. Hong, K. S. Erdmann, J. A. Kiel, G. Dodt, W. H. Kunau, and R. Erdmann.** 1999. Identification and characterization of the human orthologue of yeast Pex14p. *Mol Cell Biol* **19**:2265-77.
261. **Wimmer, C., M. Schmid, M. Veenhuis, and C. Gietl.** 1998. The plant PTS1 receptor: similarities and differences to its human and yeast counterparts. *Plant J* **16**:453-64.
262. **Winston, F., C. Dollard, and S. L. Ricupero-Hovasse.** 1995. Construction of a set of convenient *Saccharomyces cerevisiae* strains that are isogenic to S288C. *Yeast* **11**:53-5.
263. **Witter, D. J., and C. D. Poulter.** 1996. Yeast geranylgeranyltransferase type II: steady state kinetic studies of the recombinant enzyme. *Biochemistry* **35**:10454-10463.

264. **Wu, K., P. Wu, and J. P. Aris.** 2001. Nucleolar protein Nop12p participates in synthesis of 25S rRNA in *Saccharomyces cerevisiae*. *Nucleic Acids Res* **29**:2938-49.
265. **Wylin, T., M. Baes, C. Brees, G. P. Mannaerts, M. Fransen, and P. P. Van Veldhoven.** 1998. Identification and characterization of human PMP34, a protein closely related to the peroxisomal integral membrane protein PMP47 of *Candida boidinii*. *Eur J Biochem* **258**:332-8.
266. **Yaffe, M. P., and G. Schatz.** 1984. Two nuclear mutations that block mitochondrial protein import in yeast. *Proc. Natl. Acad. Sci. USA* **81**:4819-4823.
267. **Yahraus, T., N. Braverman, G. Dodt, J. E. Kalish, J. C. Morrell, H. W. Moser, D. Valle, and S. J. Gould.** 1996. The peroxisome biogenesis disorder group 4 gene, PXAAA1, encodes a cytoplasmic ATPase required for stability of the PTS1 receptor. *EMBO J* **15**:2914-23.
268. **Yang, X., P. E. Purdue, and P. Lazarow.** 2001. Eci1p uses PTS1 to enter peroxisomes: either its own or that of a partner, Dci1p. *Eur Jour Cell Biol* **80**:126-138.
269. **Yashiroda, H., T. Oguchi, Y. Yasuda, Toh-EA, and Y. Kikuchi.** 1996. Bul1, a new protein that bind to the Rsp5 ubiquitin ligase in *Saccharomyces cerevisiae*. *Mol Cell Biol* **16**:3255-63.
270. **Zhang, J. W., and P. B. Lazarow.** 1995. PEB1 (PAS7) in *Saccharomyces cerevisiae* encodes a hydrophilic, intra-peroxisomal protein that is a member of the WD repeat family and is essential for the import of thiolase into peroxisomes. *J Cell Biol* **129**:65-80.
271. **Zhang, J. W., and P. B. Lazarow.** 1996. Peb1p (Pas7p) is an intraperoxisomal receptor for the NH₂-terminal, type 2, peroxisomal targeting sequence of thiolase: Peb1p itself is targeted to peroxisomes by an NH₂-terminal peptide. *J Cell Biol* **132**:325-34.