

Publications

1. **Foung, A.** (1968) Studies on the origin of the deoxyribose of purine deoxyribonucleotides. Ph.D. Thesis, University of California at Riverside.
2. **Foung, A.** and Norman A. W. (1968) Evidence for more than one pathway in the formation of purine deoxyribonucleotides. *FEBS Lett.* **1**, 35-38
3. **Foung, A.** and Norman, A. W. (1969) Biosynthesis of purine nucleotides in chick liver and intestine. *Biochim. Biophys. Acta*, **174**, 405-408
4. **Knowles, A. F.**, Guillory, R. J. and Racker, E. (1971) Partial resolution of the enzymes catalyzing oxidative phosphorylation. XXIV. A factor required for the binding of mitochondrial adenosine triphosphatase to the inner mitochondrial membrane. *J. Biol. Chem.* **246**, 2672-2679
5. **Knowles, A. F.** and Penefsky, H. S. (1972) The subunit structure of beef heart mitochondrial adenosine triphosphatase. Isolation procedures. *J. Biol. Chem.* **247**, 6617-6623
6. **Knowles, A. F.** and Penefsky, H. S. (1972) The subunit structure of beef heart mitochondrial adenosine triphosphatase. Physical and chemical properties of isolated subunits. *J. Biol. Chem.* **247**, 6624-6630
7. **Knowles, A. F.**, Kandrach, A., Racker, E. and Khorana, H. G. (1975) Acetyl phosphatidyl-ethanolamine in the reconstitution of ion pumps. *J. Biol. Chem.* **250**, 1809-1813
8. **Knowles, A. F.** and Racker, E. (1975) Formation of adenosine triphosphate from Pi and adenosine diphosphate by purified Ca^{2+} -adenosine triphosphatase. *J. Biol. Chem.* **250**, 1949-1951
9. **Knowles, A. F.** and Racker, E. (1975) Properties of a reconstituted Ca^{2+} -pump. *J. Biol. Chem.* **250**, 3538-3544
10. Racker, E., **Knowles, A. F.**, and Eytan, E. (1975) Resolution and reconstitution of ion pumps. *Annals N. Y. Acad. Sci.* **264**, 17-33
11. Gasko, O. D., **Knowles, A. F.**, Shertzer, H. G., Suolinna, E.-M., and Racker, E. (1976) The use of ion exchange resins for studying ion transport in biological systems. *Anal. Biochem.* **72**, 57-65
12. **Knowles, A. F.**, Eytan, E. and Racker, E. (1976) Interaction of phospholipids with the Ca^{2+} -adenosine triphosphatase from sarcoplasmic reticulum. *J. Biol. Chem.* **251**, 5161-5165
13. **Knowles, A. F.** and Kaplan, N. O. (1980) Oxidative phosphorylation and ATPase activities of human tumor mitochondria. *Biochim. Biophys. Acta*, **590**, 170-181
14. Gautsch, J. W., **Knowles, A. F.**, Jensen, F. C., and Kaplan, N. O. (1980) Highly efficient induction of type C retroviruses by human tumor in athymic mice. *Proc. Natl. Acad. Sci. U.S.A.*, **77**, 2247-2250
15. **Knowles, A. F.**, Zimniak, P., Alfonzo, M., Zimniak, A., and Racker, E. (1980) Isolation and characterization of proteolipids from sarcoplasmic reticulum. *J. Membr. Biol.* **55**, 233-239
16. **Knowles, A. F.** and Kaplan, N. O. (1981) Variable ATPase composition of human tumor plasma membranes. *Biochem. Biophys. Res. Commun.* **99**, 1443-1448
17. **Knowles, A. F.**, Leis, J. F., and Kaplan, N. O. (1981) Isolation and characterization of plasma membranes from transplantable human astrocytoma, oat cell carcinoma and melanomas. *Cancer Res.* **41**, 4301-4308
18. **Knowles, A. F.** (1982) Differential effects of 2,4-dinitrophenol and valinomycin ($+K^+$) on uncoupler-stimulated ATPase of human tumor mitochondria. *Biochim. Biophys. Acta*, **681**, 62-71

19. Beattie, G. M., **Knowles, A. F.**, Jensen, F. C., Baird, S. M., and Kaplan, N. O. (1982) Induction of sarcomas in athymic mice. *Proc. Natl. Acad. Sci. U.S.A.*, **79**, 3033-3036
20. Gautsch, J. W., **Knowles, A. F.**, Jensen, F. C., and Kaplan, N. O. (1982) Human tumor-induced expression of endogenous murine leukemia viruses of athymic mice in *Proceedings of the Third International Workshop on Nude Mice*, **2**, 601-610 (N. D. Reed, ed.) Gustav Fischer Inc., N. Y.
21. **Knowles, A. F.**, Isler, R. E., and Reece, J. F. (1983) The common occurrence of ATP diphosphohydrolase in mammalian plasma membranes. *Biochim. Biophys. Acta*, **731**, 88-96
22. **Knowles, A. F.** (1984) Characteristics of adenine nucleotide fluxes and transport in human tumor mitochondria. *Biochim. Biophys. Acta*, **764**, 203-212
23. **Knowles, A. F.** and Leng, L. (1984) Purification of a low affinity $Mg^{2+}(Ca^{2+})$ -ATPase from the plasma membranes of a human oat cell carcinoma. *J. Biol. Chem.* **259**, 10919-10924
24. **Knowles, A. F.**, Salas-Prato, M., and Villela, J. (1985) Epidermal growth factor inhibits growth while increasing the expression of an ecto- Ca^{2+} -ATPase of a human hepatoma cell line. *Biochem. Biophys. Res. Commun.* **126**, 8-14
25. Leis, J. F., **Knowles, A. F.** and Kaplan, N. O. (1985) Demonstration of separate phosphotyrosyl- and phosphoseryl-histone phosphatase activities in the plasma membranes of a human astrocytoma. *Arch. Biochem. Biophys.* **239**, 320-326
26. **Knowles, A. F.** and Lawrence, C. M. (1985) "The enzymatic synthesis and hydrolysis of [^{32}P]phosphatidylinositol phosphate" *Biochem. Biophys. Res. Commun.* **129**, 220-225
27. **Knowles, A. F.** (1986) Endogenous phosphorylation of proteins and phosphatidylinositol in the plasma membranes of a human astrocytoma. *Arch. Biochem. Biophys.* **249**, 76-87
28. Imes, S. S., Kaplan, N. O., and **Knowles, A. F.** (1987) Plasma membrane-associated phosphatase activities hydrolyzing [^{32}P]phosphotyrosylhistones and [^{32}P]phosphatidyl-inositol phosphate. *Anal. Biochem.* **161**, 316-322
29. **Knowles, A. F.** (1988) Inhibition of growth and induction of enzyme activities in a clonal human hepatoma cell line (Li-7A): Comparison of the effects of epidermal growth factor and an anti-epidermal growth factor receptor antibody. *J. Cell. Physiol.* **134**, 109-115
30. **Knowles, A. F.** (1988) Differential expression of ecto- Mg^{2+} -ATPase and ecto- Ca^{2+} -ATPase activities in human hepatoma cells. *Arch. Biochem. Biophys.* **263**, 264-271
31. Murray, S. L. and **Knowles, A. F.** (1990) Butyrate induces an ecto- Mg^{2+} -ATPase activity in Li-7A human hepatoma cells. *J. Cell. Physiol.* **144**, 26-35
32. **Knowles, A. F.** (1990) Synergistic modulation of ecto- Ca^{2+} -ATPase activity of hepatoma (Li-7A) cells by epidermal growth factor and cyclic AMP. *Arch. Biochem. Biophys.* **283**, 114-119
33. **Knowles, A. F.** and Murray, S. L. (1990) Effect of inhibition of protein synthesis, RNA synthesis and tyrosine kinase on the induction of ectoATPases of human hepatoma (Li-7A) cells in *Biological Actions of Extracellular ATP* (G. Dubyak and J. S. Fedan, eds.) Annals N. Y. Acad. Sci. **603**, pp. 519-522
34. Gao, J.-P. and **Knowles, A. F.** (1993) The EGF/cAMP inducible ecto- Ca^{2+} -ATPase of human hepatoma Li-7A cells is similar to rat liver ectoATPase/hepatocyte cell adhesion molecule (Cell-CAM 105). *Arch. Biochem. Biophys.* **303**, 90-97
35. Shi, X.-J. and **Knowles, A. F.** (1994) Prevalence of the mercurial-sensitive ectoATPase in small cell lung carcinoma. Characterization and partial purification. *Arch. Biochem. Biophys.* **315**, 177-184

36. **Knowles, A. F.** (1995) The rat liver ecto-ATPase/C-CAM cDNA detects induction of carcinoembryonic antigen but not the mercurial-insensitive ecto-ATPase in human hepatoma Li-7A cells treated by epidermal growth factor and cholera toxin. *Biochem. Biophys. Res. Commun.*, **207**, 529-535
37. Strobel, R. S., Nagy, A. K., **Knowles, A. F.**, Beugel, J. and Rosenberg, M. D. (1996) Chicken oviductal ecto-ATP-diphosphohydrolase. Purification and characterization. *J. Biol. Chem.* **271**, 16323-16331
38. **Knowles, A. F.** and Penefsky, H. S. (1997) Reconstitution of beef heart mitochondrial F₀F₁ in reverse phase evaporation vesicles. *Biochim. Biophys. Acta*, **1329**, 311-320
39. **Knowles, A. F.** (1997) Human tumor ecto-ATPases in *Ecto-ATPases. Recent Progress on structure and function* (L. Plesner, T. L. Kirley and A. F. Knowles, eds) Plenum Press, NY and London, pp. 101-110
40. **Knowles, A. F.**, Gao, J.-P. and Murray, S. L. (1997) Is the rat liver ecto-ATPase identical to C-CAM/pp120, a cell adhesion molecule? in *Ecto-ATPases. Recent Progress on structure and function* (L. Plesner, T. L. Kirley and A. F. Knowles, eds) Plenum Press, NY and London, pp. 267-275
41. Nagy, A. K., **Knowles, A. F.** and Nagami, G. T. (1998) Molecular cloning of the chicken oviduct ecto-ATP-diphosphohydrolase *J. Biol. Chem.* **273**, 16043-16049
42. Caldwell, C. C., Davis, M. D. and **Knowles, A. F.** (1999) Ectonucleotidases of avian gizzard smooth muscle and liver plasma membranes: A comparative study. *Arch. Biochem. Biophys.* **362**, 46-58
43. **Knowles, A. F.** and Nagy, A. K. (1999) Inhibition of an ecto-ATP-diphosphohydrlase by azide. *Eur. J. Biochem.* **262**, 349-358
44. **Knowles, A. F.**, Nagy, A. K., Caldwell, C. C. and Strobel, R. S. (2000) Modulators of E-type ATPases in *Ecto-ATPases and Related Ectonuclotidases* (L. Vanduffel and R. Lemmens, eds) pp. 39-52
45. Nagy, A. K., **Knowles, A. F.** and Treiman, L. J. (2000) Enzyme kinetical identification of E-type ATPases in brain tissues and in PC12 cells in *Ecto-ATPases and Related Ectonuclotidases* (L. Vanduffel and R. Lemmens, eds) pp. 53-60
46. Caldwell, C., Hornyak, S. C., Pendleton, E., Campbell, D. and **Knowles, A. F.** (2001) Regulation of chicken gizzard ecto-ATPase activity by modulators that affect its oligomerization status. *Arch. Biochem. Biophys.* **387**, 107-116
47. Swank, D. M., Bartoo, M. L. **Knowles, A. F.**, Iliffe, C., Bernstein, S. I., Molloy, J. E. and Sparrow, J. C. (2001) Alternative Exon-encoded regions of *Drosophila* myosin heavy chain modualte ATPase rates and actin sliding velocity. *J. Biol. Chem.* **276**, 15117-15124
48. Swank, D. M., **Knowles, A. F.**, Suggs, J. A., Sarsoza, F., Lee, A., Maughan, D. W. and Bernstein, S. I. (2002) The myosin converter domain modulates muscle performance. *Nature Cell Biology*, **4**, 312-317
49. **Knowles, A. F.**, Nagy, A. K., Strobel, R. S. and Wu-Weis, M. (2002) Purification, characterization, cloning and expression of the chicken liver ecto-ATP-diphosphohydrolase. *Eur. J. Biochem.* **269**, 2373-2382
50. Littlefield, K. P., Swank, D. M., Sanchez, B. M., **Knowles, A. F.**, Warshaw, D. M. and Bernstein, S. I. (2003) Converter domain modulates kinetic properties of *Drosophila* myosin. *Am. J. Physiol. Cell Physiol.* **284**, C1031-1038
51. Wen, L., Caldwell, C. C. **Knowles, A. F.** (2003) Poly(ADP-ribose)polymerase (PARP)

- activation and changes in Bax protein expression associated with ATP-mediated apoptosis in human HEK293-P2X7 cells. *Mol. Pharmacol.* **63**, 706-713
52. Swank, D. M., **Knowles, A. F.**, Kronert, W. A., Suggs, J. A., Morrill, G. E., Nikkhoy, M., Manipon, G. G. and Bernstein, I. S. (2003) Variable N-terminal regions of muscle myosin heavy chain modulate ATPase rate and actin sliding velocity. *J. Biol. Chem.*, **278**, 17475-17482
53. **Knowles, A. F.** and Chiang, W.-C. (2003) Enzymatic and transcriptional regulation of human ecto-ATPase/E-NTPDase 2. *Arch. Biochem. Biophys.* **418**, 217-227
54. Wen, L. and **Knowles, A. F.** (2003) Extracellular ATP and adenosine induce cell apoptosis of human hepatoma Li-7A cells via the A3 adenosine receptor. *Br. J. Pharmacol.* **140**, 1009-1018
55. Dranoff J. A., Kruglov, E. A., Toure, J., Braun, N., Zimmermann, H., Jain, D., **Knowles, A. F.**, Sevigny J. (2004) Ectonucleotidase NTPDase2 is selectively down-regulated in biliary cirrhosis. *J. Investigig Med.* **52**, 475-82.
56. Kukulski, F., Levesque, S. A. Lavoie, E. G., Lecka, J., Bigonnessee, F., **Knowles, A. F.**, Robson, S. C., Kirley, T. L. and Sevigny, J. (2005) Comparative hydrolysis of P2 receptor agonists by NTPDases 1, 2, 3, and 8. *Purinergic Signalling* **1**, 193-204
57. Mukasa, T., Lee, Y. and **Knowles, A. F.** (2005) Either the carboxyl- or the amino-terminal region of the human ecto-ATPase (E-NTPDase 2) confers detergent and temperature sensitivity to the chicken ecto-ATP-diphosphohydrolase (E-NTPDase 8). *Biochemistry*, **44**, 11660-11170
58. Miller, B. M., Zhang, S., Suggs, J. A., Swank, D. M., Littlefield, K. P., **Knowles, A. F.** and Bernstein, S. I. (2005) An alternative domain near the nucleotide-binding site of Drosophila muscle myosin affects ATPase kinetics. *J. Mol. Biol.* **353**, 14-25
59. **Knowles, A. F.** and Li, C. (2006) Molecular cloning and characterization of expressed human ecto-nucleoside triphosphate diphosphohydrolase 8 (E-NTPDase 8) and its soluble extracellular domain. *Biochemistry* **45**, 7323-7333
60. Javed, R., Yarimizu, K., Pelletier, N., Li, C. and **Knowles, A. F.** (2007) Mutagenesis of lysine 62, asparagine 64, and conserved region 1 reduces the activity of human ecto-ATPase (NTPDase 2). *Biochemistry* **46**, 6617-6627
61. Cammarato, A., Dambacher, C., **Knowles, A. F.**, Kronert, W. A. Bodmer, R., Ocorr, K. and Bernstein, S. I. (in press) Myosin transducer mutations differentially affect motor function, myofibril structure, and the performance of skeletal and cardiac muscles. *Mol. Biol. Cell*
62. Chiang, W.-C. and **Knowles, A. F.** (submitted) Transmembrane domain interactions affect the stability of the extracellular domain of the human NTPDase2. *Arch. Biophys. Biochem.*