

WILLIAM H. ESCHENFELDT, Ph.D.

PROFESSIONAL EXPERIENCE

Argonne National Laboratory (1996-present)
STA - Molecular Biologist

Amoco BioProducts Corporation (1988 - 1995)
Staff Research Scientist

National Cancer Institute (1981 - 1988)
Senior Staff Fellow

University of Kentucky (1979 - 1981)
Public Health Service Postdoctoral Fellow

EDUCATIONAL SUMMARY

Ph.D. Microbiology, Michigan State University (1979)

M.S. Microbiology, Michigan State University (1975)

B.S. Microbiology, University of Illinois (1972)

PUBLICATIONS

Nusca T.D., Kim Y., Maltseva N., Lee J.Y., Eschenfeldt W., Stols L., Schofield M.M., Scaglione J.B., Dixon S.D., Oves-Costales D., Challis G.L., Hanna P.C., Pflieger B.F., Joachimiak A., Sherman D.H. (2012) Functional and structural analysis of the siderophore synthetase AsbB through reconstitution of the petrobactin biosynthetic pathway from *Bacillus anthracis*. *J Biol Chem* **287**, 16058-16072

Kim, Y., Babnigg, G., Jedrzejczak, R., Eschenfeldt, W.H., Li, H., Maltseva, N., Hatzos-Skintges, C., Gu, M., Makowska-Grzytska, M., Wu, R., An, H., Chhor, G. and Joachimiak, A. (2011) High-throughput protein purification and quality assessment for crystallization. *Methods* **55**, 12-28

Eschenfeldt, W.H., Maltseva, N., Stols, L., Donnelly, M.I., Gu, M., Nocek, B., Tan, K., Kim, Y., and Joachimiak, A. (2010) Cleavable C-terminal His-tag vectors for structure determination. *J Struct Funct Genomics* **11**, 31-39

Eschenfeldt, W.H., Stols, L., Millard, C.S., Joachimiak, A. and Donnelly, M.I. (2009) A family of LIC vectors for high-throughput cloning and purification of proteins. in *Methods in Molecular Biology: High Throughput Protein Expression and Purification* (Doyle, S.A., ed.) **498**, 105-115

Kim, Y., Bigelow, L., Borovilos, M., Dementieva, I., Duggan, E., Eschenfeldt, W., Hatzos, C., Joachimiak, G., Li, H., Maltseva, N., Mulligan, R., Quartey, P., Sather, A., Stols, L., Vollkart, L., Wu, R., Zhou, M. and Joachimiak, A. (2008) High-throughput protein purification for X-ray crystallography and NMR. *Adv Protein Chem Struct Biol* **75**, 85-105

Gräslund, S., et al. (2008) Protein production and purification. *Nature Methods* **5**, 135-146

Stols, L., Zhou, M., Eschenfeldt, W.H., Millard, C. S., Abdullah, J., Collart, F.R., Kim, Y. and Donnelly, M.I. (2007) New vectors for co-expression of proteins: Structure of *Bacillus subtilis* ScoAB obtained by high-throughput protocols. *Protein Expr. Purif.* **53**, 396-403

Donnelly, M.I., Zhou, M., Millard, C.S., Clancy, S., Stols, L., Eschenfeldt, W.H., Collart, F.R. and Joachimiak, A. (2006) An expression vector tailored for large-scale, high-throughput purification of recombinant proteins. *Protein Expr. Purif.* **47**, 446-454

Eirich, L.D., Craft, D.L., Steinberg, L., Asif, A., Eschenfeldt, W.H., Stols, L., Donnelly, M.I., Wilson, C.R. (2004) Cloning and Characterization of Three Fatty Alcohol Oxidase Genes from *Candida tropicalis* Strain ATCC 20336. *Appl Environ Microbiol* **70**, 4872-4879

Eschenfeldt, W.H., Zhang, Y., Samaha, H., Stols, L., Eirich, L.D., Wilson, C.R., and Donnelly, M.I. (2003) Transformation of fatty acids catalyzed by cytochrome P450 monooxygenase enzymes of *Candida tropicalis*. *Appl. Environ. Microbiol.* **69**, 5992-5999

Eschenfeldt, W.H., Stols, L., Rosenbaum, H., Khambatta, Z.S., Quait-Randall, E., Wu, S., Kilgore, D.C., Trent, J.D., and Donnelly, M.D. (2001) DNA from uncultured organisms as a source of 2,5 diketo-D-gluconic acid reductases. *Appl. Environ. Microbiol.* **67**, 4206-4214

Manrow, R.E., Leone, A., Krug, M.S., Eschenfeldt, W.H., and Berger, S.L. (1992) The human prothymosin α gene family contains several processed pseudogenes lacking deleterious lesions. *Genomics* **13**, 319-331

Eschenfeldt, W.H., Manrow, R.E., Krug, M.S., and Berger, S.L. (1989) Isolation and partial sequencing of the human prothymosin α gene family. Evidence against export of the gene products. *J. Biol. Chem.* **264**, 7546-7555

Eschenfeldt, W.H. and Berger, S.L. (1987) Purification of large double-stranded cDNA fragments. in *Guide to Molecular Cloning Techniques* (Berger, S.L. and Kimmel, A.R., eds) pp. 335-337, Academic Press, Orlando, FL

Eschenfeldt, W.H., Puskas, R.S., and Berger, S.L. (1987) Homopolymeric tailing. in *Guide to Molecular Cloning Techniques* (Berger, S.L. and Kimmel, A.R., eds) pp. 337-342, Academic Press, Orlando, FL

Eschenfeldt, W.H. and Berger, S.L. (1986) The human prothymosin α gene is polymorphic and induced upon growth stimulation: evidence using a cloned cDNA. *Proc. Nat. Acad. Sci. U.S.* **83**, 9403-9407

Berger, S.L., Wallace, D.M., Puskas, R.S., and Eschenfeldt, W.H. (1983) Reverse transcriptase and its associated ribonuclease H: Interplay of two enzyme activities controls the yield of single-stranded cDNA. *Biochem.* **22**, 2365-2373

Eschenfeldt, W.H., Cohen, B.G., and Rhoads, R.E. (1983) Structure of the 5'-terminus of hen oviduct lysozyme messenger ribonucleic acid. *J. Biol. Chem.* **258**, 13076-13081

Malek, L.T., Eschenfeldt, W.H., Munns, T.W., and Rhoads, R.E. (1981) Heterogeneity of the 5'-terminus of hen ovalbumin messenger ribonucleic acid. *Nuc. Acids Res.* **9**, 1657-1673

Voss, E.W., Eschenfeldt, W.H., and Root, R.T. (1976) Fluorescein: A complete antigenic group? *Immunochem.* **13**, 447-453

Eschenfeldt, W.H. and Patterson, R.J. (1975) Do antibody binding techniques identify polysomes synthesizing a specific protein? *Biochem. Biophys. Res. Comm.* **67**, 935-945

Eschenfeldt, W.H. and Patterson, R.J. (1975) Polysome isolation by Sepharose column chromatography. *Prep. Biochem.* **5**, 247-255

PATENTS

Donnelly, M., Eschenfeldt, W.H., and Trent, J. (2012) Methods for Converting Glucose to Ascorbic Acid. United States Patent No. 8,216,811

Donnelly, M., Eschenfeldt, W.H., and Trent, J. (2011) Method of Using a Polynucleotide Encoding 2,5-Diketo-D-Gluconic Acid Reductase. United States Patent No. 7,922,483

Donnelly, M., Eschenfeldt, W.H., and Trent, J. (2009) Mutant 2,5-Diketo-L-Gluconic Acid Reductases. United States Patent No. 7,563,609

Donnelly, M., Eschenfeldt, W.H., and Trent, J. (2008) Mutant 2,5-Diketo-L-Gluconic Acid Reductases. United States Patent No. 7,374,917

Hauptmann, R., Eisenreich, R., Eschenfeldt, W., and Khambatta, Z. (2007) 4-ketocarotenoids in flower petals. United States Patent No. 7,223,909

Donnelly, M., Eschenfeldt, W.H., and Trent, J. (2005) 2,5-diketo-D-gluconic acid reductases and methods of use. United States Patent No. 6,864,075

Donnelly, M., Eschenfeldt, W.H., and Trent, J. (2003) 2,5-diketo-D-gluconic acid reductases and methods of use. United States Patent No. 6,576,452

Hauptmann, R., Eschenfeldt, W.H., English, J., and Brinkhaus, F.L. (1997) Enhanced carotenoid accumulation in storage organs of genetically engineered plants. United States Patent No. 5,618,988