

**Lucy Stols**  
[lstols@anl.gov](mailto:lstols@anl.gov)

## **Education**

Loyola University Chicago, IL	BS	1978	Biology
Roosevelt University Chicago, IL	MS	1983	Biochemistry and Analytical Instrumentation

## **Professional Experience**

***STA/ Biochemical Specialist*** Argonne National Laboratory, Bioscience Division  
Argonne, IL (2005- present)

***STA/ Biochemical Specialist*** Argonne National Laboratory, Environmental Research  
Division, Argonne National Laboratory (1994-2005)

***Research Specialist***, Vysis Product Line Division, Amoco Technology, Naperville, IL  
(1992-1994)

***Senior Research Technician***, Biotechnology Division, Amoco Technology, Naperville,  
IL (1989-1992)

***Research Technician I***, Biotechnology Division, Amoco Technology, Naperville, IL  
(1987-1989)

***Research Technician II***, Biotechnology Division, Amoco Technology, Naperville, IL  
(1985-1987)

***Application Specialist***, Midwest Region, Dionex Corporation,  
Sunnyvale, CA (1984-1985)

***Senior Research Assistant***, Pathology Department, Northwestern University Cancer  
Center, Chicago, IL (1980-1984)

***Research Assistant***, Pathology Department, Immunology Section, University of  
Chicago Hospitals (1979-1980)

***Assistant Administrator***, Medical Education Division, Louis A Weiss Memorial  
Hospital, Chicago, IL (1978-1979)

## **Patents:**

Ngheim, N.P., Donnelly, M.I., Millard, C.S., and Stols, L. Method for the production of dicarboxylic acids. USPTO Patent 5,869,301, Feb. 9, 1999.

Donnelly, M.I., Millard, C.S., and Stols, L. Mutant Escherichia coli strain with increased production of succinic acid. USPTO Patent 5,770,435, Jun. 23, 1998.

Bittner, M. L., Stols, L.M., Prorok, C.F., Cruickshank, K. A., Production of chromosome region specific DNA sequences and transamination. USPTO Patent 5,506,350, April 9, 1996.

## **Publications:**

Nusca, T.D., Kim., Maltseva, N., Lee, J.Y., Eschenfeldt, W., Stols, L., Schofield, N.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**, 16058-72.

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

Structural Genomics Consortium; China Structural Genomics Consortium; Northeast Structural Genomics Consortium, Graslund S., Nordlund P., Weigelt, J., Hallberg, B.M., Bray, J., Gileadi, O., Knapp, S., Oppermann, U., Arrowsmith, C., Hui, R., Ming, J., de-Paganon, S., Park, H.W., Savchenko, A., Yee, A., Edwards, A., Vincentelli, R., Cambillau, C., Kim, R., Kim, S.H., Rao, Z., Shi, Y., Terwillinger, T.C. kim, C.Y., Hung, L.W., Waldo, G.S. Pel;eg, Y., Albeck, S., Unger T., Dym, O., Prilusky, J., Sussman, J.L., Stevens, R.C., Lesely, S.A., Wilson, I.A., Joachimiak, A., Collart F., Dementeva, I., Donnelly, M.I., Eschenfeldt, W.H., Kim, Y., Stols, L., Wu, R., Zhou, M., Burley, S.K., Emtage, J.S. Sauder, J.M., Thompson, D., Bain, L., Luz, J., Gheyi, T., Zhang, F., Atwell, S., Almo, S.C., Bonanno, J.B., Fiser, A., Swaminathan, S., Studier, F.W., Chance, M.R., Sali, A., Acton, T.B., Xiao, R., Zhao, L., Ma, L.C., Hunt, J.F., Tong, L., Cunningham, K., Inouye, M., Anderson, S., Janjua, H., Shastry, R., Ho, C.K., Wang, D., Wang, H., Jiang, M., Montelione, G.T. Stuart, D.I., Owens, R.J., Daenke, S., Shutz, A., Heinemann, U., Yokoyama, S., Bussow, K., Gunsalus, K.C., (2008) Protein production and purification. *Nat. Methods* **5**, 135-46.

Stols, L., Zhou, M., Eschenfeldt, W.H., Millard, C.S., Abdullah, J., Collart, F.R., Kim, Y., Donnelly, M.I., (2007) New vectors for co-expression of proteins: structure of Bacillus subtilis Sco AB obtained by high throughput protocols. *Protein Expr. Purif.* **53(2)** 396-403.

Donnelly, M.I., Zhou, M., Millard, C.S., Clancy, S., Stols, L., Eschenfeldt, W.E., 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.E., Stols, L., Donnelly, M.I., and Wilson, C.R. (2004) Cloning and characterization of three fatty alcohol oxidase genes from *Candida tropicalis* strain ATCC 20336. *Appl. Environ. Micro.* **70**, 4872-4879.

Stols, L., Sanville Millard, C., Dementieva, I. and Donnelly, M.I. (2004) Production of selenomethionine-labeled proteins in two-liter plastic bottles for structure determination. *J. Struct. Funct. Genomics* **5**, 95-102.

Millard, C.S., Stols, L., Quartey, P., Kim, Y., Demetieva, I., and Donnelly, M.I. (2003) A less laborious approach to the high-throughput production of recombinant proteins in *Escherichia coli* using 2-liter plastic bottles *Prot. Express. Purif.* **29**, 311-320.

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

Stols, L., Gu, M., Dieckman, L., Raffin, R., Collart, R.F., and Donnelly, M.I. (2002) A new vector for high throughput, ligation independent cloning encoding a TEV protease cleavage site. *Prot. Expr. Purif.* **25**, 8-15.

Dieckman, L., Gu, M., Stols, L., Donnelly, M.I., and Collart, F.R. (2002) High throughput methods for gene cloning and expression, *Prot. Expr. Purif.* **25**, 1-7.

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

Donnelly, M.I., Wilkins Stevens, P., Stols, L., Su, S.X., Tollaksen, S., Giometti, C.S., and Joachimiak, A. (2001) Expression of a highly toxic protein, Bax, in *Escherichia coli* by attachment of a leader peptide derived from the GroES co-chaperone. *Protein Expr. Purif.* **22**, 422-429.

Stols, L. and Donnelly, M.I. (1997) Production of succinic acid through overexpression of NAD<sup>+</sup> dependent malic enzyme in an *Escherichia coli* mutant. *Appl. Environ. Microbiol.* **63**, 2695-2701.

Stols, L., Kulkarni, G., Harris, B.G., and Donnelly, M.I. (1997) Expression of *Ascaris suum* malic enzyme in a mutant *Escherichia coli* allows production of succinic acid from glucose. *Appl. Biochem. Biotechnol.* **63-65**, 153-158.

Morrison, L.E., Stols, L.M. (1993) Sensitive fluorescence-based thermodynamic and kinetic measurements of DNA hybridization in solution. *Biochemistry* **32(12)**: 3095-104.

Morrison, L.E., Halder, T.C., Stols, L. (1989) Solution-phase detection of polynucleotides using interacting fluorescent labels and competitive hybridization. *Anal.Biochem* **183(2)**: 231-44.

Stols, L., Iannaccone, P.M. (1985) Pattern of steroid interaction with inducers of aryl hydrocarbon hydroxylase activity in several cloned estradiol-responsive stromal cell strains from mouse endometrium. *J. Cell Physiol.* **123(3)**: 395-400.

Iannaccone, P.M., Fahl, W.E., Stols, L. (1984) Reproductive toxicity associated with endometrial cell mediated metabolism of benzo[a]pyrene; a combined in vitro, in vivo approach. *Carcinogenesis* **5(11)**:1437-42.

Iannaccone, P.M. Stols, L. Hollenberg, P.F. Gurka, D.P. (1983) An estradiol-responsive mouse endometrial cell strain with inducible aryl hydrocarbon hydroxylase activity. *J Cell Physiol.* **116(2)**: 227-35.

Iannaccone, P.M., Tsao, T.Y., Stols, L. (1982) Effects on mouse blastocysts of in vitro exposure to methylnitrosourea and 3-methylcholanthrene. *Cancer Res.* **42(3)**: 864-8.

## **Book Chapters**

Eschenfeldt, W.E., Stols, L., Millard, C.S., Joachimiak, A., and Donnelly, M.I., "A Family of LIC Vectors for High-Throughput Cloning and Purification of Proteins" Ch.7, *Methods and Protocols High Throughput Protein Expression and Purification* Humana Press editor Sharon A. Doyle

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., Volkart, L., Wu, R., Zhou, M., and Joachimiak, A. "High-throughput Protein Purification for Crystallography and NMR" *Advances in Protein Chemistry* Vol. 75 p.86 2008.