

## Rosemarie Wilton

### Education:

B.S. Biochemistry (1987) University of Illinois-Chicago

Ph.D. Biochemistry (1993) University of Illinois-Chicago

### Positions:

2004-present Molecular Biologist, Biosciences Division, Argonne National Laboratory

1998-2004 Assistant Molecular Biologist, Biosciences Division, Argonne National Laboratory

1993-1998 Postdoctoral Appointee, Center for Mechanistic Biology and Biotechnology, Argonne National Laboratory

### Publications:

- Makowska-Grzyska M, Kim Y, Wu R, Wilton R, Gollapalli DR, Wang XK, Zhang R, Jedrzejczak R, Mack JC, Maltseva N, Mulligan R, Binkowski TA, Gornicki P, Kuhn ML, Anderson WF, Hedstrom L, Joachimiak A. (2012) *Bacillus anthracis* Inosine 5'-Monophosphate Dehydrogenase in Action: The First Bacterial Series of Structures of Phosphate Ion-, Substrate- and Product-Bound Complexes. *Biochemistry*. 51:6148-63.
- Kern J, Wilton R, Zhang R, Binkowski TA, Joachimiak A, Schneewind O. (2011) Structure of surface layer homology (SLH) domains from *Bacillus anthracis* surface array protein. *J Biol Chem*. 286:26042-9.
- Tan, K., Tesar, C., Wilton, R., Keigher, L., Babnigg, G., and Joachimiak, A., (2010) Novel alpha-glucosidase from human gut microbiome: substrate specificities and their switch. *FASEB J*. 24:3939-49.
- P. R. Pokkuluri, M. Pessanha, Y. Y. Londer, S. J. Wood, N. E. C. Duke, R. Wilton, T. Catarino, C. A. Salgueiro, and M. Schiffer. (2008) Solution Properties of Two Novel Periplasmic Sensor Domains with *c*-Type Heme from Chemotaxis Proteins of *Geobacter sulfurreducens*: Implications for Signal Transduction. *J. Mol. Biol.* 377: 1498-1517.
- Zen K., Chen, C.X., Chen, Y.T., Wilton, R., Liu, Y. (2007) Receptor for advanced glycation endproducts mediates neutrophil migration across intestinal epithelium. *J Immunology*. 178:2483-90.
- Gu, M., Wilton, R., and Stevens, F.J. 2007. Diversity and diversification of light chains in myeloma: the specter of amyloidogenesis by proxy. *Contrib Nephrol*; 153:156-81.
- Papalia GA, Leavitt S, Bynum MA, Katsamba PS, Wilton R, Qiu H, Steukers M, Wang S, Bindu L, Phogat S, Giannetti AM, Ryan TE, Pudlak VA, Matusiewicz K, Michelson KM, Nowakowski A, Pham-Baginski A, Brooks J, Tieman BC, Bruce BD, Vaughn M, Baksh M, Cho YH, Wit MD, Smets A, Vandersmissen J, Michiels L, Myszkka DG. (2006) Comparative analysis of 10 small molecules binding to carbonic anhydrase II by different investigators using Biacore technology. *Anal Biochem*. 359:94-105.
- Chen Y., Borowicz S., Fackenthal J., Collart F.R., Myatt E., Moy S., Babnigg G., Wilton R., Boerke W.E., Schiffer M., Stevens F.J., Olopade O.I. (2006) Primary structure-based function characterization of BRCT domain replicates in BRCA1. *Biochem. Biophys. Res. Commun*. 345:188-96.
- Wilton, R., Yousef, M.A., Saxena, P., Szpunar, M., and Stevens, F.J. (2006) Expression and purification of recombinant human receptor for advanced glycation endproducts (RAGE) in *Escherichia coli*. *Protein Expr. Purif*. 47: 25-35.
- Pokkuluri, P.R., **Raffen, R.**, Dieckman, L., Boogaard, C., Stevens, F.J., and Schiffer, M. (2002) Increasing protein stability by polar surface residues: Domain-wide consequences of interactions within a loop. *Biophys. J*. 82: 391-398.
- Stols, L., Gu, M-Y., Dieckman, L., **Raffen, R.**, Collart, F.R., and Donnelly, M.I. (2002) A new vector for high throughput, ligation independent cloning encoding a TEV protease cleavage site. *Protein Expr. Purif*. 25: 8-15

- Pokkuluri, P.R., Gu, M., Cai, X., **Raffen, R.**, Stevens, F.J., and Schiffer, M. (2002) Factors contributing to decreased protein stability when aspartic acid residues are in  $\beta$ -sheet regions. *Protein Sci.* **11**: 1687-1694.
- Davis, D.P., Gallo, G., Vogen, S.M., Dul, J.L., Sciarretta, K.L., Kumar, A., **Raffen, R.**, Stevens, F.J., and Argon, Y. (2001) Both the environment and somatic mutations govern the aggregation pathway of pathogenic immunoglobulin light chain. *J. Mol. Biol.* **313**: 1021-1034.
- Lin, Y-M., **Raffen, R.**, Zhou, Y., Flavin, M.T., and Stevens, F.J. (2001) Amyloid fibril formation in microwell plates for screening of inhibitors. *Amyloid* **8**: 182-193.
- Kim Y.S., Cape S.P., Chi, E., **Raffen R.**, Wilkins-Stevens P., Stevens F.J., Manning M.C., Randolph T.W., Solomon A., Carpenter J.F. (2001) Counteracting effects of renal solutes on amyloid formation by immunoglobulin light chains. *J. Biol. Chem.* **276**: 1626-1633.
- Davis, D.P., **Raffen, R.**, Dul, J.L., Vogen, S., Williamson, E.K., Stevens, F.J., and Argon, Y. (2000) Inhibition of amyloid fiber assembly by both BiP and its target peptide. *Immunity* **13**: 433-442.
- Raffen, R.**, Dieckman, L.J., Szpunar, M., Wunschl, C., Pokkulur, P.R., Dave, P., Wilkins Stevens, P., Schiffer, M., and Stevens, F.J. (1999) Physicochemical consequences of amino acid variations that contribute to fibril formation by immunoglobulin light chains. *Protein Sci.* **8**: 509-517.
- Pokkuluri, P.R., Huang, D.B., **Raffen, R.**, Cai, X., Johnson, G., Wilkins-Stevens, P., Stevens, F.J., and Schiffer, M. 1998. A domain flip as a result of a single amino-acid substitution. *Structure.* **6**: 1067-1073.
- Raffen, R.**, Wilkins Stevens, P., Schiffer, M., and Stevens, F.J. (1998) Reengineering immunoglobulin domain interactions by introduction of charged residues. *Protein Eng.* **11**: 303-309.
- Wilkins-Stevens, P., **Raffen, R.**, Hanson, D.K., Deng, Y.-L., Berrios-Hammond, M., Westholm, F.A., Murphy, C., Eulitz, M., Wetzel, R., Solomon, A., Schiffer, M., and Stevens, F.J. (1995) Recombinant immunoglobulin variable domains generated from synthetic genes provide a system for *in vitro* characterization of light-chain amyloid proteins. *Protein Sci.* **4**: 421-432.