

Biochemistry and Biophysics 2008 Publications

Ahern, Kevin

Educational Songs

Ahern, K. and Rajagopal, I. (2008) "Central Dogma Zen", *Biochem. Mol. Biol. Educ.*

Ahern, K. (2008) "Gluconeogenesis", *Biochem. Mol. Biol. Educ.*

Ahern, K. (2008) "Translation" *Biochem. Mol. Biol. Educ.* 36, p. 88.

Ahern, K. (2008) "When Acids Are Synthesized" *Biochem. Mol. Biol. Educ.* 36, p. 243

Ahern, K. (2008) "Biochemistry Pie" *Biochem. Mol. Biol. Educ.* 36, 380-381.

Ahern, K. (2008) "Gluconeogenesis" *Biochem. Mol. Biol. Educ.* 36, 443.

Columns

Ahern, K. (2008) "WebWatch," *BioTechniques*, Vol. 44, 12 columns.

Ahern, K. (2008) "Best of the Web," *Gen. Eng. News*, Vol. 28, 22 columns.

Baird, William

Hooven, L. and Baird, W. (2008) Proteomic Analysis of MCF-7 Cells Treated with Benzo[a]pyrene, Dibenzo[a]pyrene, Coal Tar Extract, and Diesel Exhaust Extract. *J. Toxicology*.

Barbar, Elisar

Benison, G., Karplus, P.A. and Barbar, E. (2008) Interplay of Ligand Binding and Quaternary Structure in the Diverse Interactions of Dynein Light Chain LC8. *J. Mol. Biol.* **384**, 954-966.

Hall, J., Hall, A., Pursifull, N. and Barbar, E. (2008) Differences in Dynamic Structure of LC8 Monomer, Dimer and Dimer-Peptide Complexes. *Biochemistry* **47**, 11940-11952.

Barbar, E. (2008) Dynein Light Chain LC8 is a Dimerization Hub Essential in Diverse Protein Networks. *Biochemistry* **47**, 503-508. (New Concepts in Biochemistry—chosen as a Hot Article).

Beckman, Joe

- Vargas, M.R., Pehar, M., Díaz-Amarilla, P.J., Beckman, J.S., Barbeito, L. (2008) Transcriptional profile of primary astrocytes expressing ALS-linked mutant SOD1. *J. Neurosci. Res.* **86**, 3515-1525.
- Robinson, K.M., Janes, M.S., Beckman, J.S. (2008) The selective detection of mitochondrial superoxide by live cell imaging. *Nat. Protoc.* **3**, 941-947.
- Cassina, P., Cassina, A., Pehar, M., Castellanos, R., Gandelman, M., de León, A., Robinson, K.M., Mason, R.P., Beckman, J.S., Barbeito, L. and Radi, R. (2008) Mitochondrial dysfunction in SOD1G93A-bearing astrocytes promotes motor neuron degeneration: prevention by mitochondrial-targeted antioxidants. *J. Neurosci.* **28**, 4115-4122.
- Traber, M.G., Frei, B. and Beckman, J.S. (2008) Vitamin E revisited: do new data validate benefits for chronic disease prevention? *Curr. Opin. Lipidol.* **19**, 30-38.

Frei, Balz

- Drake, V.J., Frei, B. and Bouley, L.M. (2008) An error in the US Department of Agriculture nutrition database results in vitamin A values that are 6 times too high. *Am. J. Clin. Nutr.* **87**, 1067-1068.
- Frei, B. and Lawson, S. (2008) Vitamin C and cancer revisited. *Proc. Natl. Acad. Sci. USA* **105**, 11037-11038.
- Visioli, F., Smith, A., Frei, B. and Hagen, T. (2008) Lipoic acid significantly restores, in rats, the age-related decline in vasomotion. *Br. J. Pharmacol.* **153**, 1615-1622.
- Zhang, W., Bird, K.E., McMillen, T.S., LeBoeuf, R.C., Hagen, T.M. and Frei, B. (2008) Dietary α -lipoic acid supplementation inhibits atherosclerotic lesion development in apoE^{-/-} and apoE/LDL receptor^{-/-} mice. *Circulation* **117**, 421-428.
- Traber, M.G., Frei, B. and Beckman, J.S. (2008) Vitamin E revisited: do new data validate benefits for chronic disease prevention? *Current Opinion in Lipidology* **19**, 30-38.
- Frei, B., Lawson, S., Levine, M., Chen, Q. and Espey, M.G. (2008) Reply to Borst: Randomized clinical trials of high-dose intravenous vitamin C in cancer patients are warranted. *Proc. Natl. Acad. Sci. USA* **105**, E96. www.pnas.org/cgi/doi/10.1073/pnas.0810008105.

Freitag, Michael

- Lewis, Z.A., Honda, S., Khlafallah, T.K., Jeffress, J.K., Freitag, M., Mohn, F., Schübeler, D. and Selker, E.U. (2008) Relics of repeat-induced point mutation direct heterochromatin organization in *Neurospora crassa*. *Genome Research* (in press).
- Pomraning, K.R., Smith, K.M. and Freitag, M. (2008) Genome-wide high throughput analysis of DNA methylation in eukaryotes. *Methods* (doi:10.1016/j.ymeth.2008.09.022) [Published online Oct. 21, 2008].
- Smith, K.M., Kothe, G.O., Matsen, C.B., Khlafallah, T.K., Adhvaryu, K.K., Hemphill, M., Freitag, M., Motamedi, M.R. and Selker, E.U. (2008) The fungus *Neurospora crassa* displays telomeric silencing mediated by multiple sirtuins and by methylation of histone H3 lysine 9. *Epigenetics & Chromatin* 1:5 (doi:10.1186/1756-8935-1-5).
- Lee, D.W., Freitag, M., Selker, E.U. and Aramayo, R. (2008) A cytosine methyltransferase homologue is essential for sexual development in *Aspergillus nidulans*. *PLoS ONE* 3:e2531.doi:10.1371/journal.pone.0002531.
- Freitag, C.M., Cabrera, Y., Williams, M., Freitag, M. and Morrell, J.J. (2008) Fungi colonizing exposed durable wood in Hilo, HI. *Inoculum* **59**, 29.
- Uchida, M., Mouriño-Pérez, R.R., Freitag, M., Bartnicki-García, S. and Roberson, R.W. (2008) Microtubule Dynamics and the Role of Molecular Motors in *Neurospora crassa*. *Fungal Genetics and Biology* **45**, 683-692.
- Jacobson, D.J., Raju, N.B. and Freitag, M. (2008) Evidence for the absence of meiotic silencing by unpaired DNA in *Neurospora tetrasperma*. *Fungal Genetics and Biology* **45**, 351-362. This work was also featured on the journal cover.

Gombart, Fritz

- Gombart, A.F., Bhan, I., Borregaard, N., Tamez, H., Camargo, C. Jr., Koeffler, H.P. and Thadhani, R. Low plasma cathelicidin antimicrobial peptide (hCAP18) predicts increased infectious disease mortality in hemodialysis. *Clinical Infectious Diseases*, in press.
- Uh, A., Nicholson, R.C., Gonzalez, G.V., Simmons, C.F., Gombart, A., Smith, R. and Equils, O. (2008) Lipopolysaccharide stimulation of trophoblasts induces corticotropin-releasing hormone expression through MyD88. *American Journal of Obstetrics and Gynecology* **199**, 317.e1-317.e6.
- Akagi, T., Saitoh, T., O'Kelly, J., Akira, S., Gombart, A.F. and Koeffler, H.P. (2008) Impaired response to GM-CSF and G-CSF, and enhanced apoptosis in C/EBP β -deficient hematopoietic cells. *Blood* **111**, 2999-3004.

Greenwood, Jeffrey

Sprague, C.R., Fraley, T.S., Jang, H.S., Lal, S. and Greenwood, J.A. (2008) Phosphoinositide binding to the substrate regulates susceptibility to proteolysis by calpain. *J. Biol. Chem.* **283**, 9217-9223.

Gross, Michael

Pagliardini, S., Ren, J., Gray, P., VanDunk, C., Gross, M.K., Goulding, M. and Greer, J. (2008) Central Respiratory Rhythmogenesis is Abnormal in *Lbx1* Deficient Mice. *Journal of Neuroscience*. (in press).

Kioussi, C. and Gross, M.K. (2008) How to Build Transcriptional Network Models of Mammalian Pattern Formation. *PloS One* **3**, e2179.

Shih, H.P., Gross, M.K. and Kioussi, C. (2008) Muscle Development: Forming Head and Trunk Muscles. *Acta Histochemica* **110**, 97-108.

Hagen, Tory

Dixon, B.M., Heath, S.-H., Suh, J.S. and Hagen, T.M. (2008) Assessment of endoplasmic reticulum glutathione redox status is confounded by extensive ex vivo oxidation. *Antiox. Redox. Signal.* **10**, 963-972.

Smith, A.R., Visioli, F., Frei, B. and Hagen, T.M (2008) Lipoic acid significantly restores, in rats, the age-related decline in vasomotion. *Br. J. Pharmacol.* **153**, 1615-1622. (Editor's pick and comment.)

Zhang, W-J., Bird, K.E., McMillen, T.S., LeBoeuf, R.C., Hagen, T.M. and Frei, B. (2008) Dietary α -lipoic acid supplementation inhibits atherosclerotic lesion development in ApoE^{-/-} and ApoE/LDL receptor^{-/-} mice. *Circulation* **117**, 421-428.

Petersen Shay, K. and Hagen, T.M. (2008) Age-associated impairment of Akt phosphorylation in primary rat hepatocytes is remediated by alpha-lipoic acid through PI3 kinase, PTEN, and PP2A. *Biogerontology*. in press.

Petersen Shay, K., Moreau, R.F., Smith, E.J. and Hagen, T.M. (2008) Is alpha-lipoic acid a scavenger of reactive oxygen species in vivo? Evidence for its initiation of stress signaling pathways that promote endogenous antioxidant capacity. *IUBMB Life* **60**, 362-367.

Karplus, P. Andrew

- Colussi, T., Parsonage, D., Boles, W., Matsuoka, T., Mallet, T.C., Karplus, P.A. and Claiborne, A. (2008) Structure of α -glycerophosphate oxidase from *Streptococcus sp.*: A template for the mitochondrial α -glycerophosphate dehydrogenase. *Biochemistry* **47**, 965-977.
- Manning, V., Hamilton, S.M., Karplus, P.A. and Ciuffetti, L.M. (2008) The Arg-Gly-Asp-containing, solvent-exposed loop of Ptr ToxA is required for internalization. *Mol. Plant Microbe Int.* **21**, 315-325.
- Karplus, P.A., Shapavalov, M.D., Dunbrack, R.S. Jr. and Berkholz, D.S. (2008) A forward-looking suggestion for resolving the stereochemical restraints debate: ideal geometry functions. *Acta Cryst. D.* **64**, 335-336.
- Parsonage, D., Karplus, P.A. and Poole, L.B. (2008) Substrate Specificity and Redox Potential of AhpC, a Bacterial Peroxiredoxin. *Proc. Nat. Acad. Sci.* **105**, 8209-8214.
- Meek, L., Martin, R.C., Shan, X., Karplus, P.A., Mok, D.W.S. and Mok, M.C. (2008) Isolation of legume glycosyltransferases and active site mapping of the *Phaseolus lunatus* zeatin O-glucosyltransferase ZOG1. *J. Plant Growth Regul.* **27**, 192-201.
- Wallen, J.R., Paige, C., Mallett, T.C., Karplus, P.A. and Claiborne, A. (2008) Pyridine nucleotide complexes with *Bacillus anthracis* coenzyme A disulfide reductase: a structural analysis of dual NAD(P)H specificity. *Biochemistry* **47**, 5182-5193.
- Berkholz, D.S., Faber, H.R., Savvides, S.N. and Karplus, P.A. (2008) Catalytic cycle of human glutathione reductase near 1 Å resolution. *J. Mol. Biol.* **382**, 371-384.
- Benison, G., Chiodo, M., Karplus, P.A. and Barbar, E. (2008) Interplay of Ligand Binding and Phosphorylation in the Regulation of Dynein Light Chain LC8. *J. Mol. Biol.* **384**, 954-966.
- Simmons, C.R., Krishnamoorthy, K., Granett, S.L., David, J., Schuller, D.J., Dominey Jr., J.E., Begley, T.P., Stipanuk, M.H. and Karplus, P.A. (2008) A Putative Fe²⁺-bound Persulfenate Intermediate in Cysteine Dioxygenase. *Biochemistry* **47**, 11390-11392.
- Nelson, K.J., Parsonage, D., Hall, A., Karplus, P.A. and Poole, L.B. (2008) Cysteine pKa values for the bacterial peroxiredoxin AhpC. *Biochemistry* **47**, 12860-12868.

Mathews, Chris

- Mannava, S., Grachtchouk, V., Wheeler, L.J., Im, M., Zhuang, D., Slavina, E.G., Mathews, C.K., Shewach, D.S. and Nikiforov, M.A. (2008) Direct Role of Nucleotide Metabolism in C-Myc-dependent Control of Melanoma Cells Proliferation. *Cell Cycle* **7**, 1-9.

Pursell, Z.F., MacDonald, J.T., Mathews, C.K. and Kunkel, T.A. (2008) Trace Amounts of 8-oxo-dGTP in Mitochondrial Pools Reduce DNA Polymerase γ Replication Fidelity. *Nucl. Ac. Res.* **36**, 2174-2181.

Mathews, C.K. (2008) Academic Life—The Whole Package (Invited *Reflections* Article). *J. Biol. Chem.* **283**, 20,613-20,620.

Mathews, C.K. and Wheeler, L.J. (2008) Measuring DNA Precursor Pools in Mitochondria. In J. Stuart (ed.) *Mitochondrial DNA: Methods and Protocols, Second Edition. Methods in Molecular Biology Series*, Humana Press, Totowa, NJ, in press.

Schimerlik, Michael

Simonich MT, McQuistan T, Jubert C, Pereira C, Hendricks JD, Schimerlik M, Zhu B, Dashwood RH, Williams DE, Bailey GS. (2008) Low-dose dietary chlorophyll inhibits multi-organ carcinogenesis in the rainbow trout. *Food Chem Toxicol.* **46**, 1014-24.

van Holde, Ken

van Holde, K. (2008) Learning How to be a Scientist. *J. Biol. Chem.* **283**, 4461.