

# MOLECULAR AND CELLULAR BIOLOGY

GRADUATE DIRECTOR: ROLF STERNGLANZ  
DEPARTMENT CHAIR: ROBERT HALTIWANGER

## ❖ Jointly Authored Publications/Research Reports/Reviews

**Callender, T.**, and Hollingsworth, N.M. (In Press) Mek1 suppression of meiotic double strand break repair is specific to sister chromatids, chromosome autonomous and independent of Rec8 cohesin complexes. *Genetics*.

Clower, C.V.\*, **Chatterjee, D.\***, Wang, Z., Cantley, L.C., Vander Heiden, M.G., Krainer, A.R. (2010) The alternative splicing repressors hnRNP A1/A2 and PTB influence pyruvate kinase isoform expression and cell metabolism. *PNAS* 107:1894-1899. (\*equal contributors)

**Cheng, H.**, Megha, and London, E. (2009) Preparation and Properties of Asymmetric Vesicles That Mimic Cell Membranes: Implications for Lipid Raft Formation and Transmembrane Helix Orientation. *J. Biol. Chem.* 284(10): 6079-6092.

Staresincic, L., **Fagbemi, A.F.**, Enzlin, J.H., Gourdin, A.M., Wijgers, N., Dunand-Sauthier, I., Giglia-Mari, G., Clarkson, S.G., Vermeulen, W., and Schäfer, O.D. (2009) Coordination of dual incision and repair synthesis in human nucleotide excision repair. *The EMBO Journal* 28(8): 1111-1120.

**Goncalves, J.A.**, Ahuja, S., Erfani, S., Eilers, M., and Smith, S.O. (In Press) Structure and function of G protein-coupled receptors using NMR spectroscopy. *Progress in NMR Spectroscopy*.

Hornak, V., Ahuja, S., Eilers, M., **Goncalves, J.A.**, Sheves, M., Reeves, P.J., Smith, S.O. (2010) Light activation of rhodopsin: insights from molecular dynamics simulations guided by solid-state NMR distance restraints. *J Mol Biol.* 396(3): 510-27.

Ahuja, S., Hornak, V., Yan, E.C.Y., Syrett, N., **Goncalves, J.A.**, Hirshfeld, A., Ziliox, M., Sakmar, T.P., Sheves, M., Reeves, P.J., Smith, S.O., and Eilers, M. (2009) Helix movement is coupled to displacement of the second extracellular loop in rhodopsin activation. *Nat. Struct. Mol. Biol.* 16: 168-175.

Penzo, M., Molteni, R., Suda, T., Samaniego, S., Raucchi, A., **Habieli, D.M.**, Miller, F., Jiang, H., Li J., Pardi, R., Palumbo, R., Olivotto, E., Kew, R.R., Bianchi, M.E., and Marcu, K.B. (2010) HMGB1 chemotactic responses differentially depend on IKK $\alpha$  and IKK $\beta$  to drive two NF- $\kappa$ B pathways. *Journal of Immunology* 184: 4497-4509.

Zhang, J., **Habieli, D.M.**, Ramadass, M., and Kew, R.R. (2010) Identification of two distinct cell binding sequences in the vitamin D binding protein. *Biochimica et Biophysica Acta - Molecular Cell Research* 1803:623-629.

**Hui-Ju, Y.**, and Neiman, A.M. (2010) A Guanine Nucleotide Exchange Factor Is a Component of the Meiotic Spindle Pole Body in *Shizosaccharomyces pombe*. *Molecular Biology of the Cell* 21: 1272-1281.

Jiang, P., **Jahan, N.**, Wimmer, E. (2010) Mechanisms of Pathogenesis of Enteroviruses and Strategies to Mitigate Enteroviral Virulence. In D. Raghunath (Ed.), *Mechanisms of Microbial Pathogenesis*. India: Macmillan Publishers India Ltd.

**Kok, F.O.**, Shepherd, I.T. and Sirotkin, H.I. (2010) Churchill and Sip1 $\alpha$  repress fibroblast growth factor signaling during zebrafish somitogenesis. *Dev Dyn* 239: 548-58.

**Liao, M.C.**, Ahmed, M., Smith, S.O., Van Nostrand, W.E. (2009) Degradation of amyloid beta protein by purified myelin basic protein. *Journal of Biological Chemistry* 284(42): 28917-25.

**Liao, M.C.**, Van Nostrand, W.E. (2010) Degradation of Soluble and Fibrillar Amyloid  $\beta$ -Protein by Matrix Metalloproteinase (MT1-MMP) *in-Vitro*. *Biochemistry* 49: 1127-1136.

- Liu, X.**, Schuck, S. and Stenlund, A. (2010) Structure-based mutational analysis of the bovine papillomavirus E1 helicase domain identifies residues involved in the nonspecific DNA binding activity required for double trimer formation. *J. Virol.* 84: 4264-4276.
- Liu, X.**, and Stenlund, A. (2010) Mutations in Sensor 1 and Walker B in the bovine papillomavirus E1 initiator protein mimic the nucleotide-bound state. *J. Virol.* 84: 1912-1919.
- Prieto-Echagüe, V.**, Gucwa, A., Craddock, B.P., Brown, D.A., and Miller, W.T. (2010) Cancer-associated mutations activate the nonreceptor tyrosine kinase Ack1. *Journal of Biological Chemistry* 285(14): 10605-15.
- Zhang, J., Habel, D.M., **Ramadass, M.**, and Kew, R.R. (2010) Identification of two distinct cell binding sequences in the vitamin D binding protein. *Biochimica et Biophysica Acta - Molecular Cell Research* 803:623-629
- Rana, N.A.**, Xu, M.L., Moss, H., Rab, A., Nita-Lazar, A., Caswell, D., Tan, E., Haltiwanger, R.S. (2009) On the “Fringe” of Notch: Mapping Sites of O-Fucosylation and Fringe Elongation on *Drosophila* Notch Extracellular Domain using Mass Spectrometry. *Glycobiology* 19: 1334a.
- Bakker, H., Oka, T., Ashikov, A., Yadav, A., Berger, M., **Rana, N.A.**, Bai, X., Jigami, Y., Haltiwanger, R.S., Esko, J.D., Gerardy-Schahn, R. (2009) Functional UDP-xylose transport across the ER/Golgi membrane in a Chinese hamster ovary cell mutant defective in UDP-xylose synthase. *J. Biol. Chem.* 284: 2576-2583.
- Relucio, J.**, Tzvetanova, I.D., Ao, W., Lindquist, S., Colognato, H. (2009) Laminin alters fyn regulatory mechanisms and promotes oligodendrocyte development. *Journal of Neuroscience* 29(38):11794-11806.
- Loulier, K., Lathia, J.D., Marthiens, V., **Relucio, J.**, Mughal, M.R., Tang, S.C., Coksaygan, T., Hall, P.E., Chigurupati, S., Patton, B., Colognato, H., Rao, M.S., Mattson, M.P., Haydar, T.F., Ffrench-Constant, C. (2009) beta1 integrin maintains integrity of the embryonic neocortical stem cell niche. *PLoS Biology* 8. doi e1000176.
- Sun, S., Zhang, Z., **Sinha, R.**, Karni, R., Krainer, A.R. (2010) SF2/ASF autoregulation involves multiple layers of post-transcriptional and translational control. *Nat Struct Mol Biol* 17: 306-313.
- Sinha, R.**, Allemand, E., Zhang, Z., Karni, R., Myers, M.P., Krainer, A.R. (In Press) Arginine methylation controls the subcellular localization and functions of the oncoprotein splicing factor SF2/ASF. *MCB*.
- Sun, S.**, Zhang, Z., Sinha, R., Karni, R., Krainer, A.R. (2010) SF2/ASF autoregulation involves multiple layers of post-transcriptional and translational control. *Nat Struct Mol Biol* 17: 306-312.
- Wu, H., **Sun, S.**, Tu, K., Gao, G., Xie, B., Krainer, A.R., Zhu, J. (2010) A splicing independent function of SF2/ASF in microRNA processing. *Mol Cell* 38: 67-77.
- Song, B., Wang, Y., **Titmus, M.A.**, Botchkina, G., Ju, J. (In Press) Effects of miR-215 on the resistance to chemotherapy in osteosarcoma and colon cancer cells. *Molecular Cancer*.
- Vasudevan, D.**, Majerus, E., Haltiwanger, R.S. (2009) Importance of O-Fucosylation on Thrombospondin Type I Repeats for Secretion of ADAMTS13. *Glycobiology* 19: 1336a.
- Haltiwanger, R.S., Du, J., Leonhard-Melief, C., **Vasudevan, D.**, Chaubard, J.L., Holdener, B.C. (2009) O-Fucosylation of Thrombospondin Type I Repeats is Essential for Early Mouse Embryogenesis. *Glycobiology* 19: 1290a.
- Hagn, F., Klein, C., Demmer, O., Marchenko, N., **Vaseva, A.**, Moll, U.M., Kessler, H. (2010) BclxL changes conformation upon binding to wild-type but not mutant p53 DNA binding domain. *J Biol Chem.* 285(5): 3439-50.

- Vaseva, A.,** Marchenko, N.D., Moll, U.M. (2009) The transcription-independent mitochondrial p53 program is a major contributor to nutlin-induced apoptosis in tumor cells. *Cell Cycle* 8(11): 1711-9.
- Zhang, C.,** Konopka, J.B., (2010) A photostable green fluorescent protein variant for analysis of protein localization in *Candida albicans*. *Eukaryot Cell* 9(1): 224-6.
- Zhao, H.L.,** Ueki, N., Marcelain, K., Hayman, M.J. (2009) The Ski protein can inhibit ligand induced RARalpha and HDAC3 degradation in the retinoic acid signaling pathway. *Biochem Biophys Res Commun.* 383(1): 119-24.

❖ **Abstracts, Conferences/Colloquia, Presentations, Symposiums, Workshops**

- Brzostek-Racine, S.,** Gordon, C., Van Scoy, S., and Reich, N.C. (2009) Interferon Signaling is Activated in Response to DNA Damage. *International Society for Interferon and Cytokine Research Joint Annual Meeting with Cytokine Society.* Lisbon, Portugal.
- Fagbemi, Adebanke.** (2009) XPG UBM Mutant Exhibits Delayed Damage Repair Phenotype In Vivo. *Gordon Research Conference - Nucleic Acids.* University of New England, Biddeford, ME.
- Fagbemi, Adebanke.** (2010) Multiple Domains for PCNA Interaction in XPG and their Effects on NER. *Structural Cell Biology of DNA Repair Machines.* Berkeley, CA.
- Gao, Yiwei,** Reich, N.C. (2009) SOCS3 Blocks Breast Tumor Kinase Activation of STAT3. *International Society for Interferon and Cytokine Research Joint Annual Meeting with Cytokine Society.* Lisbon, Portugal.
- Ge, L.,** Trujillo, G., Zhang, J. and Kew, R.R. (2010) Thrombospondin-1 Receptors Regulate Leukocyte Chemotactic Response to C5a/C5a des Arg. *XXIII International Complement Workshop.* New York, NY. *Molecular Immunology.* (abstract in press)
- Habel, D.M.,** Trujillo, G., Zhang, J. and Kew, R.R. (2010) Cofactor Amplification of C5a/C5a des Arg Chemotactic Activity in Physiological Fluids. *XXIII International Complement Workshop.* New York, NY. *Molecular Immunology.* (abstract in press)
- Jadali, A.,** and Ghazizadeh, S. (2010) Calcium-induced epidermal differentiation is a reversible process regulated by PKD. *Annual Meeting of the Society of Investigative Dermatology.* Atlanta, GA. *J. Investigative Dermatology* 130: S95. (abstract in press)
- Jahan, N.,** Mueller, S., Wimmer, E. (2009) A Host-specific, Temperature Sensitive Translation Defect Determines the Attenuation Phenotype of a Human Rhinovirus/Poliovirus Chimera PV1(RIPO2). *Microbial Pathogenesis & Host Response.* Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
- Ramadass, M.,** and R.R. Kew. (2010) Complement Activation Induced Modification of the Vitamin D Binding Protein. *XXIII International Complement Workshop.* New York, NY. *Molecular Immunology.* (abstract in press)
- Sinha, R.,** Allemand, E., Zhang, Z., Karni, R., Krainer, A.R. (2010) Arginine Methylation Controls the Subcellular Localization and Functions of the Oncoprotein Splicing Factor SF2/ASF. *Fifteenth Annual Meeting of the RNA Society.* University of Washington, Seattle, WA. (poster)
- Sun, Shuying,** Zhang, Zuo, Sinha, Rahul, Karni, Rotem and Krainer, Adrian R. (2009) SF2/ASF autoregulation involves multiple mechanisms. *Eukaryotic mRNA Processing.* Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. *Annual Meeting of the RNA Society.* Madison, WI. (poster)
- Titmus, M.A.,** Hatchwell E, Shroyer KR. (2010) Enrichment of HPV-integrated gDNA from FFPE tissue for next-generation sequencing. *International Papillomavirus Conference.* Montréal, QB.
- Prieto, V.,** Craddock, B.P., Miller, W.T. (2009) Cancer-associated mutations activate Ack1. *Meeting on Phosphorylation, Signaling & Disease.* Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

**Yang, Hui-Ju,** and Aaron M. Neiman. (2009). GEF Activity of the *S. pombe* Meiotic Spindle Pole Body. *Meeting on Yeast Cell Biology*. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

❖ **Post-Doctorates Obtained and Professional Appointments**

**Jahan, Nusrat.** (2009) Post-Doctoral Associate. Department of Molecular Genetics and Microbiology, *Stony Brook University*, Stony Brook, NY.