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My research interests are broad and encompass experience in preclinical and translational oncology research. Given my keen interest in translational research, I joined the multi-disciplinary Chiosis Laboratory, to gain a deeper understanding of the key requirements for the development of novel therapeutics and their translation from bench to clinic. Hsp90 has an important role in regulating diverse oncogenic signaling mechanisms by stabilizing and folding key proteins involved in carcinogenesis and is a highly sought after target for cancer therapy. Given the biological complexity of cancers and the inherent anti-apoptotic signaling resilience of tumors, targeting a multi-modal signaling regulator like Hsp90 would destabilize multiple proteins involved in diverse oncogenic biological processes. The Chiosis Laboratory has demonstrated the efficacy of PU-H71, an Hsp90 inhibitor currently in Phase I clinical trials, in a wide array of cancers (breast cancer, pancreatic cancer, leukemia, lymphoma) and has shown that tumor cells form functionally distinct complexes referred to as the “oncogenic Hsp90” that are enriched and expanded in tumors cells and are important in folding and stabilizing the onco-proteins in cancer cells. My project involves two phases (1) Conducting exploratory steps of biomarker development utilizing chemical tools generated by chemists in the Chiosis Laboratory and (2) To understand the mechanism of action of Hsp90 inhibitors in cancer and develop rational mechanistically driven combination therapies with PU-H71

Patents

Uses of labeled Hsp90 Inhibitors. (WO2013009657), PCT/US2012/045864. Chiosis Gabriela, Taldone Tony, Alpaugh Mary L., Gomes-DaGama Erica M., Guzman Monica L., Hongliang Zong

Uses of labeled Hsp90 Inhibitors. (WO2013009655), PCT/US2012/045864. Chiosis Gabriela, Pillarsetty Nagavarakishore, Lewis Jason S., Larson Steven M., Taldone Tony, Alpaugh Mary L., Gomes-DaGama Erica M

Publications

Select Relevant Publications

[Taldone T, Rodina A, DaGama Gomes EM, Riolo M, Patel HJ, Alonso-Sabadell R, Zatorska D, Patel MR, Kishinevsky S, Chiosis G. Synthesis and Evaluation of Cell-Permeable Biotinylated PU-H71 Derivatives as Tumor Hsp90 Probes. *Beilstein J Org Chem*. 2013 Mar 15;9:544-56.](#)

Monica L. Guzman, Maeve A. Lowery, Tony Taldone, John Koren III, Erica DaGama Gomes and Gabriela Chiosis. *Cell Death Signaling in Cancer Biology and Treatment*, Humana Press, 2013.

[Moulick K, Ahn JH, Zong H, Rodina A, Cerchietti L, Gomes DaGama EM, Caldas-Lopes E, Beebe K, Perna F, Hatzl K, Vu LP, Zhao X, Zatorska D, Taldone T, Smith-Jones P, Alpaugh M, Gross SS, Pillarsetty N, Ku T, Lewis JS, Larson SM, Levine R, Erdjument-Bromage H, Guzman ML, Nimer SD, Melnick A, Neckers L, Chiosis G. Affinity-based proteomics reveal cancer-specific networks coordinated by Hsp90. *Nature Chem Biol* 2011. 10.1038/NChemBio.670.](#) Featured in Nature News&Views October 20, 2011; [Highlighted in Nature issue October 20, 2011](#); Featured in SciBx October 2011; Featured in ProteoMonitor September 30, 2011

[Taldone T, Gomes-DaGama EM, Zong H, Sen S, Alpaugh ML, Zatorska D, Alonso-Sabadell R, Guzman ML, Chiosis G. Synthesis of purine-scaffold fluorescent probes for heat shock protein 90 with use in flow cytometry and fluorescence microscopy. *Bioorg Med Chem Lett*. 2011 Sep 15;21\(18\):5347-52. Epub 2011 Jul 14.](#)

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