

## **NExT Discovery Project Publications**

### **AAA ATPase p97:**

#### **Structure–Activity Study of Bioisosteric Trifluoromethyl and Pentafluorosulfanyl Indole Inhibitors of the AAA ATPase p97**

Celeste Alvarez, Michelle R. Arkin, Stacie L. Bulfer, Raffaele Colombo, Marina Kovaliov, Matthew G. LaPorte, Chaemin Lim, Mary Liang, William J. Moore, R. Jeffrey Neitz, Yongzhao Yan, Zhizhou Yue, Donna M. Huryn & Peter Wipf, *ACS Med Chem. Lett.* **2015**, 6, 1225-30

#### **Evaluating p97 inhibitor analogues for their domain selectivity and potency against the p97-p47 complex**

Fang, C.J., Gui, L., Zhang, X., Moen, D.R., Li, K., Frankowski, K.J., Lin, H. J., Schoenen, F.J. & Chou, T.-F., *ChemMedChem.* **2015**, 10, 52-56

#### **Altered cofactor regulation with disease-associated p97/VCP mutations**

Zhang, X., Gui, L., Zhang, X., Bulfer, S.L., Sanghez, V., Wong, D.E., Lee, Y., Lehmann, L., Lee, J.S., Shih, P.Y., Lin, H.J., Iacovino, M., Wehl, C.C., Arkin, M.R., Wang, Y. & Chou, T.F., *Proc Natl Acad Sci U S A.* **2015**, 112, E1705-14.

#### **A Fragment-Based Ligand Screen against Part of a Large Protein Machine: The ND1 Domains of the AAA+ ATPase p97/VCP**

Chimenti, M.S., Bulfer, S.L., Neitz, R.J., Renslo, A.R., Jacobson, M.P., James, T.L., Arkin, M.R. & Kelly, M.J., *J Biomol Screen.* **2015**, 20, 788-800

#### **Specific inhibition of p97/VCP ATPase and kinetic analysis demonstrate interaction between D1 and D2 ATPase domains**

Chou, T.-F., Bulfer, S. L., Wehl, C.C., Li, K., Lis, L.G., Walters, M.A., Schoenen, F.J., Lin, H.J., Deshaies, R.J. & Arkin, M.R., *J. Mol. Biol.* **2014**, 426, 2886–2899

#### **Structure–activity relationship study reveals ML240 and ML241 as potent and selective inhibitors of p97 ATPase**

Chou, T.-F., Li, K., Frankowski, K.J., Schoenen, F.J. & Deshaies, R.J., *ChemMedChem*, **2013**, 8, 297–312

### **Mcl-1:**

#### **Discovery of Tricyclic Indoles That Potently Inhibit Mcl-1 Using Fragment-Based Methods and Structure-Based Design**

Burke, J.P., Bian, Z., Shaw, S., Zhao, B., Goodwin, C.M., Belmar, J., Browning, C.F., Vigil, D., Friberg, A., Camper, D.V., Rossanese, O.W., Lee, T., Olejniczak, E.T. & Fesik, S.W., *J Med Chem.* **2015**, 58, 3794-805

## **NExT Discovery Project Publications**

### **Small molecule Mcl-1 inhibitors for the treatment of cancer**

Belmar, J. & Fesik, S.W., *Pharmacol Ther.* **2015**, *145*, 76-84

### **Discovery of potent myeloid cell leukemia 1 (Mcl-1) inhibitors using fragment-based methods and structure-based design**

Friberg, A., Vigil, D., Bin, Z., Daniels, R.N., Burke, J.P., Garcia-Barrantes, P.M., Camper, D., Chauder, B.A., Lee, T., Olejniczak, E.T. & Fesik, S.W., *J. Med. Chem.* **2013**, *56*, 15–30

### **WDR5-MLL1:**

### **Interaction with WDR5 promotes target gene recognition and tumorigenesis by MYC**

Thomas L.R., Wang Q., Grieb B.C., Phan J., Foshage A.M., Sun Q., Olejniczak E.T., Clark T., Dey S., Lorey S., Alicia B., Howard G.C., Cawthon B., Ess K.C., Eischen C.M., Zhao Z., Fesik S.W. & Tansey W.P., *Mol Cell.* **2015**, *58*, 440-52

### **Mer Kinase:**

### **UNC2025, A potent and orally bioavailable MER/FLT3 dual inhibitor**

Zhang, W., DeRyckere, D., Hunter, D., Liu, J., Stashko, M., Minson, K.A., Cummings, C.T., Lee, M., Glaros, T.G., Newton, D.L., Sather, S., Zhang, D., Kireev, D., Janzen, W.P., Earp, H.S., Graham, D.K., Frye, S.V. & Wang, X., *J. Med. Chem.* **2014**, *57*, 7031–7041

### **UNC1062, a new and potent Mer inhibitor**

Liu, J., Zhang, W., Stashko, M.A., DeRyckere, D., Cummings, C.T., Hunter, D., Yang, C., Jayakody, C.N., Cheng, N., Simpson, C., Norris-Drouin, J., Sather, S., Kireev, D., Janzen, W.P., Earp, H.S., Graham, D.K., Frye, S.V. & Wang, X., *Eur. J. Med. Chem.* **2013**, *65*, 83–93

### **MERTK receptor tyrosine kinase is a therapeutic target in melanoma**

Schlegel, J., Sambade, M.J., Sather, S., Moschos, S.J., Tan, A.C., Wings, A., Deryckere, D., Carson, C.C., Trembath, D.G., Tentler, J.J., Eckhardt, S.G., Kuan, P.F., Hamilton, R.L., Duncan, L.M., Miller, C.R., Nikolaishvili-Feinberg, N., Midkiff, B.R., Liu, J., Zhang, W., Yang, C., Wang, X., Frye, S.V., Earp, H.S., Shields, J.M. & Graham, D.K., *J. Clin. Invest.* **2013**, *123*, 2257–2267

### **UNC569, a novel small-molecule Mer inhibitor with efficacy against acute lymphoblastic leukemia in vitro and in vivo**

Christoph, S., DeRyckere, D., Schlegel, J., Frazer, J.K., Batchelor, L.A., Trakhimets, A.Y., Sather, S., Hunter, D.M., Cummings, C.T., Liu, J., Yang, C., Kireev, D., Simpson, C., Norris-Drouin, J., Hull-Ryde, E.A., Janzen, W.P., Johnson, G.L., Wang, X., Frye, S.V., Earp III, H.S. & Graham, D.K., *Mol. Cancer Ther.* **2013**, *12*, 2367–2377

## **NExT Discovery Project Publications**

### **Pseudo-cyclization through intramolecular hydrogen bond enables discovery of pyridine substituted pyrimidines as new Mer kinase inhibitors**

Zhang, W., Zhang, D., Stashko, M.A., Deryckere, D., Hunter, D., Kireev, D., Miley, M.J., Cummings, C., Lee, M., Norris-Drouin, J., Stewart, W.M., Sather, S., Zhou, Y., Kirkpatrick, G., Machius, M., Janzen, W.P., Earp, H.S., Graham, D.K., Frye, S.V. & Wang, X., *J. Med. Chem.* **2013**, *56*, 9683–9692

### **Discovery of small molecule Mer kinase inhibitors for the treatment of pediatric acute lympho- blastic leukemia**

Liu, J., Yang, C., Simpson, C., DeRyckere, D., Van, D.A., Miley, M.J., Kireev, D., Norris-Drouin, J., Sather, S., Hunter, D., Korboukh, V.K., Patel, H.S., Janzen, W.P., Machius, M., Johnson, G.L., Earp, H.S., Graham, D.K., Frye, S.V. & Wang, X., *ACS Med. Chem. Lett.* **2012**, *3*, 129–134

### **Efficient solution-phase synthesis of 4,5,7-trisubstituted pyrrolo[3,2-d] pyrimidines**

Zhang, W., Liu, J., Stashko, M.A. & Wang, X., *ACS Comb. Sci.* **2012**, *15*, 10–19

### **STAT3:**

#### **A metric and workflow for quality control in the analysis of heterogeneity in phenotypic profiles and screens**

Albert Gough, Tong Ying Shun, D. Lansing Taylor, Mark Schurdak, *Methods* [Online Early Access]. DOI: 10.1016/j.ymeth.2015.10.007 (accepted manuscript, has not undergone final copyediting, typesetting, or proof review)

#### **HCS campaign to identify selective inhibitors of IL-6-induced STAT3 pathway activation in head and neck cancer cell lines**

Johnston, P.A., Sen, M., Hua, Y., Camarco, D.P., Shun, T.Y., Lazo, J.S., Wilson, G.M., Resnick, L.O., LaPorte, M.G., Wipf, P., Huryn, D.M. & Grandis, J.R., *Assay Drug Dev Technol.* **2015**, *13*, 356-76

#### **High-content pSTAT3/1 imaging assays to screen for selective inhibitors of STAT3 pathway activation in head and neck cancer cell lines**

Johnston, P.A., Sen, M., Hua, Y., Camarco, D., Shun, T.Y., Lazo, J.S. & Grandis, J.R., *Assay Drug Dev. Technol.* **2014**, *12*, 55–79

#### **2-Guanidinoquinazolines as new inhibitors of the STAT3 pathway**

LaPorte, M.G., Paz Lima, D.J., Zheng, F., Sen, M., Grandis, J.R., Camarco, D., Hua, Y., Johnston, P.A., Lazo, J.S., Resnick, L.O., Wipf, P. & Huryn, D. M., *Bioorg. Med. Chem. Lett.* **2014**, *24*, 5081–85

#### **STAT3 signaling: anticancer strategies and challenges**

Johnston, P.A. & Grandis, J.R., *Mol. Interv.* **2011**, *11*, 18–26

## **NExT Discovery Project Publications**

### **Artemis Endonuclease:**

#### **Evidence that the DNA endonuclease ARTEMIS also has intrinsic 5'-exonuclease activity**

Li, S., Chang, H.H., Niewolik, D., Hedrick, M.P., Pinkerton, A.B., Hassig, C.A., Schwarz, K. & Lieber, MR., *J. Biol. Chem.* **2014**, 289, 7825-34

### **Natural Product Inducers of Apoptosis:**

#### **Ultra high throughput screening of natural product extracts to identify pro-apoptotic inhibitors of BCL-2 family proteins**

Hassig, C.A., Zeng, F.Y., Kung, P., Kiankarimi, M., Kim, S., Diaz, P.W., Zhai, D., Welsh, K., Morshedean, S., Su, Y., O'Keefe, B., Newman, D.J., Rusman, Y., Kaur, H., Salomon, C. E., Brown, S.G., Baire, B., Michel, A.R., Hoyer, T.R., Francis, S., Georg, G.I., Walters, M.A., Divlianska, D.B., Roth, G.P., Wright, A.E. & Reed, J. C., *J. Biomol. Screen*, **2014**, 19, 1201–1211

### **T-dCyd:**

#### **Novel DNA methyltransferase-1 (DNMT1) depleting anticancer nucleosides, 4'-thio-2'-deoxycytidine and 5-aza-4'-thio-2'-deoxycytidine**

Jaideep V. Thottassery, Vijaya Sambandam, Paula W. Allan, Joseph A. Maddry, Yulia Y. Maxuitenko, Kamal Tiwari, Melinda Hollingshead, William B. Parker, *Cancer Chemother Pharmacol.* **2014**, 74, 291-302

### **GBM-PPI:**

#### **Disrupting the PIKE-A/Akt interaction inhibits glioblastoma cell survival, migration, invasion and colony formation**

Qi, Q., He, K., Liu, X., Pham, C., Meyerkord, C., Fu, H., Ye, K., *Oncogene* **2013**, 32, 1030-40

### **Histone Demethylases:**

#### **Characterization of a linked Jumonji domain of the KDM5/JARID1 family of histone H3 lysine 4 demethylases**

Horton, J.R., Engstrom, A., Zoeller, E.L., Liu, X., Shanks, J.R., Zhang, X., Johns, M.A., Vertino, P.M., Fu, H., Cheng, X., *J Biol. Chem.* [Online Early Access]. DOI: 10.1074/jbc.M115.698449