

**BIOMEDICAL & VETERINARY SCIENCES
GRADUATE PROGRAM**



ANNOUNCES

The Doctor of Philosophy Seminar
and Examination of

Qizhi Qin

**“Evaluation of the therapeutic potential of
Akt inhibition in a translational model of
histiocytic sarcoma ”**

Monday, September 10, 2018

1:00 pm

Classroom 125

Bio



Qizhi Qin grew up in Shehezi, a town in northwest China. He graduated from Huazhong University of Science and Technology Tongji Medical College in Wuhan with a bachelor's degree in Medical Sciences in 2010. In 2013, he received his master's degree in Biochemistry from the same University. In fall 2013, he joined Dr. Dervisis's lab to begin his Ph.D. study in Biomedical and Veterinary Sciences program at Virginia Tech. His research has focused on the potential role of Akt-targeted therapeutic strategies in the clinical treatment of canine histiocytic sarcoma. His dissertation research showed Akt inhibition effectively suppressed tumor growth *in vivo*, especially in combination with other anti-tumor drugs. In the future, he aspires to pursue an academic career in cancer translational research.

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Grayton Friedlander Memorial Fund

Lay Language Abstract

Histiocytic sarcoma (HS) is an exceptionally rare cancer of the immune system, with no effective treatment options available. Canine histiocytic sarcoma (cHS) is an aggressive tumor of the same cellular lineage, identified at increased relative frequency in specific dog breeds, with significant translational value. Akt signaling and proteasome dysfunction have been implicated in the pathogenesis of the disease, both in humans and dogs. Our study aims to investigate the role of the Akt signaling pathway in the dog model of the disease and evaluate the potential of Akt-targeted therapy in a translational of histiocytic sarcoma. The work presented here demonstrates that Akt signaling appears aberrantly and constitutively activated in the canine model of HS. Importantly, Akt inhibition significantly reduced the tumor growth and prolonged the overall survival of the experimental animals. Moreover, Akt inhibition potentiated the anti-cancer activities of other anticancer drugs. Collectively, these findings provide an attractive therapeutic approach for the treatment of HS.

Publications

Qin Q, Coutermarsh-Ott S, Allen IC, Davalos RV, Klakn SL, Dervisis NG. LY294002 potentiates carfilzomib-induced apoptotic cell death via caspase-3 independent way. *BMC Cancer*. Under consideration.

Dervisis NG, Kiupel M, **Qin Q**, Cesario L. Clinical prognostic factors in canine histiocytic sarcoma. *Vet Comp Oncol*. 2016 Jun 23. doi: 10.1111/vco.12252.

Coutermarsh-Ott S, Simmons A, Capria V, LeRoith T, Wilson JE, Heid B, Philipson CW, **Qin Q**, Hontecillas-Magarzo R, Bassaganya-Riera J, Ting JP, Dervisis N, Allen IC. NLRX1 suppresses tumorigenesis and attenuates histiocytic sarcoma through the negative regulation of NF- κ B signaling. *Oncotarget*. 2016 May 31;7(22):33096-110. doi: 10.18632/oncotarget.8861.

Presentations

Qin Q, Davalos RV, Allen IC, Partridge B, Klahn SL, Dervis NG. Targeting PI3K/Akt in a translational model of canine histiocytic sarcoma. Veterinary Cancer Society, Louisville, Kentucky, October 2018. Oral

Moore N, Qin Q, Hall-Manning K, Lahmers K, Dervis N. Using differences in gene expression to differentiate histiocytic sarcoma from soft tissue sarcoma. Summer Veterinary Student Research Program, 2017

Qin Q, Davalos RV, Allen IC, Partridge B, Klahn SL, Dervis NG. Evaluation of the therapeutic potential of Caspase-3 targeted therapy in canine histiocytic sarcoma. VirginiaCancerRx Symposium, Charlottesville, VA, May 2017. Poster

Qin Q, Davalos RV, Allen IC, Klahn SL, Dervis NG. Akt signaling blockade sensitizes cells to proteasome inhibition-induced death in histiocytic sarcoma - a dog model for the human disease. American Association for Cancer Research New Horizons in Cancer Research, Shanghai, China. November 2016. Poster

Qin Q, Davalos RV, Allen IC, Klahn SL, Dervis NG. Evaluation of Akt signaling pathway and therapeutic potential of Akt-targeted therapy in canine histiocytic sarcoma. VirginiaBrainRx Symposium, Richmond, VA, May 2016. Poster

Qin Q, Davalos RV, Allen IC, Klahn SL, Dervis NG. The Akt signaling pathway is active in canine histiocytic sarcoma. Veterinary Cancer Society, Tysons, VA, October 2015. Poster

Qin Q, Dervis NG. Evaluation of the Akt/NF- κ B signaling pathway in canine histiocytic sarcoma. Veterinary Cancer Society, St Louis, MO, October 2014. Poster

Examination Graduate Committee

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