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Autopsy Tissue Needs

Laboratory of Xiao Nan Li, M.D., Ph.D

Texas Children's Hospital

Research Interests

My interests are in the fields of cancer stem cells and experimental therapeutics of malignant brain tumors. The ultimate goal of my research is to identify diagnostic markers and therapeutic targets that will eventually lead to molecular-based subclassification of pediatric brain tumors and more effective therapies with low toxicity.

I have a specific interest in developing clinically relevant animal models for preclinical drug screening and biological studies of human malignant brain tumors. Since traditional subcutaneous xenograft models do not faithfully reproduce the biology of human brain tumors and are often associated with failure or reduced efficacy of the drug/therapy in clinical trials, I am actively engaged in the development of primary-tumor-based orthotopic xenograft models through direct injection of fresh surgical specimens of patient tumors into the anatomically matched locations in the brains of immunodeficient mice. With a tumor take rate more than 70 percent, I have established more than 25 xenograft mouse models of pediatric brain tumors, including medulloblastoma, glioblastoma multiforme, ependymoma, ependymoblastoma, and atypical teratoid/rhabdoid tumor. Detailed characterization showed that these models have replicated the histopathological phenotypes, invasive/metastatic growth features, and genomic profiles of the original patient tumors. I have also demonstrated that these models can be serially subtransplanted in vivo in mouse brains and stored in liquid nitrogen for long-term preservation of their tumorigenicity. This large panel of clinically relevant and patient-specific animal models has thus provided my team an unprecedented opportunity to study the biology and test new therapies of pediatric brain tumors.

Selected Publications

Yu, Li Tian, Patricia Baxter, Adekunle M. Adesina, Chris Man, Qin Shu, Jack M. Su, Laszlo Perlaky, Robert C. Dauser, Murali Chintagumpala, Ching C. Lau, Susan Blaney, Pulivarthi Rao, Eastwood Leung, and Xiao-Nan Li. "A Clinically Relevant Orthotopic Xenograft Model of Ependymoma That Maintains Genomic Signature of the Primary Tumor and Preserves Cancer Stem Cells in Vivo." *Neuro-Oncology* 12 no. 6 (2010): 580-94.

Sun, Wenjing, Ningling Ge, Yang Yu, Susan Burlingame, Xiaonan Li, Ming Zhang, Shenglong Ye, Songbin Fu, and Jianhua Yang. "Phosphorylation of THR-516 and SER-520 in the Kinase Activation Loop of Mitogen-Activated Protein Kinase Kinase Kinase 3 (MEKK3) Is Required for Lysophosphatidic Acid (LPA)-Mediated Optimal κ B Kinase β (IKK β)/Nuclear Factor- κ B (NF- κ B) Activation." *The Journal of Biological Chemistry* 285 (January 12, 2010): 21341-48.

Liu, Zhi-Gang, Hua-Yun Chen, Jing-Jian Cheng, Zhong-Ping Chen, Xiao-Nan Li, and Yun-fei Xia. "Relationship Between Methylation Status of ERCC1 Promoter and Radiosensitivity in Glioma Cell Lines." *Cellular Biology International* 33 no. 10 (October 2009): 1111-17.

Barahmani, Nadia, Sarah Carpentieri, Xio-Nan Li, Tao Wang, Yumei Cao, Laura Howe, Lindsay Kilburn, Murali Chintagumpala, Ching C. Lau, and M. Fatih Okcu. "Glutathione S-Transferase M1 and T1 Polymorphisms May Predict Adverse Effects After Therapy in Children with Medulloblastoma." *Neuro-Oncology* 11 no. 3 (2009): 292-300.

Shu, Qin, Kwong Kwok Wong, Jack M. Su, Adekunle M. Adesina, Li Tian Yu, Yvonne T. M. Tsang, Barbara C. Antalffy, Patricia Baxter, Laszlo Perlaky, Jianhua Yang, Robert C. Dauser, Murali Chintagumpala, Susan Blaney, Ching C. Lau, and Xio-Nan Li. "Direct Orthotopic Transplantation of Fresh Surgical Specimen Preserves Cancer Stem Cell Pool in Clinically Relevant Mouse Models of Medulloblastoma and Glioma." *Stem Cells* 26 no. 6 (2008): 1414-24.

Autopsy Tissue Needed

We are in need of fresh and frozen tissue for the following diagnosis: pediatric brain tumors, including medulloblastoma, malignant glioma, diffuse intrinsic pontine glioma (DIPG), primitive neuroectodermal tumor (PNET), and atypical teratoid rhabdoid tumor (ATRT).

Contact Information

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