# Brain Tumor Researchers Find Their 'Niche'

*by Bend Weekly News Sources*

Demonstration by St. Jude Researchers That Special Niches Made of Capillaries Protect and Stimulate Cancer Stem Cells in the Brain Explains the Origin of These Cancers and Their Reappearance Following Treatment

Investigators at St. Jude Children's Research Hospital have found a vulnerable spot in brain tumors they are exploiting to improve treatments and prevent tumors from returning. The researchers showed in laboratory studies that brain tumors appear to arise from cancer stem cells (CSCs) that live within microscopic, protective "niches" formed by blood vessels in the brain; and that certain drugs can disrupt these niches, depriving tumors of their source of cancer cells. CSCs are cells that continually multiply, acting as the source of tumors.

"Our data indicate these niches might also protect CSCs from chemotherapy and irradiation therapy," said Richard Gilbertson, M.D., Ph.D., the co- director of the Neurobiology and Brain Tumor Program at St. Jude. "And that could explain why aggressive tumors rapidly produce new blood vessels and why brain tumors reappear following treatment." Gilbertson is senior author of a report on this work that appears in the January issue of Cancer Cell.

The St. Jude investigators are now conducting a clinical trial to determine the effectiveness of Avastin(R) and another drug, Traceva(R) (erlotinib), in eliminating tumors and preventing their recurrence in children with brain cancers.

The other authors of this study include Christopher Calabrese, Helen Poppleton, Mehmet Kocak, Twala L. Hogg, Christine Fuller, Blair Hamner, Eun Y. Oh, M. Waleed Gaber, David Finklestein, Meredith Allen, Adrian Frank, Ildar T. Bayazitov, Stanislav S. Zakharenko, Amar Gajjar, and Andrew Davidoff.

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About St. Jude Children's Research Hospital

St. Jude Children's Research Hospital is internationally recognized for its pioneering work in finding cures and saving children with cancer and other catastrophic diseases. Founded by late entertainer Danny Thomas and based in Memphis, Tenn., St. Jude freely shares its discoveries with scientific and medical communities around the world. No family ever pays for treatments not covered by insurance, and families without insurance are never asked to pay. St. Jude is financially supported by ALSAC, its fund-raising organization. For more information, please visit http://www.stjude.org/.

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