

Could targeting a virus treat a common pediatric brain tumor?

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Medulloblastomas are the most common cancerous (malignant) brain tumors in children. Although survival rates have improved over the years, medulloblastoma remains associated with substantial mortality, and long-term survivors often suffer debilitating effects from the intensive treatments. A team of researchers, led by Cecilia Söderberg-Nauclér and John Inge Johnsen, at the Karolinska Institutet, Sweden, has now identified a potential target for a more cancer-specific approach to treating medulloblastoma that they hope could improve patient outcome.

Söderberg-Nauclér, Johnsen, and colleagues found that a large proportion of primary medulloblastomas and medulloblastoma cell lines are infected with a virus known as human cytomegalovirus (HCMV). Furthermore, the majority of primary medulloblastomas expressed HCMV proteins. Importantly, the antiviral drug valganciclovir reduced human medulloblastoma tumor cell growth both in vitro and upon xenotransplantation in mice. Targeting a protein (COX-2) in the cancer cells, expression of which was found to be induced by the HCMV, had similar in vitro and in vivo effects. The authors therefore suggest that targeting HCMV and/or COX-2 could provide a new therapeutic approach to treating individuals with medulloblastoma.

In an accompanying commentary, Cynthia Hawkins and Sidney Croul, discuss in detail the concept that it could be possible to exploit the presence of HCMV to target medulloblastomas therapeutically. They also note that this approach might be applicable to other [brain tumors](#), as several viruses have been linked to a range of brain tumors, including medulloblastomas, gliomas, and choroid plexus papillomas.

More information: www.jci.org/articles/view/5714...5e97138a2931936d1eb7

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