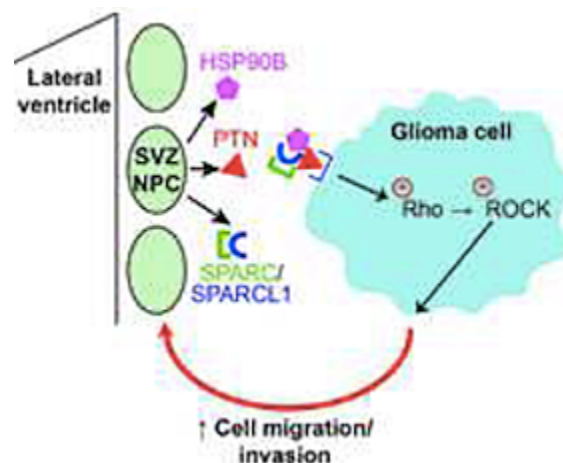


# Therapeutic targets to limit high-grade glioma spread

Researchers in Dr. Michelle Monje-Deisseroth's lab at Stanford have recently identified therapeutic targets for drug development to limit the spread of high-grade gliomas (HGGs). HGGs, including glioblastoma and diffuse intrinsic pontine glioma, are a group of brain cancers with dire prognosis. They frequently invade a region of the brain called the subventricular zone (SVZ) and this spread correlates with decreased survival. Currently the only therapeutic approach to limit spreading into the SVZ is not optimal as it involves irradiation of the SVZ, which can cause very serious side effects. Thus, new targeted therapeutic strategies are needed. Recent findings from the inventors help meet this need. The inventors have determined that SVZ invasion is promoted by the secretion of pleiotrophin which acts as a chemoattractant to the SVZ. Therapeutic agents that block pleiotrophin, its receptors, or any of the required binding partners could provide a new strategy for treating HGGs. This technology provides potential new targets for drug development to limit the spread of deadly brain cancers.



**Model:** Pleiotrophin (PTN) is secreted in the SVZ and with its binding partners promotes glioma cell migration and invasion of the SVZ.

## Stage of research

The inventors have identified pleiotrophin and its binding partners as key proteins secreted by cells in the SVZ that are necessary and sufficient for glioma invasion of the SVZ.

## Applications

- Drug development- new targets for development of therapeutics to treat gliomas

## Advantages

- Unmet medical need- existing therapeutic strategy is non-optimal
- Provides new targets for therapeutic development

## Publications

- Elizabeth Y. Qin, Dominique D. Cooper, Keene L. Abbott, James Lennon, Surya Nagaraja, Alan Mackay, Chris Jones, Hannes Vogel, Peter K. Jackson, Michelle Monje, [Neural Precursor-Derived Pleiotrophin Mediates Subventricular Zone Invasion by Glioma](#), Cell, August 24, 2017 (online August 17, 2017), DOI: <http://dx.doi.org/10.1016/j.cell.2017.07.016>.

## Patents

- Published Application: [20190055556](#)
- Issued: [10,550,388 \(USA\)](#)

## Innovators

- Michelle Monje-Deisseroth
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