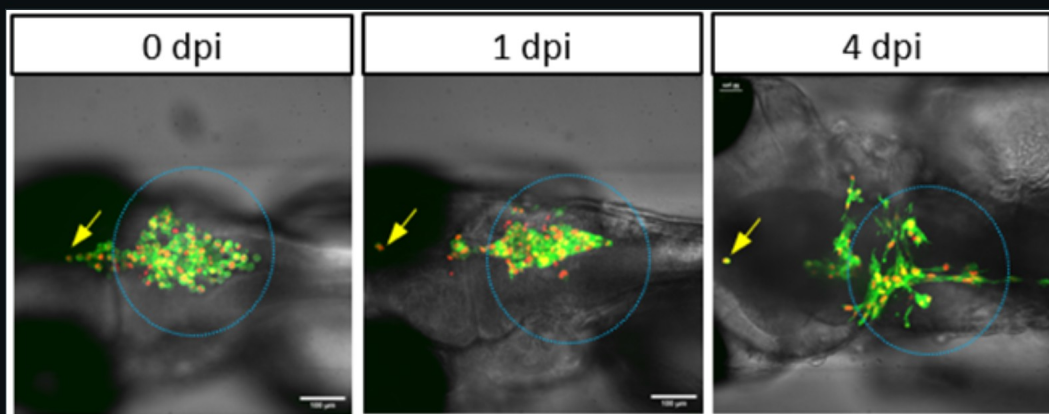


WATCH A TUMOUR SPREAD THROUGH A LIVING BRAIN

MAP4 kinases in medulloblastoma dissemination

Medulloblastoma is the most common malignant brain tumor in children, and disseminated disease remains a principal determinant of outcome. MAP4 kinases regulate cytoskeletal remodeling, adhesion and cell motility, and MAP4K4 has been implicated in medulloblastoma migration and invasion. Orthotopic xenografts in transparent zebrafish larvae allow individual tumor cells, and their interaction with the vasculature, to be followed within an intact brain over several days — an approach that is difficult to achieve in rodent models.



Medulloblastoma cells in the zebrafish brain at 0, 1 and 4 days post injection. The tumour mass loosens and cells move out into the surrounding tissue.

WHAT YOU WILL DO

- 1 Graft MAP4K3, MAP4K4, MAP4K5 and MAP4K6 knockout cells into the fish brain and measure how each one changes growth, dissemination and contact with blood vessels.
- 2 Find out what shifts in the cytoskeleton and in adhesion when a kinase is removed — or when MAP4K4 is blocked with an inhibitor.

WHAT YOU WILL LEARN

- Zebrafish handling and xenografting
- Longitudinal confocal imaging
- Quantitative image analysis
- Cell culture, in vivo drug treatment, immunohistochemistry

No zebrafish experience needed

WHEN

Available now, for one year

WHERE

Dept. of Molecular Life Sciences, Y13-K-44, Irchel Campus, UZH

SUPERVISION

Stephan Neuhaus, with the Baumgartner lab. Daily supervision: Veronica Akle, PhD