

## Proliferation and Early Neurogenesis after Oxygen-Glucose Deprivation (OGD) in serum-free Organotypic Hippocampal Slice Cultures (OHCs)

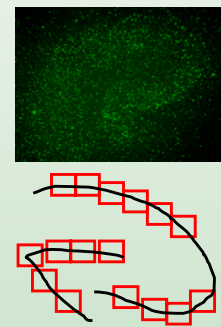
Compounds of interest can be assessed *in vitro* for their

- Capacity to stimulate cell proliferation, e.g, by growth factors
- Neurogenic potential in physiological and pathological (OGD) conditions

### Models

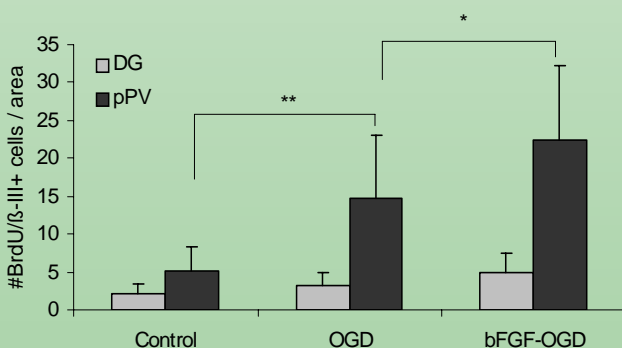
#### Cell proliferation

Proliferating cells are labelled by Bromodeoxyuridine (BrdU) immediately after oxygen-glucose deprivation (OGD). BrdU<sup>+</sup> cells (green) are counted to quantify proliferation in areas CA1, CA3 and AD. The proliferation assay can be combined with a degeneration assay to measure cell death (details see our “Neuroprotection” flyer).

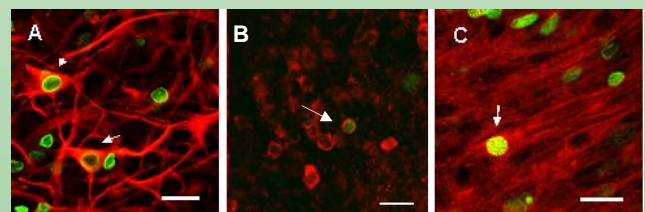


#### Early neurogenesis

BrdU/Doublecortin (BrdU/DCX) and BrdU/ $\beta$ III-Tubulin double immunohistochemistry is used to identify newly generated immature neurons. The number of immature neuronal cells in different hippocampal regions (DG, pPV) is determined by confocal laser microscopy analysis.



**Fig.1** . Quantification of newly generated neurons ( $\beta$ -III Tubulin /BrdU<sup>+</sup> cells) under serum-free conditions in different areas of the hippocampal formation after growth factor treatment. bFGF=basic fibroblast growth factor; DG = dentate gyrus;pPV=posterior periventricle; OGD=Oxygen Glucose Deprivation. The data are expressed as the mean $\pm$ SD, \*P<0.05, \*\*P<0.01 (ANOVA followed by post-hoc Newman-Keuls test)



**Fig.2** Progenitor cells (BrdU/Nestin<sup>+</sup> cells) in control cultures (A). Immature newly generated neurons (BrdU/DCX<sup>+</sup> cells) detected 2-3 d after BrdU administration (B). Newly generated neurons ( $\beta$ -III Tubulin/BrdU<sup>+</sup> cells) detected 5-6 d after BrdU administration (C). Scale bar 20 $\mu$ m.