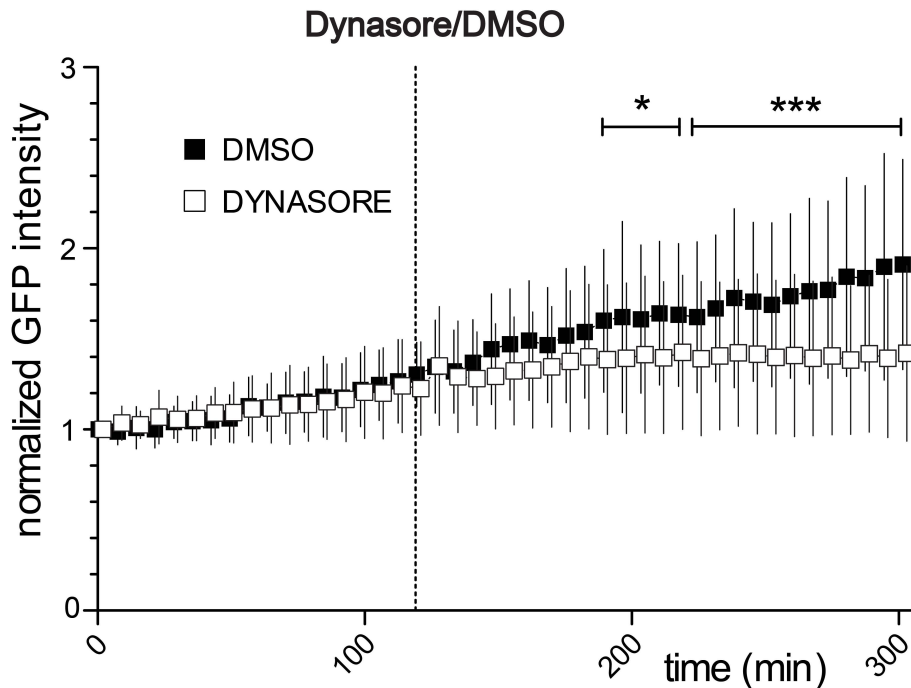


**SUPP. INFO. FIGURE 1: Polarized astrocytes in the wound healing model, related to Fig. 1.**

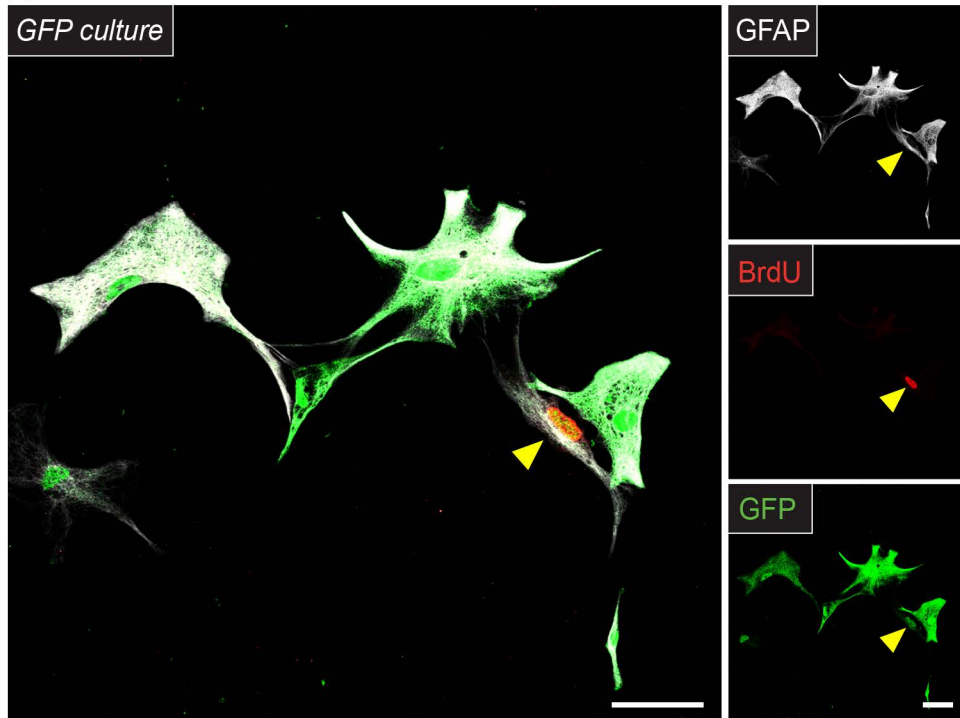
(A) VEGF-GFP expressing primary astrocytes were fixed and immunostained with anti-GFP and anti-VEGF antibodies. Near perfect co-localization, especially at ECM adhesion-like areas (insert), indicate a low level of post-translational cleavage of VEGF-GFP in our cultures. VEGF<sup>+</sup>/GFP<sup>-</sup> dots at the Golgi represent endogenous VEGF. Bars: 20 $\mu$ m (main image) and 10 $\mu$ m (close up). (B) Confocal images of astrocytes immunostained for Golgi (GM130) and centrosome ( $\gamma$ -tubulin, arrowheads) oriented towards the wound (dashed line, direction of polarization: arrow). Bar: 20 $\mu$ m. (C) Quantification of nucleo-centrosomal vectors confirm the generalized wound oriented polarization at the edge, but not in the center of cultures. n=3, 442 vs. 222 cells, wound vs. center, resp., unpaired t test \*\*\* p<0.001. (D) Confocal images of wound-edge astrocytes expressing VEGF-GFP; actin fibers are highlighted by phalloidin-RFP (Phall). Dashed line on magnified inserts points out the zone of actin arcs, which is devoid of VEGF accumulation. Bars: 25 $\mu$ m (main image) and 10 $\mu$ m (close up)



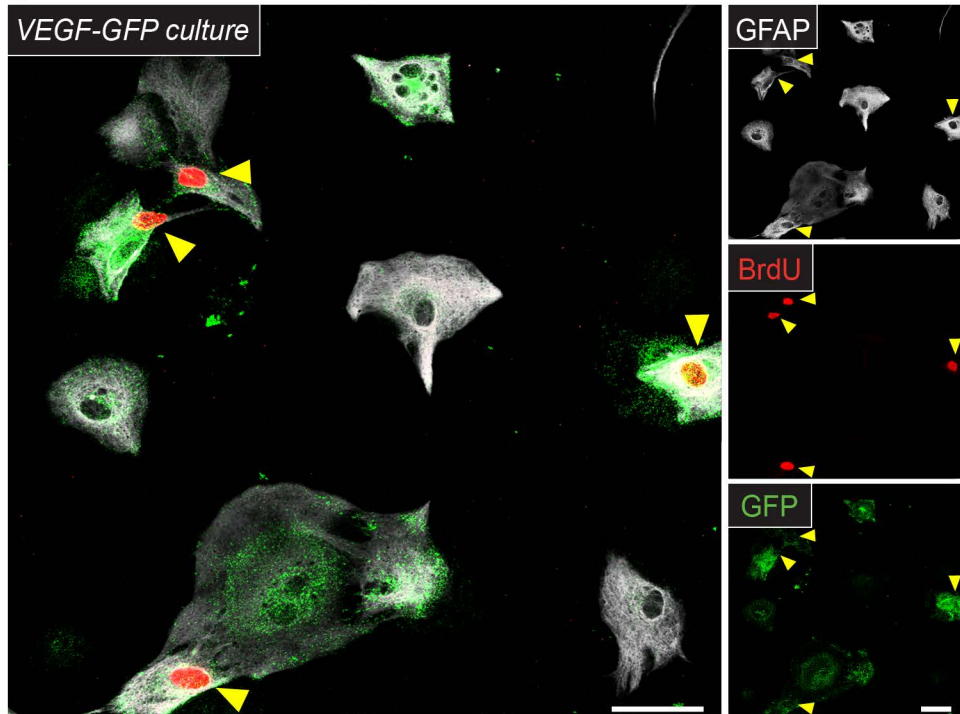
**SUPP. INFO. FIGURE 2: The effect of Dynasore on the surface accumulation of VEGF-GFP, related to Fig. 4.**

Quantification of GFP intensity in zones of ECM adhesions demonstrates that VEGF-GFP secretion at adhesions is uninterrupted by DMSO, while Dynasore stabilizes VEGF levels and prevents further accumulation. Mean GFP intensities measured at adhesion sites were normalized, corrected for bleaching and plotted in time, error bars represent SDs. The difference between the two curves suggests the dynamin-dependence of both the secretion and the removal of VEGF. Data of 73 vs. 61 adhesion sites from 3 experiments, Dynasore vs. DMSO, resp., two-way ANOVA and Bonferroni post-test \*  $p < 0.05$ , \*\*\*  $p < 0.001$ .

A



B



**SUPP. INFO. FIGURE 3: Proliferation studies in primary astrocytes, related to Fig. 5**

(A) GFP and (B) VEGF-GFP expressing primary astrocytes were replated at low density in serum-free medium, incubated for one hour with BrdU (30.75 $\mu$ g/ml), then fixed and immunostained with anti-BrdU (red), anti-GFP (green) and anti-GFAP (white) antibodies. Yellow arrowheads in the confocal images point at nuclei showing BrdU incorporation. Note that these nuclei belong exclusively to GFP+/GFAP+ astrocytes. Bars: 50 $\mu$ m.