



Supplementary Figure 1. Cytotoxic effects of G47Δ-mIL12 *in vitro* in mouse cells and matrigel-based tube formation and CD31 expression in human GSCs. A, B. Dose response curves for G47Δ-mIL12 in 005 GSCs after 3 days (**A**) and in MBMEC after 5 days (**B**), as measured by MTS assay. Cells (90μL) were seeded in 96-well plates in their respective medias, containing heparin, followed by inoculation of 10μL virus (at indicated dose) (0h post-seeding for MBMEC or 24h post-seeding for 005 GSCs) diluted in heparin-rich media (MBMEC n=2; 005GSCs n=3, each experiment performed in triplicate). In the presence of heparin, only 20% cytotoxicity (005 GSCs) or no cytotoxicity (MBMEC) was observed at the highest viral dose (MOI=10). **C, D.** Matrigel-based tube formation of human GSCs. Human primary (**C**) and recurrent (**D**) GSCs ($8-10 \times 10^4$) were resuspended in 1 ml endothelial cell growth media (EGM)-2 supplemented with the bullet kit (Lonza), plated into 24-well cell culture plates pre-coated with 250 μl of Matrigel (BD Bioscience) for 15-30 hours at 37°C, and tube formation was imaged at 20x. Microscopic images of representative wells are shown. Bar = 100 μm. **E, F.** CD31 expression in human GSCs. Human primary (**E**) and recurrent (**F**) GSCs were grown in endothelial cell growth media (EGM)-2 supplemented with the bullet kit (Lonza) for 3 days at 37°C, stained for CD31, and analyzed by flow cytometry. **G.** Matrigel-based tube formation of human GSCs. Human GSCs ($10-12 \times 10^4$) were resuspended in 1 ml endothelial cell growth media (EGM)-2 supplemented with the bullet kit (Lonza) with or without axitinib (10 μM), plated into 24-well cell culture plates pre-coated with 250 μl of Matrigel (BD Bioscience) for 24 hours at 37°C, and tube formation was imaged. Microscopic images of representative wells are shown. The images for MGG123 were obtained at different magnifications (20x for mock and 10x for axitinib), compared to MGG50 and 85 (4x).