Supplementary information

Novel target for peptide-based imaging and treatment of brain tumours

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Running title: Targeting malignant brain tumors
**Transfections and phage-binding assays**

For the binding assays U2-OS cells were transfected with the plasmid encoding the full-length MDGI using the FuGENE transfection reagent (Roche) according to the manufacturer’s instructions. Phage displaying either the CooP peptide sequence CGLSGLGVA or random CX7C library sequences were incubated with the transfected cells for two hours at 4°C. Cells were detached using a plastic scraper and the bound phage was rescued by infecting with bacteria.

**Immunoblot analysis**

The following primary antibodies were used: goat or rabbit polyclonal anti-MDGI antibody (Santa Cruz Biotechnology), mouse monoclonal anti-c-Myc (9E10) antibody (Biocompare), rabbit polyclonal anti-GAPDH antibody (Cell Signaling). After extensive washes the membranes were incubated with the horseradish peroxidase-coupled anti-goat, anti-mouse or anti-rabbit antibodies. The bound antibody was detected with the ECL (Pierce).

**Supplementary Figure 1.**

MDGI expression increased binding of the CooP phage. A, U2OS cells were transfected with the MDGI-cMyc encoding pcDNA3-9E10 plasmid. Binding of the CooP phage and unselected phage library to the transfected cells is shown as fold increase over the control phage ± SEM. B, MDGI expression in the transfected cells was confirmed by Western blot analysis using antibodies against MDGI and c-Myc. GAPDH served as a loading control.

**Supplementary Figure 2**

MDGI expression in glioma xenografts. MDGI expression was studied in tumor sections derived both from the EGFRvIII transformed neural stem cells of the INK4/Arf -/- mice
(NSCG, panel A-B) and from a patient tumor that has been propagated in vivo in mice (GBM43, panels C-D) with rabbit anti-MDGI antibodies using immunohistochemical staining (A and C). Rabbit IgG staining served as control (B and D). MDGI is shown as red color and nuclei in blue. Magnification A-K 400x, M-Q 200x. Images were digitally cropped in Photoshop CS6