

Supplementary Information

Methods:

Integrin quantification with flow cytometry and western blotting: U87MG and HeLa surface $\alpha_v\beta_3$ integrin expression was analyzed by flow cytometry and Western blot. Cells were harvested and resuspended in FACS buffer (Dulbecco's phosphate-buffered saline with 2% BSA) and stained with the anti-integrin $\alpha_v\beta_3$ monoclonal antibody (MAB1976, Chemicon International, Temecula, CA). Samples were read on a FACScan Analytic Flow Cytometer (Becton Dickinson). Cell lysates were assessed using α_v Antibody (CD51) (611012 BD Biosciences, San Jose, CA) and Integrin β_3 Antibody (4702, Cell Signaling Technology, Beverly, MA). Blotting was performed according to the manufacturer's instructions and imaged with the LI-COR Odyssey Imager using IR dye conjugated secondary antibodies.

Supporting Figures:

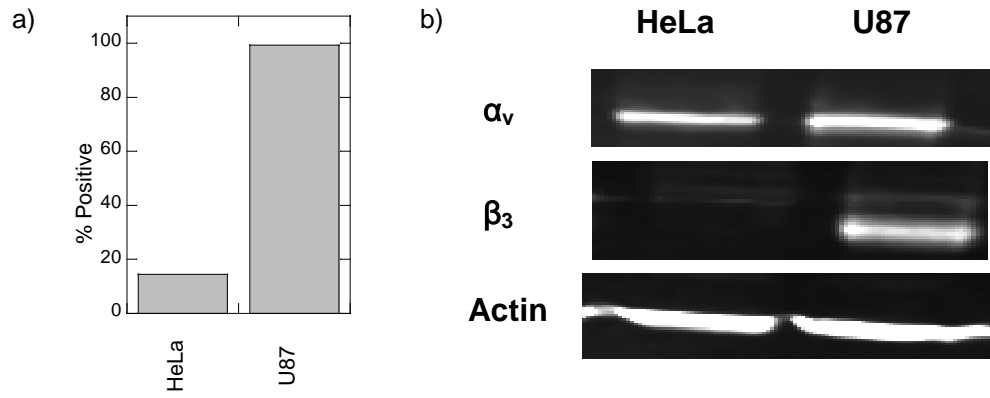


Figure S1: Integrin characterization of tumor cell lines used for in vivo assay. a) FACS of $\alpha_v\beta_3$ integrin expression in U87 and HeLa cells b) Protein quantification using western blotting for integrins (α_v and β_3) and actin.

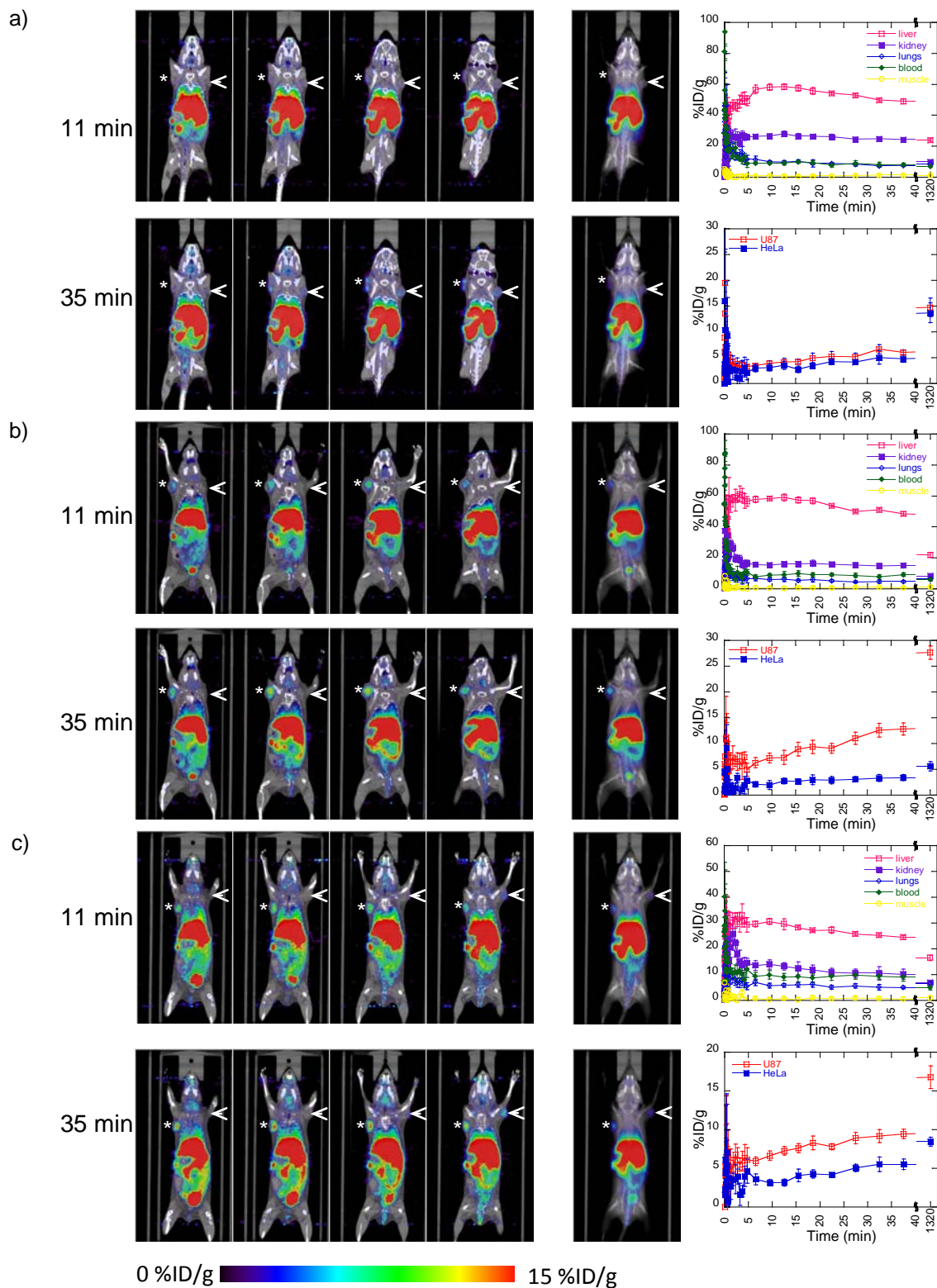


Figure S2: Dynamic biodistribution of DNA/PEI or DNA/PEI-Au polyplexes in SCID mice with U87 and HeLa tumors. PET/CT images (left) and signals in organs/tumors (right). a) DNA/PEI (control), b) DNA/PEI-Au (low), c) DNA/PEI-Au (high), (*=U87, ← = HeLa, Z in mm)

S3: Static 3D reconstruction of MicoPET/CT biodistribution for RGD nanocluster modified DNA/PEI (low)

S4: Static 3D reconstruction of MicoPET/CT biodistribution for unmodified (control) DNA/PEI

S5: Dynamic 3D reconstruction of MicoPET/CT biodistribution for RGD nanocluster modified DNA/PEI (low)