Title: Factors Influencing Luciferase-Based Bioluminescent Imaging in Preclinical

Models of Brain Tumor

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Elmquist[1]
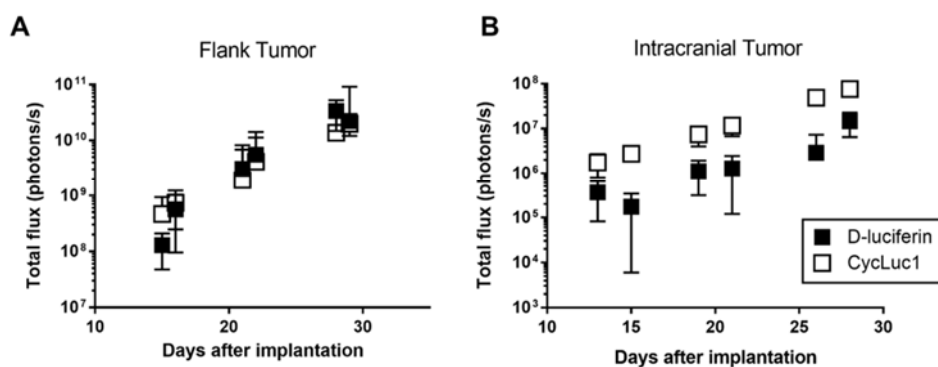
Supplemental Figures

Figure S1.   The intensity of BLI light signal from D-luciferin and CycLuc1 with

different orders of cross-over imaging with GBM6 implanted on the different
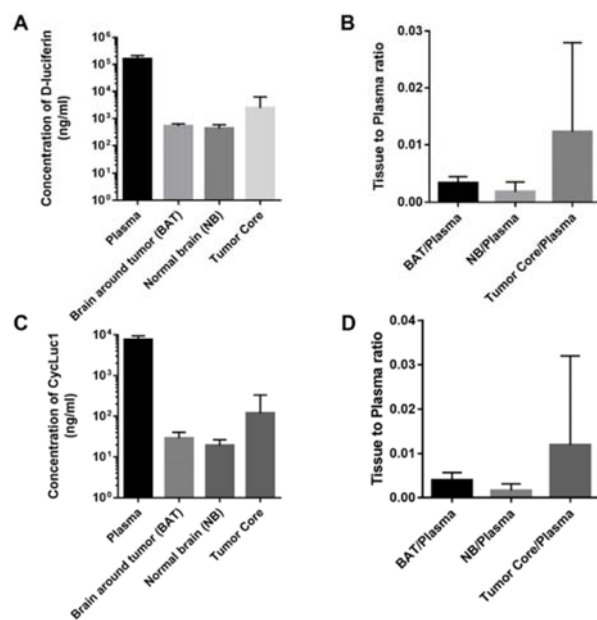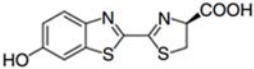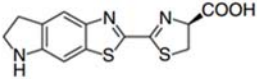
locations, flank and brain.

Figure S2.   Concentration of D-luciferin (A and B) and CycLuc1 (C and D) measured

by LC-MS/MS in and around the brain tumor following a single intraperitoneal dose of

150 mg/kg D-luciferin and 5 mg/kg CycLuc1. Tissues were harvested at 10 min post

dosing.

Table S1

Summary of physicochemical properties of D-luciferin and CycLuc1

	D-luciferin	CycLuc1
Structure		
Molecular Weight[1]	280.32	305.37
XLogP[1]	0.9	2.6
Hydrogen bond donor count[1]	2	2
Hydrogen bond acceptor count[1]	7	7
Polar surface area (A2)[1]	129	128
Emmission wavelength (nm)[2]	553	603
Km (uM)[2]	6.76±0.3	0.1±0.01

[1]Pubchem (https://pubchem.ncbi.nlm.nih.gov/))
[2]Harwood, Katryn R., et al. "Identification of mutant firefly luciferases that efficiently utilize animoluciferins." Chemistry & biology 18.12 (2011): 1649-1657.