Table S1. Relationship between luciferase substrate requirments and fluorophore photon production

BRET Molecule Name	Luciferase Partner	Luciferase QY[a]	Substrate	Molecules Substrate Photon^{-1}	Fluorophore Partner	Fluorophore QY	Excitaion Photons Emission Photon^{-1}	[b]Molecules Substrate Emission Photon^{-1}	Reference
LumiFluor - CeNLuc	NLuc	Unknown	FZ	Unknown	mCerulean3	0.87	1.15	3.38[c]	
LumiFluor - GpNLuc	NLuc	Unknown	FZ	Unknown	eGFP	0.60	1.75	5.16[c]	(Schaub et al., 2015)
N/A	OLuc	0.34	CLZ	2.94	N/A	N/A	N/A	N/A	(Shimomura et al., 1978)
eBAF-Y	RLuc	0.02	CLZ	50	Venus	0.57	1.75	87.72	(Saito et al., 2012)
Nano-lantern	RLuc8	0.05	CLZ	20	Venus	0.57	1.75	35.09	(Saito et al., 2012)

Abbreviations: BRET, bioluminescence resonance energy transfer; QY, quantum yield; CLZ, coelenterazine; FZ, furimazine; RLuc, Renilla; OLuc, Oplophorus; NLuc, NanoLuc

[a]Luciferase QY = number of photons emitted per luciferase molecule during a single catalytic cycle

[b]Molecules Substrate Emission Photon^{-1} = (Excitaion Photons Emission Photon^{-1}) x (Molecules Substrate Photon^{-1})

[c]Calculated based on known QY of OLuc