

**Table S6: Excitation filter / beam splitter combinations used for measurement of the SNR**

Fluorescent protein	Excitation filter	Beam splitter	Emission filter	SpectraX LED	SpectraX power
tSapphire	390/18 nm	T495 LPXR	525/50 nm	violet	15%
mAmetrine	438/24 nm	T495 LPXR	525/50 nm	blue	15%
mTFP1	438/24 nm	HC-BS 458	480/17 nm	blue	8%
mTurquoise2	438/24 nm	HC-BS 458	480/17 nm	blue	8%
sfGFP	488/6 nm	T495 LPXR	525/50 nm	cyan	25%
eGFP	488/6 nm	T495 LPXR	525/50 nm	cyan	25%
mNeonGreen	488/6 nm	T495 LPXR	525/50 nm	cyan	25%
mNeonGreen	504/12 nm	HC-BS 520	542/22 nm	teal	100%
CitrineA206K	504/12 nm	HC-BS 520	542/22 nm	teal	100%
mRuby2	561/4 nm	HC-BS 573	600/32 nm	green	42%
tdKO $\kappa$	546/10 nm	HC-BS 560	577/25 nm	green	23%
mKO $\kappa$	546/10 nm	HC-BS 560	577/25 nm	green	23%
mKate2	600/14 nm	HC-BS 624	655/40 nm	green	38%
mCardinal	600/14 nm	HC-BS 624	655/40 nm	green	38%
mNeptune2	600/14 nm	HC-BS 624	655/40 nm	green	38%

The light power setting of the epifluorescence excitation light source was adjusted so that the light intensity was 2.91 W cm<sup>-2</sup> for all measurements.