

Table 2 Properties of Extrinsic Chromophore Fluorescent Proteins

FP	$\lambda_{ex}/\lambda_{em}$ (nm)	ϕ	ϵ ($M^{-1}cm^{-1}$)	Brightness ^a ($\frac{M^{-1}cm^{-1}}{1000}$)	Photostability ^b (s)	pKa	Maturation Time (h)	Described Quaternary Structure	References
Flavin chromophore									
EcFbFP	448/496	0.44	14,500	6.4	168.6	<4.0	ND	Dimeric	Wingen et al. (2014) and Mukherjee, Walker, Weyant, and Schroeder (2013)
iLOV	447/497	0.44	ND	ND	ND	<4.0	ND	Dimeric	Chapman et al. (2008), Christie et al. (2012), and Mukherjee et al. (2013)
phiLOV2.1	450/497	0.2	ND	ND	778.2	ND	ND	Dimeric	Christie et al. (2012) and Wingen et al. (2014)
Bilirubin chromophore									
UnaG	498/527	0.51	77,300	39.4	ND	<4.0	0.08	ND	Kumagai et al. (2013) and To, Zhang, and Shu (2016)
Biliverdin chromophore									
IFP1.4	684/708	0.077	92,000	7.1	64	4.6	0.28	Weakly dimeric	Yu et al. (2015), Shu et al. (2009), and Filonov et al. (2011)
IFP2.0	690/711	0.07	86,125	6.0	70	ND	1.70	Weakly dimeric	Yu et al. (2015) and Yu, Gustafson, et al. (2014)
mIFP	683/704	0.08	82,000	6.6	400	<4.0	4.60	Monomeric	Yu et al. (2015)
iRFP713	690/713	0.063	98,000	6.2	>1800	4.0	0.57	Dimeric	Yu et al. (2015) and Filonov et al. (2011)
Retinal chromophore									
Arch (D95N)	585/687	0.0004	37,500	0.02	ND	8.9	ND	Monomeric	Kralj, Douglass, Hochbaum, Maclaurin, and Cohen (2012)

^aBrightness is calculated as $(\phi \cdot \epsilon)/1000$.

^bPhotostability represents bleaching $t_{1/2}$ under illumination conditions consistent only within chromophore groups; values are not translatable between groups or between extrinsic and intrinsic chromophore FPs.

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