

Properties of the best Fluorescent Proteins

Protein	Reference	Excitation, nm	Emission, nm	Brightness, % of eGFP	Protein	Reference	Excitation, nm	Emission, nm	Brightness, % of eGFP
Sirius	Tomosugi et al., Nat. Methods, 2009	355	424	12	YPet	Nguyen et al., Nat. Biotechnol., 2005, 23, 355	517	530	238
eBFP2	Ai et al., Biochemistry, 2007, 46, 5904	383	445	60	mKO	Karasawa, S., et al., Biochem J, 2004, 381, 307-312 www.mblintl.com	548	559	92
Azurite	Mena et al., Nat. Biotechnol., 2006, 24, 1569	383	448	43	mOrange	Shaner et al., Nat. Biotechnol., 2004, 22, 1524	548	562	146
TagBFP	Subach et al., Chem. Biol. 2008, 15, 1116-1124. www.evrogen.com	400	456	99	mKOk	Tsutsui H, et al., Nat. Methods 2008, 5, 683-685	551	563	190
mTurquoise	Goedhart et al., Nat. Methods, 2010, 7, 137-139	434	474	75	dTomato (dimer)	Shaner et al., Nat. Biotechnol., 2004, 22, 1524	554	581	142
Cerulean	Rizzo et al., Nat. Biotechnol., 2004, 22, 445	433	475	79	TagRFP	Merzlyak et al., Nat. Methods, 2007, 4, 555 www.evrogen.com	555	584	146
eCFP	www.clontech.com	439	476	39	mStrawberry	Shaner et al., Nat. Biotechnol., 2004, 22, 1524	574	596	78
CyPet	Nguyen et al., Nat. Biotechnol., 2005, 23, 355	435	477	53	LSS-mKate2	Piatkevich et al., PNAS, 2010, in press.	460	605	16
mTFPI (dimer)	Ai et al., Biochem. J., 2006, 400, 531	462	492	158	mCherry	Shaner et al., Nat. Biotechnol., 2004, 22, 1524	587	610	47
TagGFP2	www.evrogen.com	482	505	100	mKeima	Kogure et al., Nat. Biotechnol., 2006, 24, 577	440	620	12
eGFP	www.clontech.com	484	507	100	mKate2	Shcherbo et al., Nat. Methods, 2007, 4, 741 www.evrogen.com	588	635	74
Emerald	Cubitt et al., Methods Cell. Biol., 1999, 58, 19	487	509	116	E2-Crimson (tetramer)	Strack et al., Biochemistry, 2009, 48, 8279	611	646	86
Superfolder GFP	Pedelacq et al., Nat. Biotechnol, 2006, 24, 79-88	485	510	160	eqFP650 (dimer)	Shcherbo et al., Nat. Methods, 2010	592	650	46
T-Sapphire	Zapata-Hommer et al., BMC Biotechnol., 2003, 3, 5	399	511	78	mNeptune	Lin et al., Chem. Biol., 2009, 16, 1169	600	650	40
eYFP	www.clontech.com	514	527	151	TagRFP657	Morozova et al., Biophys J, 2010, 99, L13-L15	611	657	10
Venus	Nagai et al., Nat. Biotechnol., 2002, 20, 87	515	528	156	eqFP670 (dimer)	Shcherbo et al., Nat. Methods, 2010	605	670	12
mCitrine	Griesbeck et al., J. Biol. Chem., 2001, 276, 29188	516	529	174					

Brightness is a product of extinction coefficient (EC) and quantum yield (QY): $Brightness = EC \times QY$.

Chart is ordered by emission peak, not excitation peak.

Unless indicated, the fluorescent proteins listed are monomers and are suitable to genetically tag proteins of interest.

Updated August 2011