



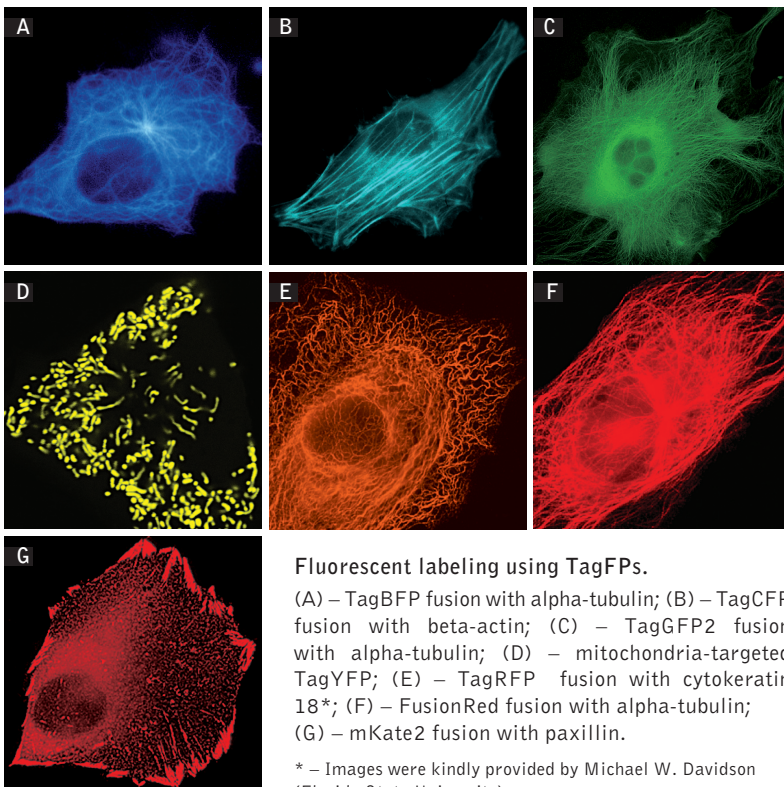
Fluorescent tags for *in vivo* protein labeling

Evrogen TagFPs are monomeric fluorescent proteins specially optimized for protein localization/interaction studies. Successful performance of TagFPs in protein labeling applications was validated in various models including highly oligomerizing cellular proteins like beta-actin and alpha-tubulin.

Protein	TagBFP	TagCFP	TagGFP2	TagYFP	TagRFP	FusionRed	mKate2
Fluorescence color	blue	cyan	green	yellow	red (orange)	red	far-red
Excitation max	402 nm	458 nm	483 nm	508 nm	555 nm	580 nm	588 nm
Emission max	457 nm	480 nm	506 nm	524 nm	584 nm	608 nm	633 nm
Quantum yield	0.63	0.57	0.60	0.62	0.48	0.19	0.40
Extinction coeff. ($M^{-1}cm^{-1}$)	52 000	37 000	56 500	50 000	100 000	94 500	62 500
Brightness*	32.8	21.1	33.9	31.0	48.0	18.0	25.0
Brightness, % of EGFP	99	64	105	94	148	53	74
pKa	2.7	4.7	5.0	5.5	3.8	4.6	5.4

* Brightness is a product of extinction coefficient and quantum yield, divided by 1000.

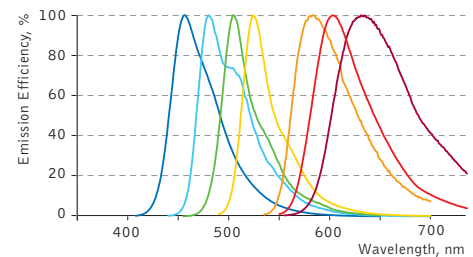
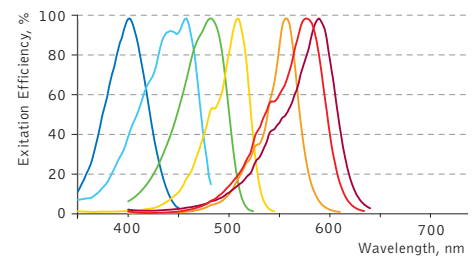
Expression of TagFP-tagged fusions in mammalian cells



Fluorescent labeling using TagFPs.

(A) – TagBFP fusion with alpha-tubulin; (B) – TagCFP fusion with beta-actin; (C) – TagGFP2 fusion with alpha-tubulin; (D) – mitochondria-targeted TagYFP; (E) – TagRFP fusion with cytokeratin 18*; (F) – FusionRed fusion with alpha-tubulin; (G) – mKate2 fusion with paxillin.

* – Images were kindly provided by Michael W. Davidson (Florida State University).

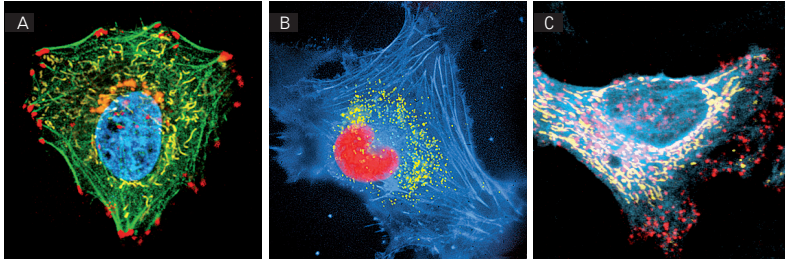


TagFPs normalized excitation/emission spectra.

— TagBFP — TagRFP
— TagCFP — FusionRed
— TagGFP2 — mKate2
— TagYFP

Ideal tool for multicolor labeling and FRET applications

Ranging in color from blue to far-red, Evrogen fluorescent proteins can be used for multicolor labeling and fluorescence resonance energy transfer (FRET) applications for visualization of protein translocation against other subcellular structures, investigation of protein-protein co-localization, detection of the onset of gene expression from distinct promoters, and separation of mixed cell populations.



Multicolor labeling of mammalian cells.

(A) – TagBFP-H2B fusion (blue), TagGFP-actin fusion (green), mitochondria-targeted PhiYFP (yellow); Golgi-targeted TagRFP (orange), mKate2-zyxin fusion (red);

(B) – TagBFP-actin fusion (blue), peroxisomes-targeted PhiYFP (yellow), TagRFP-H2B fusion (red);

(C) – TagCFP-tubulin fusion (cyan), mitochondria-targeted TagYFP (yellow), TagFP635*-clathrin fusion (red).

* TagFP635 is a parental variant of mKate2

TagFPs licensing opportunities

Evrogen technology embodied in TagFPs is available for expanded and commercial use with an adaptable licensing program. Benefits from flexible and market-driven license options are offered for upgrade and novel development of products and applications.

For licensing information, please contact Evrogen at license@evrogen.com

For more information, please visit our web-site:
www.evrogen.com

Protein localization tags: available vectors

Vector	Cat.#
Vectors for TagFPs expression and fusion construction	
pTagBFP-C	FP171
pTagCFP-C	FP111
pTagGFP2-C	FP191
pTagYFP-C	FP131
pTagRFP-C	FP141
pFusionRed-C	FP411
pmKate2-C	FP181
pTagBFP-N	FP172
pTagCFP-N	FP112
pTagGFP2-N	FP192
pTagYFP-N	FP132
pTagRFP-N	FP142
pFusionRed-N	FP412
pmKate2-N	FP182
Ready-to-use subcellular localization vectors	
pTagBFP-actin	FP174
pTagCFP-actin	FP114
pTagGFP2-actin	FP194
pTagRFP-actin	FP144
pmKate2-actin	FP184
pTagRFP-actinin	FP360
pmKate2-annexin	FP321
pFusionRed-cadherin	FP434
pmKate2-clathrin	FP322
pTagRFP-Cx43	FP364
pmKate2-EB3	FP316
pFusionRed-ER	FP420
pTagBFP-H2B	FP176
pTagRFP-H2B	FP368
pFusionRed-H2B	FP421
pmKate2-H2B	FP311
pmKate2-paxillin	FP323
pFusionRed-PDHA1	FP430
pFusionRed-talin	FP432
pTagBFP-tubulin	FP175
pTagGFP2-tubulin	FP195
pTagYFP-tubulin	FP135
pTagRFP-tubulin	FP145
pFusionRed-tubulin	FP433
pFusionRed-endo	FP427
pmKate2-endo	FP314
pTagRFP-Golgi	FP367
pFusionRed-f-mem	FP418
pmKate2-f-mem	FP186
pmKate2-lyso	FP312
pFusionRed-MAP4	FP428
pTagCFP-mito	FP117
pTagGFP2-mito	FP197
pTagYFP-mito	FP137
pTagRFP-mito	FP147
pmKate2-mito	FP187
pmKate2-peroxi	FP313