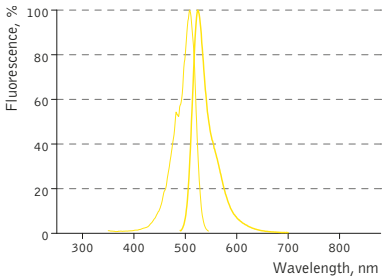
Yellow fluorescent protein TagYFP

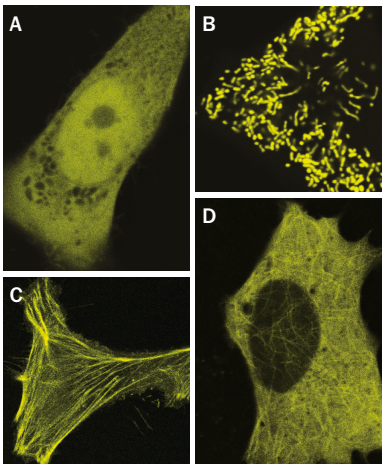
- Bright yellow fluorescence
- Monomeric protein with successful performance in fusions
- Fast maturation, high pH-stability and photostability
- Proven suitability to generate stably transfected cell lines
- Recommended for protein labeling

TagYFP is a monomeric yellow fluorescent protein developed on the basis of GFP-like protein from jellyfish *Aequorea macrodactyla* [Xia et al. 2002]. TagYFP possesses single excitation maximum at 508 nm, and emission maximum at 524 nm. TagYFP is more pH stable than EYFP.

TagYFP is mainly intended for protein labeling in protein localization and interaction studies. It can also be used for cell and organelle labeling and for tracking the promoter activity, although TurboYFP and Phi-Yellow proteins are preferable for such applications because they mature faster and give brighter fluorescent signal.



TagYFP normalized excitation (thin line) and emission (thick line) spectra.
Complete TagYFP spectra in Excel format can be downloaded from the Evrogen Web site at http://www.evrogen.com



TagYFP expression in mammalian cells.
(A) Confocal microscopy of cytoplasmic TagYFP expression in transiently transfected human HeLa cells; (B) confocal microscopy of mitochondria-targeted TagYFP expression in transiently transfected HeLa cells; (C) confocal microscopy of TagYFP fusion with the cytoplasmic β -actin in transiently transfected 3T3 cells; (D) confocal microscopy of TagYFP fusion with the α -tubulin in transiently transfected 3T3 cells.

Main properties of TagYFP

Characteristic	
Molecular weight, kDa	27.0
Polypeptide length, aa	239
Fluorescence color	yellow
Excitation maximum, nm	508
Emission maximum, nm	524
Quantum yield	0.62
Extinction coefficient, $M^{-1}cm^{-1}$	50 000
Brightness*	31
Brightness, % of EGFP	94
pKa	5.5
Structure	monomer
Aggregation	no
Maturation rate at 37°C	fast
Photostability	high
Cell toxicity	not observed

* Brightness is a product of extinction coefficient and quantum yield, divided by 1 000.

Performance and use

TagYFP can be easily expressed and detected in a wide range of organisms. Mammalian cells transiently transfected with TagYFP expression vectors give bright fluorescent signals in 10-12 hrs after transfection. No cytotoxic effects or visible protein aggregation are observed.
TagYFP performance in fusions has been demonstrated in human cytoplasmic β-actin and α-tubulin models. An expected pattern of fluorescence has been obtained in each case.
TagYFP suitability to generate stably transfected cells has been proven by Marinpharm company. Cell lines expressing TagYFP are commercially available.
TagYFP can be used in multicolor labeling applications with blue, cyan, red, and far-red fluorescent dyes.

Recommended filter sets and antibodies

The protein can be recognized using Anti-GFP antibody and Anti-Tag(CGY)FP antibody (Cat.# AB121) available from Evrogen.
Recommended Omega Optical filter sets for TagYFP are XF104-3 and XF105-2. It can also be detected using Chroma Technology Corp. filter set 41028 Yellow GFP BP (10C/Topaz) or the similar.

Available variants and fusions

TagYFP mammalian expression vectors contain TagYFP coding sequence with codon usage optimized for high expression in mammalian cells, i.e. humanized [Haas, Park, and Seed 1996]. Humanized TagYFP can also be expressed in *E. coli* and some other heterological systems upon subcloning into appropriate vector.

The available vectors encoding TagYFP variants and fusions are listed below in the section TagYFP-related products. For most updated product information, please visit Evrogen website www.evrogen.com.

If you need TagYFP codon variant or fusion construct that is not listed on our website, please contact us at product@evrogen.com.

Licensing opportunities

Evrogen technology embodied in TagYFP 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.

References

Haas, J., E. C. Park, and B. Seed (1996). Curr Biol, 6 (3): 315–324 / pmid: 8805248

Xia, XY et al. (2002). Mar Biotechnol (NY), 4 (2): 155–162 / pmid: 14961275

TagYFP-related products

Product	Cat.#	Description	Size
TagYFP expression/source vectors			
pTagYFP-C	FP131	Mammalian expression vector encoding humanized TagYFP and allowing its expression and generation of fusions to the TagYFP C-terminus	20 µg
pTagYFP-N	FP132	Mammalian expression vector encoding humanized TagYFP and allowing its expression and generation of fusions to the TagYFP N-terminus	20 µg
pTagYFP-tubulin	FP135	Mammalian expression vector encoding humanized TagYFP fused with human α-tubulin	20 µg
Antibodies against TagYFP			
Anti-Tag(CGY)FP	AB121	Rabbit polyclonal antibody against TagCFP, TagGFP, TagGFP2, TagYFP, PS-CFP2, Case12, HyPer, and EGFP	100 µg

Please contact your local distributor for exact prices and delivery information.