

## 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.

### 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  $\beta$ -actin and  $\alpha$ -tubulin models. An expected pattern of fluorescence has been obtained in each case.

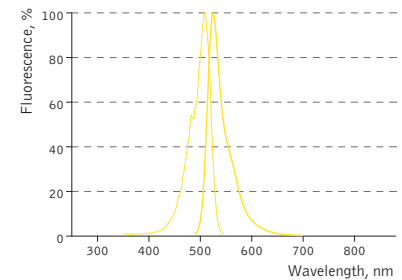
TagYFP suitability to generate stably transfected cells has been proven by Marinpharm company. Cell lines expressing TagYFP are commercially available.

TagYFP can be used in multicolor labeling applications with blue, cyan, red, and far-red fluorescent dyes.

### Recommended filter sets and antibodies

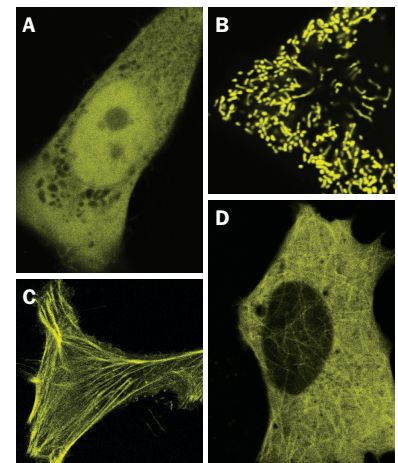
The protein can be recognized using Anti-Tag(CGY)FP antibody (Cat.# AB121-AB122) available from Evrogen.

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.



### 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  $\beta$ -actin in transiently transfected 3T3 cells; (D) confocal microscopy of TagYFP fusion with the  $\alpha$ -tubulin in transiently transfected 3T3 cells.

### 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 et al. 1996]. Humanized TagYFP can also be expressed in *E. coli* and some other heterologous 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](http://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](mailto: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](mailto:license@evrogen.com).

### References

Haas et al. (1996). *Curr Biol*, 6 (3): 315–324 / pmid: 8805248

Xia 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-actin                    | FP134 | Mammalian expression vector encoding humanized TagYFP fused with human cytoplasmic $\beta$ -actin                                    | 20 µg  |
| pTagYFP-tubulin                  | FP135 | Mammalian expression vector encoding humanized TagYFP fused with human $\alpha$ -tubulin   | 20 µg  |
| pTagYFP-mito                     | FP137 | Mammalian expression vector encoding humanized TagYFP targeted to mitochondria   | 20 µg  |
| Antibodies against TagYFP        |       |  |        |
| Anti-Tag(CGY)FP                  | AB121 | Rabbit polyclonal antibody against TagCFP, TagGFP, TagGFP2, TagYFP, PS-CFP2, Case12,   | 100 µg |
|                                  | AB122 | HyPer, and EGFP  | 200 µg |

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

### Notice to Purchaser:

TagYFP-related materials (also referred to as "Products") are intended for research use only.

The Products are covered by U.S. Pat. 7,888,113; European Pat. 06809023; and other Evrogen Patents and/or Patent applications pending. By use of these Products, you accept the terms and conditions of the applicable Limited Use Label License #001: <http://www.evrogen.com/products/Evrogen-FP-license.shtml>.

The CMV promoter is covered under U.S. Patents 5,168,062 and 5,385,839, and its use is permitted for research purposes only. Any other use of the CMV promoter requires a license from the University of Iowa Research Foundation, 214 Technology Innovation Center, Iowa City, IA 52242.

**MSDS information** is available at <http://www.evrogen.com/MSDS.shtml>