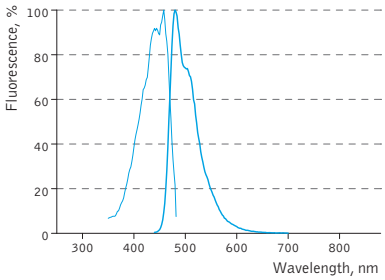
Cyan fluorescent protein TagCFP

- Bright cyan 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



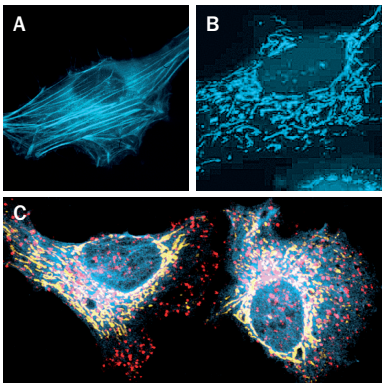
TagCFP normalized excitation (thin line) and emission (thick line) spectra.
Complete TagCFP spectra in Excel format can be downloaded from the Evrogen Web site at http://www.evrogen.com

TagCFP is a cyan monomeric protein generated on the basis of the wild-type GFP-like protein from jellyfish *Aequorea macrodactyla* [Xia et al. 2002]. It possesses bright fluorescence with excitation/emission maxima at 458 and 480 nm, respectively. TagCFP is significantly brighter than commonly used ECFP.
TagCFP 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.

Main properties of TagCFP

Characteristic	
Molecular weight, kDa	26.7
Polypeptide length, aa	239
Fluorescence color	cyan
Excitation maximum, nm	458
Emission maximum, nm	480
Quantum yield	0.57
Extinction coefficient, $M^{-1}cm^{-1}$	37 000
Brightness*	21.1
Brightness, % of EGFP	64
pKa	4.7
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.



Expression of TagCFP fusions in mammalian cells.
(A) Transiently transfected HeLa cells expressing TagCFP-tagged β-actin; (B) stably transfected U-205 cells expressing mitochondria-targeted TagCFP; (C) TagCFP use in multicolor labeling of HeLa cells: TagCFP-tagged α-tubulin (cyan), TagFP635-clathrin fusion (red), mitochondria-targeted TagYFP (yellow).
Image was kindly provided by Michael W. Davidson (Florida State University).

Performance and use

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

Recommended filter sets and antibodies

TagCFP can be recognized using Anti-GFP antibody and Anti-Tag(CGY)FP antibody (Cat.# AB121) available from Evrogen.
TagCFP can be detected using fluorescence filter sets for ECFP and the similar. Recommended Omega Optical filter sets are XF114-2 and XF130-2.

Available variants and fusions

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

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

If you need TagCFP 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 TagCFP 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

TagCFP-related products

Product	Cat.#	Description	Size
TagCFP expression/source vectors			
pTagCFP-N	FP112	Mammalian expression vector encoding humanized TagCFP and allowing its expression and generation of fusions to the TagCFP N-terminus	20 µg
pTagCFP-actin	FP114	Mammalian expression vector encoding humanized TagCFP fused with human cytoplasmic β-actin	20 µg
pTagCFP-mito	FP117	Mammalian expression vector encoding humanized TagCFP targeted to mitochondria	20 µg
Antibodies against TagCFP			
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.