

**Ordering Information**  
 Web [www.encorbio.com](http://www.encorbio.com)  
 Email [admin@encorbio.com](mailto:admin@encorbio.com)  
 Phone 352-372-7022  
 Fax 352-372-7066

HGNC Name: NA  
 RRID: Pending  
 Format: 1mg/mL in 6M Urea, 10mM phosphate pH=7.5  
 Storage: Store at -20°C  
 UniProt: Q6YGZO

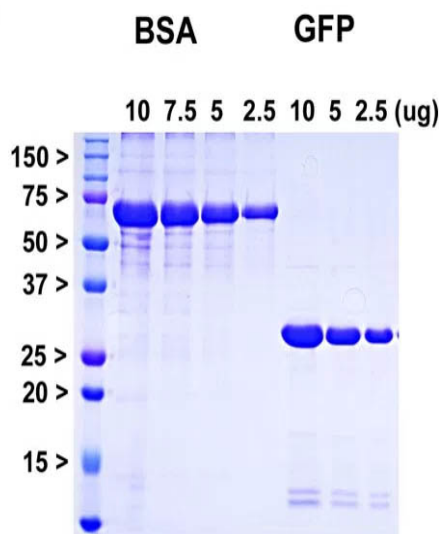
#### References:

1. Shimomura O, Johnson FH, Saiga Y. Extraction, purification and properties of aequorin, a bioluminescent protein from the luminous hydromedusa, *Aequorea*. *J. Cell. Comp. Physiol.* 3:223-39 (1962).
2. Shimomura, O. Structure of the chromophore of *Aequorea* green fluorescent protein. *FEBS Lett.* 104:220-2 (1979).
3. Prasher DC, et al. Primary structure of the *Aequorea victoria* green-fluorescent protein. *Gene* 111:229-33 (1992).
4. Cody CW, et al. Chemical structure of the hexapeptide chromophore of the *Aequorea* green-fluorescent protein. *Biochem.* 32:1212-8 (1993).
5. Chalfie M, et al. Green Fluorescent protein as a marker for gene expression. *Science* 263:802-5 (1994).
6. Heim R, Prasher DC, Tsien RY. Wavelength mutations and post-translational autoxidation of green fluorescent protein. *PNAS* 91:12501-04 (1994).
7. Ormo M, et al. Crystal structure of the *Aequorea victoria* green fluorescent protein. *Science* 273:1392-95 (1996).
8. Tsien RY. The green fluorescent protein. *Annu. Rev. Biochem.* 67:509-44 (1998).
9. Zacharias DA, Violin JD, Newton AC, Tsien RY. Partitioning of lipid-modified monomeric GFPs into membrane microdomains of live cells. *Science* 296:913-6 (2002).
10. Gurskaya NG, et al. A colourless green fluorescent protein homologue from the non-fluorescent hydromedusa *Aequorea coerulea* and its fluorescent mutants. *Biochem. J.* 373:403-8 (2003).

# GFP Recombinant Protein

# Prot-r-AcGFP

Applications	Host	Molecular Wt.	HGNC	UniPort
Protein standard, immunogen	E. coli	~27kDa	NA	Q6YGZO



Coomassie brilliant blue stained SDS-PAGE of PROT-ACGFP and appropriate standards. Protein standards of indicated molecular size in kiloDaltons in leftmost lane, next four lanes show indicated microgram amounts of pure bovine serum albumin (BSA), final three lanes show indicated microgram amounts of recombinant AcGFP.

#### Background:

The [green fluorescent protein \(GFP\)](#) is a 27kDa protein isolated originally from the jellyfish *Aequoria victoria*. It has an endogenous fluorochrome activity with excitation maximum at 395nm and emission maximum at 509nm, which is similar to that of fluorescein (1,2). The GFP gene was cloned and sequenced and the origin of the fluorochrome by autocatalytic activity of certain amino acids was discovered (3,4). Much interest in GFP was generated when it was shown that fluorescence develops rapidly when the protein is expressed and requires only molecular oxygen and no other cofactors. As a result GFP can be expressed in fluorescent form in essentially any prokaryotic or eukaryotic cell (5). GFP has been engineered to produce a vast number of variously colored mutants including blue, cyan and yellow protein derivatives, BFP, CFP and YFP (6-9). GFP and other fluorescent proteins derived from jellyfish, coral and other Cnidaria are widely used as tracers in transfection and transgenic experiments to monitor gene expression and protein localization *in vivo* and in *in vitro*. The crystal structure of GFP was determined (7) which allowed amino acid modifications to improve spectral properties and prevent multimerization (8,9). The [2008 Nobel prize in chemistry](#) was awarded "for the discovery and development of the green fluorescent protein, GFP".

The PROT-r-AcGFP protein originates from an *Aequoria coerulea*, a close relative of *A. victoria*, and the protein was engineered to improve spectral properties and prevent oligomerization (10). This form of GFP, referred to as AcGFP, is 94% identical to the eGFP developed by Tsien and coworkers and is the form of GFP inserted in the [Clontech/Takara pAcGFP and related expression vectors](#). We also supply mouse monoclonal antibodies and rabbit, chicken and goat polyclonal antibodies to this protein, [MCA-3B11](#), [MCA-1F1](#), [RPCA-GFP](#), [CPCA-GFP](#) and [GPCA-GFP](#).

FOR RESEARCH USE ONLY. NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE.

#### Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.