



# GFP (1-238): sc-4304 WB

## BACKGROUND

GFP (green fluorescent protein) is the gene product of the jellyfish *Aequorea victoria* that interacts with Ca<sup>2+</sup> ions and fluoresces in the lower green portion of the visible spectrum. GFP produces a fluorescent product when expressed in prokaryotic cells, without the need for exogenous substrates, making GFP a useful tool for monitoring gene expression and protein localization. The gene for GFP has been isolated and has become a useful tool for making expressed proteins fluorescent by creating chimeric genes composed of different color variants of the GFP gene linked to cDNA encoding proteins of interest. The *in vivo* fluorescent protein chimera can be followed in a living system. Several highly homologous GFP mutants have been developed, making them useful for FACS, fluorescence microscopy, and double-labeling applications. Color mutants from the GFP gene include the enhanced green fluorescent protein cyan fluorescent protein (CFP) and the yellow fluorescent protein (YFP).

## REFERENCES

1. Prasher, D.C., Eckenrode, V.K., Ward, W.W., Prendergast, F.G., and Cormier, M.J. 1992. Primary structure of the *Aequorea victoria* green-fluorescent protein. *Gene* 111: 229-233.
2. Chalfie, M., Tu, Y., Euskirchen, G., Ward, W.W., and Prasher, D.C. 1994. Green fluorescent protein as a marker for gene expression. *Science* 263: 802-805.
3. Inouye, S. and Tsuji, F.I. 1994. *Aequorea* green fluorescent protein. Expression of the gene and fluorescence characteristics of the recombinant protein. *FEBS Lett.* 341: 277-280.
4. Cormack, B.P., Valdivia, R.H., and Falkow, S. 1996. FACS-optimized mutants of the green fluorescent protein (GFP). *Gene* 173: 33-38.
5. Rizzuto, R., Brini, M., De Giorgi, F., Rossi, R., Heim, R., Tsien, R.Y., and Pozzan, T. 1996. Double labelling of the subcellular structures with organelle-targeted GFP mutants *in vivo*. *Curr.Biol.* 6: 183-188.
6. Enoki, S., Saeki, K., Maki, K., Kuwajima, K. 2004. Acid denaturation and refolding of green fluorescent protein. *Biochemistry.* 43: 14238-14248.
7. Lehtinen, J., Nuutila, J., Lilius, E.M. 2004. Green fluorescent protein-propidium iodide (GFP-PI) based assay for flow cytometric measurement of bacterial viability. *Cytometry* 60A:165-172.
8. Gorokhovatsky, A.Y., Marchenkov, V.V., Rudenko, N.V., Ivashina, T.V., Ksenzenko, V.N., Burkhardt, N., Semisotnov, G.V., Vinokurov, L.M., Alakhov, Y.B. 2004. Fusion of *Aequorea victoria* GFP and aequorin provides their Ca<sup>2+</sup>-induced interaction that results in red shift of GFP absorption and efficient bioluminescence energy transfer. *Biochem. Biophys. Res. Commun.* 320: 703-711.
9. Su, W.W., Liu, B., Lu, W.B., Xu, N.S., Du, G.C., Tan, J.L. 2005. Observer-based online compensation of inner filter effect in monitoring fluorescence of GFP-expressing plant cell cultures. *Biotechnol. Bioeng.* 91 :213-226.

## SOURCE

GFP (1-238) is expressed in *E. coli* as a 53 kDa tagged fusion protein corresponding to amino acids 1-238 of GFP of *Aequorea victoria* origin.

## PRODUCT

GFP (1-238) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

## APPLICATIONS

GFP (1-238) is suitable as a Western blotting control for sc-5384, sc-5385, sc-8334 and sc-9096.

## STORAGE

Store at -20° C; stable for one year from the date of shipment.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.