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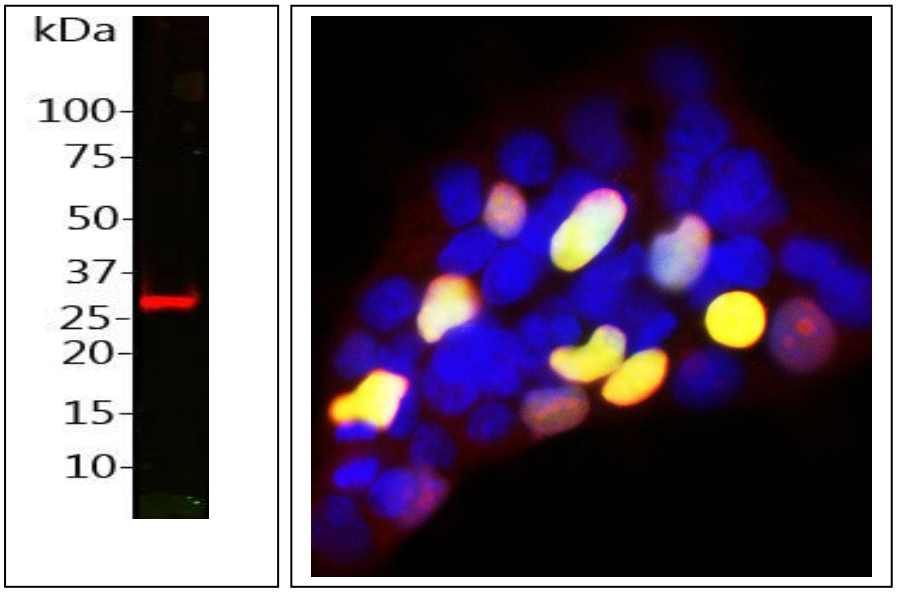
Catalogue# CPCA-GFP: Chicken Polyclonal Antibody to GFP

The Immunogen: Green Fluorescent Protein (GFP) is a 27 kDa protein isolated originally from the jellyfish *Aequoria Victoria.* It has an excitation maximum at 395 nm and emission maximum at 509 nm. When excited with blue or UV light, it emitted green light (1). GFP was shown to fluoresce on contact with molecular oxygen, requiring no other cofactors, and so can be expressed in fluorescent form in essentially any prokaryotic or eukaryotic cell. GFP has been engineered to produce a vast number of variously colored mutants including blue, cyan and yellow protein derivatives, such as BFP, CFP and YFP etac (2-4). GFP and these derivatives are widely used as fluorescent tracers in transfection and transgenic experiments to monitor gene expression and protein localization *in vivo*. GFP was the basis of the 2008 Nobel Prize in Chemistry, awarded to Osamu Shimomura, Martin Chalfie and Roger Tsien, specifically "for the discovery and development of the green fluorescent protein, GFP".



Figures: Left: Blot of HEK293 cells transfected with pFin-EF1-GFP vector was probed with CPCA-GFP. There is a strong clean band at about 27kDa corresponding to GFP. **Right:** Transfected HeK293 cells which overexpress GFP-fusion protein with nuclear localization sequence were stained with CPCA-GFP. Most Hek293 cells are not transfected so only the nucleus of these cells can be visualized with a blue DNA stain. Cells which are transfected with GFP are bright green. Staining with CPCA-GFP is shown in red. Red antibody staining is only seen in cells which express GFP, as expected, and the superimposition of the green and red results in an orange signal.

Antibody characteristics: Antibody was raised in chicken against a recombinant full length GFP protein expressed in and purified from *E. coli*. Antibody is affinity purified on immunogen from IgY preparation at 1 mg/mL in PBS with 50% glycero.

Suggestions for use: Try at dilutions of 1:1,000-5,000 for immunofluorescence and Western blots.

References:

1: Shimomura O, Johnson FH, Saiga Y. "Extraction, purification and properties of aequorin, a bioluminescent protein from the luminous hydromedusan, Aequorea". Journal of Cellular and Comparative Physiology (3): 223–39 (1962).

2: Ormo M, Cubitt AB, Kallio K, Gross LA, Tsien RY, Remington SJ: Crystal structure of the Aequorea victoria green fluorescent protein. Science 273: 1392-95 (1996).

3: Heim R, Prasher DC, Tsien RY: Wavelength mutations and posttranslational autoxidation of green fluorescent protein. Proc. Natl. Acad. Sci. USA 91 12501-04 (1994).

4: Lelimousin M, Noirclerc-Savoye M, Lazareno-Saez C, Paetzold B, Le Vot S, Chazal R et al. (Oct 2009). "Intrinsic dynamics in ECFP and Cerulean control fluorescence quantum yield". Biochemistry48 (42): 10038–10046.

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis. ©EnCor Biotechnology Inc. October 6, 2015.