

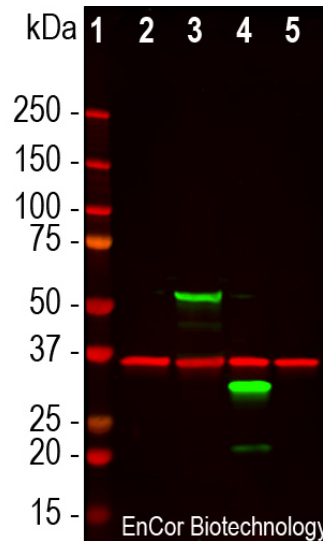
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**HGNC Name:** NA  
**UniProt:** D1MPT3  
**RRID:** AB\_2858265  
**Immunogen:** Full length recombinant mCherry protein  
**Format:** Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaH<sub>2</sub>PO<sub>4</sub>  
**Storage:** Store at 4°C for short term, for longer term at -20°C  
**Recommended dilutions:**  
 WB: 1:2,000. IF/ICC 1:1,000

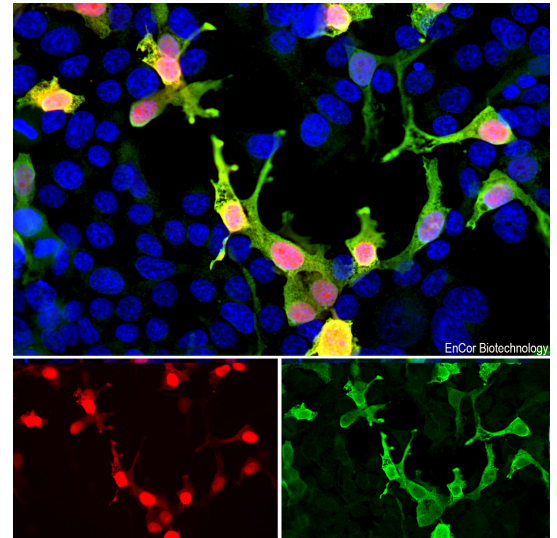
**References:**

1. Baird GS, Zacharias DA, Tsien RY. Biochemistry, mutagenesis, and oligomerization of DsRed, a red fluorescent protein from coral. *PNAS* 97:11984-9 (2000).
2. Gross LA, et al. The structure of the chromophore within DsRed, a red fluorescent protein from coral. *PNAS* 97:11990-5 (2000).
3. Heikal AA, et al. Molecular spectroscopy and dynamics of intrinsically fluorescent proteins: coral red (dsRed) and yellow (Citrine). *PNAS* 97:11996-2001 (2000).
4. Shaner NC, et al. Improved monomeric red, orange and yellow fluorescent proteins derived from *Discosoma* sp. red fluorescent protein. *Nat. Biotech.* 22:1567-72 (2004).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB IF/ICC, IHC	Goat		~28kDa	NA



Western blot analysis of HEK293 cell lysates using goat pAb to mCherry, GPCA-mCherry, dilution 1:1,000, in green, and rabbit pAb to GAPDH, *RPCA-GAPDH*, dilution 1:5,000, in red: [1] protein standard, [2] untransfected HEK293 control cells, [3] HEK293 cells transfected with pCI-Neo-mod vector expressing two tdTomato protein domains, [4] HEK293 cells transfected with pCI-Neo-mod vector expressing one mCherry-HA protein domain, and [5] HEK293 cells transfected with pCI-Neo-mod vector expressing one GFP domain. The GPCA-mCherry antibody recognizes tdTomato and mCherry proteins revealing major bands at about 60kDa and 30kDa, but does not recognize GFP. The red band at 37kDa corresponds to GAPDH protein here used as a loading control.



Immunofluorescent analysis of HEK293 cells transfected with mCherry-HA construct (red) and stained with goat pAb to mCherry, GPCA-mCherry, dilution 1:2,000, in green. The blue is Hoechst staining of nuclear DNA. The GPCA-mCherry antibody reveals mCherry protein expressed only in transfected cells which appear golden in color. Untransfected cells expressing no mCherry are not recognized by the antibody, as a result only their nuclei are visible.

**Background:**

The mCherry protein is engineered from a fluorescent protein originally isolated from a coral and is widely used as a tracer in transfection and transgenic experiments. The prototype for these fluorescent proteins is **Green Fluorescent Protein (GFP)**, which is a ~27kDa protein isolated originally from the jellyfish *Aequoria victoria*. 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”. The mCherry protein is derived from DsRed, a red fluorescent protein related to GFP isolated from disc corals of the genus *Discosoma*. DsRed is similar in size and properties to GFP, but, obviously, produces a red rather than a green fluorochrome. The original DsRed was engineered extensively in the **Tsien lab** to prevent it from forming tetramers and dimers and to modify and improve the spectral properties (1-3). Several further cycles of mutation, directed modification and evolutionary selection produced mCherry, which has an excitation maximum at 587nm and an emission maximum at 610nm (4). Several further cycles of mutation, directed modification and evolutionary selection produced mCherry, which has an excitation maximum at 587nm and an emission maximum at 610nm (4). The same lab engineered other fluorescent DsRed derivatives such as tdTomato, mOrange, mStrawberry and others. This antibody likely binds all these variants and is known to bind tdTomato.

GPCA-mCherry antibody was made against full length recombinant mCherry protein expressed in and purified from *E. coli*, **Prot-r-mCherry**. The antibody recognizes mCherry and tdTomato on western blots, in appropriate cells and sections, and does not react with GFP. GPCA-mCherry antibody can be used to verify the size of fusion constructs by western blotting, and to amplify the endogenous fluorescence of mCherry in transfected cells. We also supply a mouse monoclonal antibody to mCherry, **MCA-1C51**, and **MCA-5A6**, as well as rabbit and chicken polyclonal antibodies to this protein, **RPCA-mCherry**, and **CPCA-mCherry** respectively.

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**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.**

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