

**Anti-RFP (VHH) Single Domain Antibody**  
**Recombinant RFP Antibody**  
**Catalog # ASR5056****Specification**

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**Anti-RFP (VHH) Single Domain Antibody - Product Information**

Conjugate  
Clonality  
Application  
Application Note

**Unconjugated**  
**Recombinant Monoclonal**  
**WB, E, I, LCI**  
Anti-RFP is a his-tagged monoclonal recombinant antibody designed to detect Red Fluorescent Protein and its conjugates. This antibody has been tested by western blot, dot blot, and ELISA and is intended for use in immunological assays including immunofluorescence and fluorescence activated cell sorting (FACS). The antibody can be labeled with dyes, enzymes or fluorescence, directly or secondarily, for visualization and detection of RFP-conjugated molecules by immunofluorescence. Secondary detection can be achieved using conjugated anti-His tag or anti-VHH antibodies. Optimal titers for applications should be confirmed by the end user. This antibody is not suitable for Western blot detection of denatured RFP.

Physical State  
Buffer  
Species of Origin  
Stabilizer  
Preservative

**Liquid (sterile filtered)**  
**1X PBS, pH 7.4**  
**E. Coli**  
**20% (v/v) Glycerol**  
**0.01% (w/v) Sodium Azide**

**Anti-RFP (VHH) Single Domain Antibody - Additional Information****Purity**

Anti-RFP (VHH) Antibody is a recombinant antibody. The clone was isolated from a library prepared from a hyper-immunized llama host and purified by affinity chromatography from bacterial culture. Expect reactivity against RFP-labeled probes and proteins.

**Storage Condition**

Store at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

**Precautions Note**

This product is for research use only and is not intended for therapeutic or diagnostic applications.

## Anti-RFP (VHH) Single Domain Antibody - Protein Information

**Name** RFP

### Function

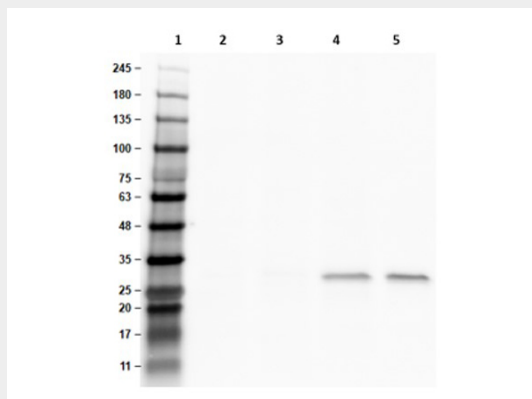
Thought to play a role in photoprotection of the coral's resident symbiont microalgae's photosystems from photoinhibition caused by high light levels found near the surface of coral reefs. In deeper water, the fluorescence may be to convert blue light into longer wavelengths more suitable for use in photosynthesis by the microalgal symbionts.

## Anti-RFP (VHH) Single Domain Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Anti-RFP (VHH) Single Domain Antibody - Images



Western Blot Results of Anti-RFP (VHH) Single Domain Antibody. Lane 1: Opal Prestained Molecular Weight (p/n MB-210-0500). Lane 2: HEK293 Whole Cell Lysate (p/n W09-000-365) [10ug] (-). Lane 3: HEK293 Whole Cell Lysate (p/n W09-000-365) [10ug] + GFP rec. protein (p/n 000-001-215) [1ug] (-). Lane 4: HEK293 Whole Cell Lysate (p/n W09-000-365) [10ug] + RFP rec. protein (p/n 000-001-379) [1ug] (+). Lane 5: RFP rec. protein (p/n 000-001-379) [1ug] (+). Primary Antibody: Anti-RFP (VHH) Single Domain Antibody (p/n 400-001-MS3) at 1:1000 for overnight at 4°C. Secondary Antibody: Mouse Anti-6x His DL649 conjugated (p/n 200-343-382) at 1:10,000 for 1hr at RT. Block: Blocking Buffer for Fluorescent Western Blotting (p/n MB-070) overnight at 4°C. Expected MW: ~27kDa for RFP protein.

## Anti-RFP (VHH) Single Domain Antibody - Background

Fluorescent proteins such as Discosoma Red Fluorescent Protein (DsRed) from sea anemone *Discosoma* sp. mushroom or green fluorescent protein (GFP) from *Aequorea victoria* jellyfish are

widely used in research practice. Fusion RFP and GFP commonly serve as marker for gene expression and protein localization. As DsRed and GFP share only 19% identity, therefore, in general, anti-GFP antibodies do not recognize DsRed protein and vice versa. Structurally, Discosoma red fluorescent protein is similar to Aequorea green fluorescent protein in terms of its overall fold (a  $\beta$ -can) and chromophore-formation chemistry. However, Discosoma red fluorescent protein undergoes an additional step in the chromophore maturation and obligates tetrameric structure. Rockland offers many controls, monoclonal, polyclonal and recombinant antibodies for RFP.

A single-domain antibody (sdAb) is a small antibody fragment consisting of the monomeric variable domain derived from camelid heavy chain-only immunoglobulins naturally found in llamas, alpacas and camels. Also known as VHH antibodies, these are the smallest functional antigen-binding fragment that occurs in nature (12 - 14 kDa) and are now being used in biotechnology as a novel antibody scaffold. The small size of the VHH single domain antibody makes it very attractive for use in diagnostic imaging and potentially therapeutic applications.