

## Product Specification Sheet

### Anti-Yellow Fluorescent Protein (YFP) Antibody and controls

•• <b>Cat.</b> YFP11-A	Rabbit Anti-Yellow Fluorescent Proteins (YFP) protein IgG	<b>SIZE:</b> 100 ul
•• <b>Cat.</b> YFP11-C	Recombinant Yellow Fluorescent Proteins (YFP) protein control for Western blot	<b>SIZE:</b> 100 ul

Recombinant DNA technology allows the addition of short pieces of well-defined tags, "peptides" or proteins at the amino or c-terminus of target genes, which can provide 'affinity handles' designed to bind specific matrices. Therefore, tags enables a selective identification and purification of the protein of interest. The addition of a green fluorescent protein (GFP) tag or red fluorescent protein (RFP) or yellow fluorescent protein (YFP) to a given gene, creates a stable fusion product that does not appear to interfere with the bioactivity of the protein, or with the biodistribution of the fluorescent tagged product.



**Yellow fluorescent protein (YFP)** is a genetic mutant of green fluorescent protein (GFP) originally derived from the jellyfish *Aequorea victoria*. Its excitation peak is 514 nm and its emission peak is 527 nm. Like the parent GFP, YFP is a useful tool in cell and molecular biology due to its properties useful for fluorescence microscopy. Three improved versions of YFP are Citrine, Venus, and Ypet. They have reduced chloride sensitivity, faster maturation, and increased brightness (defined as the product of the extinction coefficient and quantum yield). Typically, YFP serves as the acceptor for genetically-

encoded FRET sensors of which the most likely donor FP is monomeric cyan fluorescent protein (mCFP). The red-shift relative to GFP is caused by a Pi-Pi stacking interaction as a result of the T203Y substitution introduced by mutation, which essentially increases the polarizability of the local chromophore environment as well as providing additional electron density into the chromophore. "Venus" contains a novel amino acid substitution – F46L– which accelerates the oxidation of the chromophore at 37°C, the rate limiting step of maturation. The protein has other substitutions (F64L/ M153T/ V163A/ S175G), permitting Venus to fold well and giving it relative tolerance to acidosis and Cl<sup>-</sup>. Antibody reacting specifically with YFP may be useful in various immunotechniques, to identify the expression of a YFP fusion protein *in situ* and by immunoblotting, in bacteria, bacterial lysates or cells and tissues transfected with a YFP fusion protein expressing vectors. It may also be used to correlate levels of YFP protein expression with fluorescence intensity and for immunoprecipitation of YFP fusion proteins.

#### Source of Antigen and Antibodies

<b>Antigen</b>	Recombinant YFP protein
<b>Antibody host/type</b>	Rabbit, polyclonal IgG (Cat # YFP11-A) supplied in PBS, pH 7.2 and 0.2% BSA, and 0.01% thimerosal
<b>2-ab</b>	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

#### #YFP11-C, YFC Western control

YFP was expressed and purified from *E. coli* (>98%, ~27 kda). YFP11-A-Anti-YFP-IgG For Western blot +ve control (**Cat # YFP11-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **YFP11-C** for good visibility with antibody Cat # **YFP11-M**. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **YFP11-C** solution prior to heating and loading on gels. This preparation is not biologically

active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly.

#### Form & Storage of Antibodies/Peptide Control

##### Affinity pure IgG

100ul  solution  lyophilized powder

Supplied in **Buffer:** PBS, **Reconstitute powder** in Water

##### Storage

**Short-term:** unopened, undiluted liquid vials at -20oC and powder at 4oC or -20oC..

**Long-term:** at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at –20oC or below.

**Shipping:** 4oC for solutions and room temp for powder

#### Recommended Usage

**Western Blotting** (1:200-1:1000) using Chemiluminescence technique. YFP Mol wt ~27 kda

**ELISA** (1:1000-1:5,000; using 50-100 ng of control peptide/well).

IP: 1:100-1:500

#### Specificity & Cross-reactivity

Antibody reacts with YFP but not CFP. Other fluorescent proteins not tested. Purified YFP protein (#YFP15-R) and western control (#YFP11-C) can be used as positive control

**General References:** Karpova, T (Curr Protoc Cytom . 2006;Chapter 12; Piston DW Trends Biochem Sci 2007; Nagai T (2002) nat. Biotech. 20, 87-90; Shaner NC (2004) Nat Biotechnol. ;22:1567–1572; McAnaney TB Biochemistry.44:5510–5524

\*This product is for In vitro research use only.

#### Related material available from ADI

##### Catalog# ProdDescription

800-420-GFP Green Fluorescent Protein (GFP-fusion protein) ELISA Kit.  
EGFP16-R Enhanced Green Fluorescent Proteins (EGFP) protein for ELISA EGFP16-R-100 Enhanced Green Fluorescent Proteins (EGFP) protein for ELISA

GFP11-A Anti-Green Fluorescent Proteins (GFP, *A. victoria*) protein, IgG  
GFP11-HRP Anti-Green Fluorescent Proteins (GFP, *A. victoria*) protein IgG-HRP  
GFP12-M Monoclonal Anti-Green Fluorescent Proteins (GFP, *A. victoria*) IgG  
GFP15-R Green Fluorescent Proteins (GFP) protein for ELISA or Standards  
GFP15-R-100 Green Fluorescent Proteins (GFP) protein for ELISA

RFP12-M Monoclonal Anti-Red Fluorescent Proteins/Tag (RFP-tag; *Discosoma sea anemomone*) IgG  
RFP15-R Recombinant (*E. coli*) Red Fluorescent Proteins (RFP/dsRed) protein for ELISA or Standards (>98%)

YFP11-A Anti-Yellow Fluorescent Proteins (YFP) protein IgG  
YFP11-C Recombinant (*E. coli*) Yellow Fluorescent Proteins (YFP) protein control for Western blot

YFP11-A-Anti-YFP-IgG 150714A

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