

**Anti-PEG-Biotin (methoxy group) Rabbit Monoclonal Antibody  
Product Data Sheet**

**Catalog # 2137-1**

**Clone ID:** PEG-B-47      **Lot #:** *please refer to vial*  
**Quantity:** 100 ug  
**Type:** Rabbit Monoclonal IgG, Protein A purified, Biotinylated  
**Applications:**  WB    ELISA    IHC  
**Concentration:** *Please refer to vial*

**Background:** Polyethylene glycol ( PEG ) is a family of long chain polymers attached to a glycerine backbone. It is a nonionic, nontoxic, biocompatible, strongly hydrophilic polymer, which has a large exclusion volume in aqueous solution (1). The covalent attachment of PEG is now commonly used to modify a variety of proteins and drugs (2,3). The modification of a biopharmaceutical with polyethylene glycol (PEG) increases its hydrodynamic radius, reduces immunogenicity and proteolytic cleavage. Other benefits include decelerated renal excretion, improved stability towards proteolysis and increased solubility of the biopharmaceutical in aqueous solutions (4). As examples, PEG-adenosine deaminase (Adagen®) is used for the treatment of severe combined immunodeficiency syndrome, PEG-asparaginase (Oncaspar®) is used for the treatment acute lymphoblastic leukemia, PEG-interferon  $\alpha$ 2a (Pegasys®) is used for the treatment Hepatitis C, Branched PEG-anti-VEGF aptamer (Pegaptanib, Macugen™) is used for the treatment Macular degeneration(age-related) (5). An Anti-PEG antibody can be used to monitor a drug's pharmacokinetics, including distribution, metabolism and excretion. In addition, it can be used for the quality control of pegylated molecules in ELISA, WB and flow cytometry.

**Background References:**

1. Guiotto, A. et al. (2004) Anchimeric assistance effect on regioselective hydrolysis of branched PEGs: a mechanistic investigation. *Bioorg. Med.Chem.* 12, 5031–5037
2. Wong, S.S. (1991) Reactive groups of proteins and their modifying agents. In *Chemistry of protein conjugation and cross-linking*, p. 13, CRC Press
3. Caliceti, P. et al.(1993) Active site protection of proteolytic enzymes by poly(ethylene glycol) surface modification. *J. Bioact. Comp. Polym.* 8,41–50
4. Frank Leenders, celares GmbH, Berlin, Germany.(2006) PEGylation technology and biopharmaceuticals. *Biopharmaceuticals.* 6,39-40
5. Francesco M.Veronese, Gianfranco Pasut. (2005) PEGylation, successful approach

**Accuracy:** By detecting the methoxy group of the PEG molecule itself, anti-PEG-47-Biotin is useful in measuring the pharmacokinetics of PEG-modified molecules in vivo. Data indicate that anti-PEG-47-Biotin detects various length Y-chain PEG molecules as well as single chain PEG molecules with equal affinity. Anti-PEG RabMAb does not cross react with non-specific targets in blood or serum.

**Affinity:** Anti-PEG-47-Biotin RabMAb has an affinity of 1.58nM and is able to detect antigen concentrations as low as 8 ng/mL.

**Specificity:** KLH-PEG with terminal methoxy group was used as an immunogen. This antibody recognizes the terminal methoxy group of the PEG molecule. Anti-PEG-47-Biotin is prepared by the biotinylation of the antibody via primary amines.

**Storage Conditions:** Store at -20 °C. Buffer: 50 mM Tris-Glycine (pH 7.4), 0.15 M NaCl, 40% Glycerol, 0.01% sodium azide and 0.05% BSA. Stable for 12 months from date of receipt.

**Recommended Dilutions:**

WB: 15.6 ng/mL (1:5000 – 20,000)  
ELISA: 0.5 ug/mL  
IHC: 1:100

*Please visit [www.epitomics.com](http://www.epitomics.com) for recommended protocols*

**Recommendation:** Coating plates for ELISA: 5 – 10 ug/mL

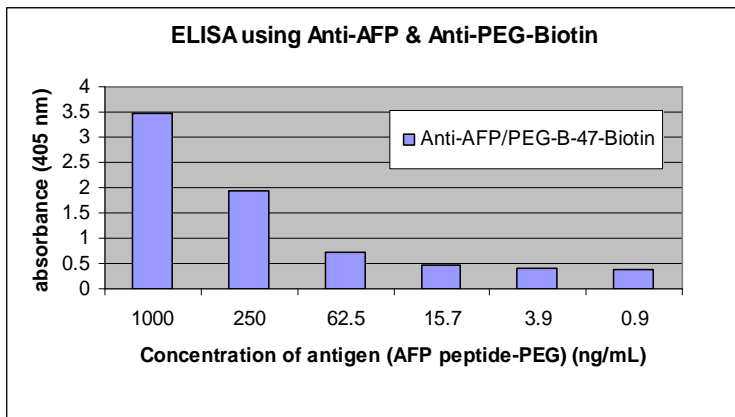
Product QC'd by: \_\_\_\_\_

**For research use only. Not for use in diagnostic or therapeutic applications.**

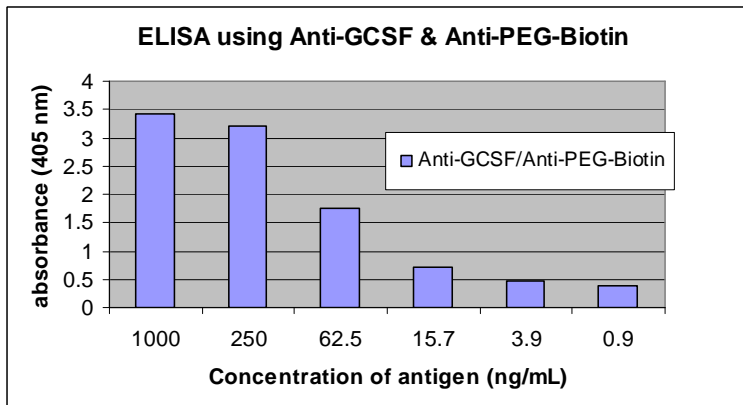
*This product was manufactured under U.S. Patent No. 5,675,063. For a complete list of protocols and available related products, please visit us at [www.epitomics.com](http://www.epitomics.com).*

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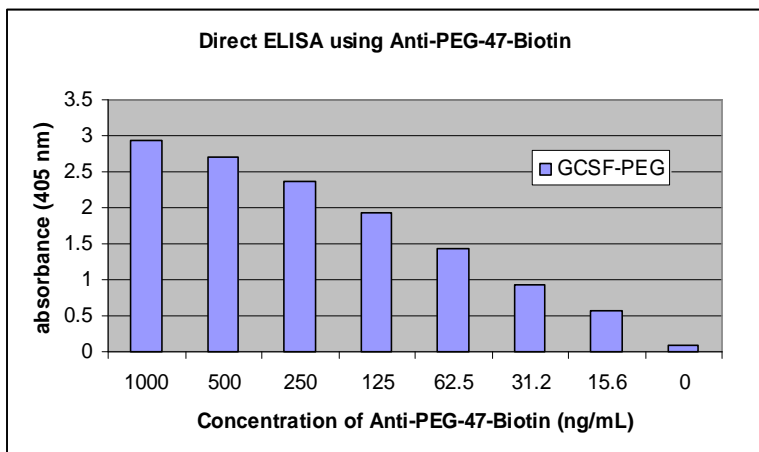
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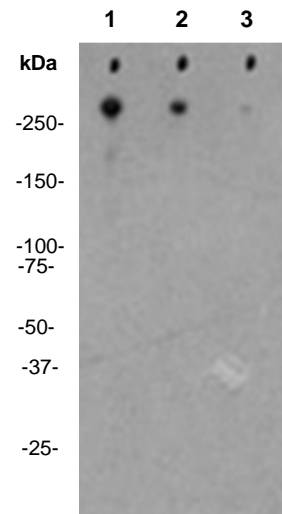
**Fig 1a.** ELISA assay using 5ug/mL Anti-AFP RabMAb (#1791-1) as the capture antibody and 0.5 ug/mL Anti-PEG-47-Biotin RabMAb (cat. # 2137-1) as the detection antibody. HRP-avidin (1:3000) used for anti-PEG-47 detection. This ELISA assay could detect YCA1017 peptide-PEG antigen at a concentration as low as 0.9 ng/mL



**Fig 1b.** Sandwich ELISA assay using 5ug/mL Anti-GCSF as the capture antibody and 0.5 ug/mL Anti-PEG-47-Biotin RabMAb (cat. # 2137-1) as the detection antibody. HRP-avidin (1:3000) used for anti-PEG-47 detection. This ELISA assay could detect GCSF-PEG antigen at a concentration as low as 0.9 ng/mL



**Fig 2.** Direct ELISA assay using 63 ng/mL of antigen (GCSF-PEG) to coat the plate. HRP-avidin (1:3000) was used for the detection of varying amounts of Anti-PEG-47-Biotin (cat. # 2137-1)



**Fig 3.** Immunoblot of different antigen-PEG preparations. Western Blot images using Anti-PEG 47-Biotin (cat. # 2137-1) to detect BSA-PEG. Lane 1: 31.25 ng/mL; lane 2: 15.6 ng/mL; lane 3: 7.8 ng/mL;

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