

Anti-IgG Affibody® Molecule ab31900

[2 References](#) [3 Images](#)

Overview

Product name	Anti-IgG Affibody® Molecule
Specificity	ab31900 recognises the Fc part of IgG from several species with similar binding preferences as Protein A in terms of subclass specificities. This molecule binds with high affinity to human IgG of IgG1, IgG2 and IgG4 subclasses which comprise 92-98% of total IgG in a normal individual.
Species reactivity	Reacts with: Mouse, Rabbit, Human, Rhesus monkey
Immunogen	Recombinant full length protein corresponding to IgG.
General notes	ab31900 is a recombinant protein produced in E. coli.

What are Affibody Molecules?

Affibody® affinity ligands are small, simple proteins composed of a three-helix bundle based on the scaffold of one of the IgG-binding domains of Protein A. Protein A is a surface protein from the bacterium Staphylococcus aureus. This scaffold has excellent features as an affinity ligand and can be designed to bind with high affinity to any given target protein. The domain consists of 58 amino acids, 13 of which are randomized to generate Affibody® libraries with a large number of ligand variants. Thus, the libraries consist of a multitude of protein ligands with an identical backbone and variable surface-binding properties. The current Affibody® libraries contains billions of variants. In function, Affibody® molecules mimic antibodies, nature's own binders to an infinite number of antigens. Compared to antibodies, the most striking dissimilarity of Affibody® molecules is the small size. Affibody® molecules have a molecular weight of 14 kDa, compared to the molecular weight of antibodies, which is 150 kDa. In spite of its small size, the binding site of Affibody® molecules is similar to that of an antibody. The advantages of Affibody® molecules over antibodies are · their small size · the simple structure of the molecules · its robust physical properties · its ability to fold correctly intracellularly · the fast and cost-efficient production in bacteria · the possibility to produce Affibody® molecules through chemical synthesis · the possibility to couple Affibody® molecules in multimeric constructs.

This Anti-IgG Affibody® Molecule is modified with a unique C-terminal cysteine for directed single-point chemical modification, facilitating labelling with fluorescent dyes, biotin or coupling to matrices. However, tail-to-tail dimers are spontaneously generated via a disulphide bridge between the C-terminal cysteines. Prior to coupling via the C-terminal the Affibody® Molecule needs to be reduced to expose the reactive cysteine residue. Recommended reducing condition is 20mM DTT at a pH above 7.5 and incubation at room temperature for 2 hours. Remove excess DTT by passage through a desalting column, not by dialysis.

THIS AFFIBODY® MOLECULE REQUIRES CONJUGATION TO A SUITABLE LABEL BEFORE

USE. PLEASE REFER TO THE "PROTOCOLS" LINK BELOW.

Properties

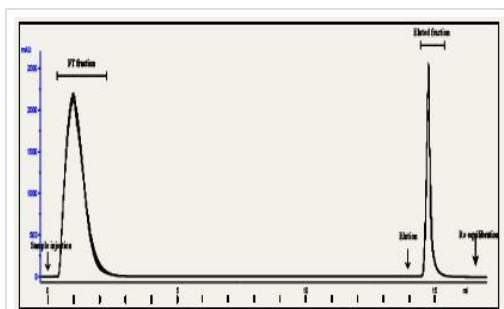
Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term.
Storage buffer	pH: 7.40 Constituents: 0.079% Ammonium bicarbonate, PBS
Purification notes	ab31900 is >98% pure, as determined by SDS-PAGE (Coomassie blue staining) and RP-HPLC analyses.
Affibody® molecule notes	<u>What are Affibody Molecules?</u> <i>Affibody® affinity ligands are small, simple proteins composed of a three-helix bundle based on the scaffold of one of the IgG-binding domains of Protein A. Protein A is a surface protein from the bacterium Staphylococcus aureus. This scaffold has excellent features as an affinity ligand and can be designed to bind with high affinity to any given target protein. The domain consists of 58 amino acids, 13 of which are randomized to generate Affibody® libraries with a large number of ligand variants. Thus, the libraries consist of a multitude of protein ligands with an identical backbone and variable surface-binding properties. The current Affibody® libraries contains billions of variants. In function, Affibody® molecules mimic antibodies, nature's own binders to an infinite number of antigens. Compared to antibodies, the most striking dissimilarity of Affibody® molecules is the small size. Affibody® molecules have a molecular weight of 14 kDa, compared to the molecular weight of antibodies, which is 150 kDa. In spite of its small size, the binding site of Affibody® molecules is similar to that of an antibody. The advantages of Affibody® molecules over antibodies are · their small size · the simple structure of the molecules · its robust physical properties · its ability to fold correctly intracellularly · the fast and cost-efficient production in bacteria · the possibility to produce Affibody® molecules through chemical synthesis · the possibility to couple Affibody® molecules in multimeric constructs</i>
Cellular localization	Secreted

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab31900 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

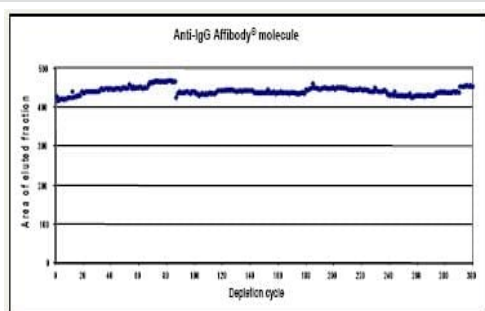
Application	Abreviews	Notes
AP		Use at an assay dependent concentration.

Images



Depletion - Anti-IgG Affibody® Molecule (ab31900)

Overlay chromatograms of repeated affinity removal of IgG from serum are shown. The chromatograms represent run number 1, 50 and 300 after consecutive injections of 700 ul of five times diluted human serum on 0.37 ml SulfoLink® Coupling Gel with immobilized Anti-IgG Affibody® molecule. The peak area of eluted fraction after each run is plotted in the image below. The identical chromatograms and consistent peak areas of eluted fractions prove that the depletion procedure can be reproducibly repeated at least 300 times without loss of binding capacity. SDS-PAGE analysis of flow-through fractions and eluted fractions shown in the third image demonstrate that the high specificity of the Anti-IgG Affibody® molecule is maintained through all the 300 consecutive injections. The capacity of this coupling gel allows for depletion of IgG from 1900 ul of five times diluted human serum per ml gel, corresponding to 380 ul of undiluted human serum per ml gel.



Depletion - Anti-IgG Affibody® Molecule (ab31900)

Peak area of the eluted fraction after each run of affinity removal. The consistent peak area prove that the depletion procedure can be reproducibly repeated at least 300 times without loss of binding capacity.



Anti-IgG Affibody® Molecule (ab31900)

SDS-PAGE analysis of flow-through fractions (FT) and eluted fractions after repeated affinity removal of IgG from human serum.

Lane 1: Untreated 5x diluted serum sample;

Lane 2: FT run 1;

Lane 3: FT run 75;

Lane 4: FT run 150;

Lane 5: FT run 225;

Lane 6: FT run 300;

Lane 7: eluate run 1;

Lane 8: eluate run 300;

Lane 9: IgG standard.

SDS-PAGE analysis of flow-through fractions (FT) and eluted fractions after repeated affinity removal of IgG from human serum.

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Lane 9: IgG standard.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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