**Anti-HSA Affibody® Molecule ab31897**

This product 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-HSA 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. ab50345 is a secondary antibody suitable for use in the process of detecting this Affibody® Molecule.

**THIS AFFIBODY® MOLECULE REQUIRES CONJUGATION TO A SUITABLE LABEL BEFORE**
<table>
<thead>
<tr>
<th><strong>製品の特性</strong></th>
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<tr>
<td><strong>製品の状態</strong></td>
<td>Liquid</td>
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<tr>
<td><strong>保存方法</strong></td>
<td>Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term.</td>
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<td><strong>バッファー</strong></td>
<td>pH: 7.40 Constituents: 0.079% Ammonium bicarbonate, PBS</td>
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<td><strong>特記事項（精製）</strong></td>
<td>ab31897 is &gt;98% pure, as determined by SDS-PAGE (Coomassie blue staining) and RP-HPLC analyses.</td>
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<td><strong>Affibody® molecule備考</strong></td>
<td>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</td>
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<td><strong>機能</strong></td>
<td>Serum albumin, the main protein of plasma, has a good binding capacity for water, Ca(2+), Na(+), K(+), fatty acids, hormones, bilirubin and drugs. Its main function is the regulation of the colloidal osmotic pressure of blood. Major zinc transporter in plasma, typically binds about 80% of all plasma zinc.</td>
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<td><strong>組織特異性</strong></td>
<td>Plasma.</td>
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<td><strong>関連疾患</strong></td>
<td>Defects in ALB are a cause of familial dysalbuminemic hyperthyroxinemia (FDH) [MIM:103600]. FDH is a form of euthyroid hyperthyroxinemia that is due to increased affinity of ALB for T(4). It is the most common cause of inherited euthyroid hyperthyroxinemia in Caucasian population.</td>
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<td><strong>配列類似性</strong></td>
<td>Belongs to the ALB/AFP/VDB family. Contains 3 albumin domains.</td>
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<td><strong>翻訳後修飾</strong></td>
<td>Kenitra variant is partially O-glycosylated at Thr-620. It has two new disulfide bonds Cys-600 to Cys-602 and Cys-601 to Cys-606. Glycated in diabetic patients. Phosphorylation sites are present in the extracellular medium. Acetylated on Lys-223 by acetylsalicylic acid.</td>
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<tr>
<td><strong>細胞内局在</strong></td>
<td>Secreted.</td>
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The Anti-HSA Affibody® molecule can be used as capture reagent in a sandwich ELISA in combination with a rabbit anti-HSA antibody as the detection reagent. Titration of HSA gives a sigmoid curve with a sensitivity of 5 ng HSA/ml (defined as two times background value) and a measurement interval between 10 and 100 ng/ml.

Sera from six different species, human, mouse, rat, goat, bovine and rabbit were titrated in 3-fold dilution series on Anti-HSA Affibody® molecule coated plates. As shown in figure 2, the Anti-HSA Affibody® molecule binds with high affinity to human albumin followed by rat and mouse albumin. Low binding was observed to bovine, goat and rabbit albumin. The species discrepancy is dependent on the binding properties of the Anti-HSA Affibody® molecule as well as the second step rabbit anti-HSA antibody.

The chromatograms represent run number 1, 50 and 300 after consecutive injections of 300 ul of five times diluted human serum on 0.37 ml SulfoLink® Coupling Gel with immobilized Anti-HSA Affibody® molecule.
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.

The high specificity of the Anti-HSA Affibody® molecule is maintained through all the 300 consecutive injections. The capacity of this coupling gel allows for depletion of HSA from 800 ul of five times diluted human serum per ml gel, corresponding to 160 ul of undiluted human serum per ml gel.

Lane 1: Untreated 5x diluted serum sample
Lane 2: FT (flow through) 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: HSA standard

The remaining HSA in samples from serum, depleted from HSA by passage through an Anti-HSA Affibody® molecule SulfoLink® Coupling Gel column (see “Protocols” link), was quantified using the Anti-HSA Affibody® ELISA. Samples from cycle 25, 150, 200 and 300 were analyzed and the concentrations of HSA in the samples recorded.

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

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