

Product Data Sheet

**Streptavidin-KLH Conjugate**

<input type="checkbox"/> <b>Cat#.</b> 20370-SK-1	Streptavidin-Keyhole Limpet Hemocyanin (SA-KLH/SVDN-KLH) conjugate	<b>Size:</b> 1 mg
<input type="checkbox"/> <b>Cat#.</b> 20370-SK-100	Streptavidin-Keyhole Limpet Hemocyanin (SA-KLH/SVDN-KLH) conjugate	<b>Size:</b> 100 mg

Streptavidin is a 53 Kda tetrameric protein purified from the bacterium *Streptomyces avidinii*. It finds wide uses in immunohistochemistry and molecular biology due to its extraordinarily strong affinity for the vitamin biotin; the dissociation constant (Kd) of the biotin-streptavidin complex is on the order of ~10-15 mol/L, ranking among one of the strongest known non-covalent interactions. There are considerable differences in the composition of avidin (found in egg white) and streptavidin, but they are remarkably similar in other respects. Both proteins form tetrameric complexes to function in which each subunit can bind one molecule of biotin. Streptavidin is much less soluble in water than avidin, and it lacks avidin's extensive glycosylation. Streptavidin has a mildly acidic isoelectric point (pI) of ~5. Because streptavidin lacks any carbohydrate modification and has a near-neutral pI, it has the advantage of much lower nonspecific binding than avidin. Deglycosylated avidin is more comparable to the size, pI and nonspecific binding of streptavidin.

Streptavidin's affinity for biotin is exploited in wide ranging biochemical assays, including western blot, ELISA, ELISPOT and pull-down assays. Streptavidin immobilized onto solid supports (ELISA plates, agarose, nitrocellulose etc) is also used as purification media to capture biotin-labelled protein or nucleic acid molecules. For example, cell surface proteins can be specifically labelled with membrane impermeable biotin reagent, then specifically captured using an avidin-based support.

**Keyhole Limpet Hemocyanin (KLH)** is being tested in a variety of cancer vaccines, including non-Hodgkins lymphoma, cutaneous melanoma, breast and bladder cancer. These vaccines contain specific tumor-associated antigens conjugated to KLH to stimulate anti-tumor immune responses which can destroy tumor cells. The rapidly growing interest in therapeutic vaccines (i.e. active immunotherapies) for cancer and the documented efficacy of KLH as a superior carrier protein for cancer vaccines are creating a significant biopharmaceutical market for KLH formulations.

Native KLH is isolated and purified from the giant megathura crenulata. It contains 0.25% copper. It is supplied in powder in PBS buffer, pH 7.4 (0.2 u filtered). It is opalescent blue liquid, may contain some particulates and fibers (>98% purity, ~370,000 kda, 1.8-2.5x10<sup>-3</sup> copper to protein ratio).

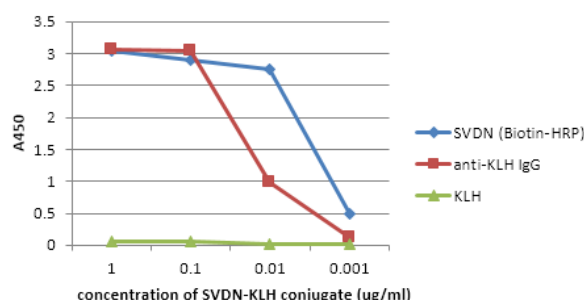
**Streptavidin-Keyhole limpet hemocyanin (SA-KLH)**

Highly purified Streptavidin and KLH were covalently coupled (1:1 weight: weight) using proprietary methods. The conjugate was dialyzed against PBS, pH 7.4 and filtered using 0.2u membrane. It is slightly yellowish in color. We recommend to use appropriate preservatives (0.1% azide or 0.05% merthiolate to prevent bacterial growth). The conjugate can be stored at 4°C for few days or stored frozen in suitable size aliquots. Avoid repeated freeze and thaw. Some aggregation is possible upon storage and it can be cleared by centrifugation.

**Biological Activity of SA-KLH**

Biological activity of the SA-KLH was tested using anti-KLH IgG, affinity pure, coated ELISA plates. The conjugate was reacted with the plate and after a washing step tested using Biotin-HRP conjugate. SA-KLH conjugate retained strong biotin activity similar to the unconjugated streptavidin.

**Biotin Binding Activity of SA-KLH**



**General References:** Harlow E and Lane D (1988) Antibodies: A lab, manual; Gatsogiannis C (2009) J. Mol. Biol. 385, 963-983; Harris JR (1999) Micron. 30, 597-623;

For research use only (RUO), not for diagnosis, cure or prevention of the disease.

**Related Items**

20365	Streptavidin-Peroxidase (HRP) conjugate
20366	Streptavidin-AP (Alk Phosphatase) conjugate
20367	Streptavidin-Fluorescein (FITC) conjugate
20368	Streptavidin-Rhodamine (TRITC) conjugate
20369	Streptavidin-Phycoerythrin (PE) conjugate

20364-BTN Horse Radish Peroxidase-Biotin Conjugate (Biotin-HRP)

SVDN55-5P Streptavidin coated ELISA plates (8 wells strip, 96 wells/plates) 5 plates/pk

20370-SK-1-Streptavidin-KLH-Conjugate

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