

Stellar BIOTECHNOLOGIES

Keyhole Limpet Hemocyanin



YOUR KLH SOURCE MATTERS

- Fully traceable from protein source to finished product
- Sustainable & environmentally sound non-lethal production from aquaculture-grown Megathura crenulata
- Reliable quality consistent, stable, potent
- Supply scalable to meet both research and long-term commercial needs

HMW & Subunit Forms

Keyhole limpet hemocyanin (KLH) is a large copper-containing, immunestimulating protein found in the hemolymph of *Megathura crenulata* (Giant Keyhole Limpet).

Highly Immunogenic

Glycoprotein Complex

Widely Used Carrier Molecule

KLH is widely used as an effective carrier protein for conjugate therapeutic vaccines and as an effective neoantigen for immune function testing.

Stellar Biotechnologies is the only KLH manufacturer with its own land-based aquaculture population of *Megathura* crenulata and using sustainable, environmentally sound processes.

Our proprietary methods ensure that Stellar KLH $^{\text{TM}}$ lots are consistently of the highest purity and potency.

THE POWER OF KLH

- I. Ideal carrier for therapeutic vaccine conjugation
- 2. Immunogen of choice for monitoring immune response (TDAR)

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Powering and Improving Immunotherapy™

lacksquare	STELLAR KLH™	KEYHOLE LIMPET

PRODUCT CODE

KLH-20MV KLH-01NV KLH-05N

HEMOCYANIN

Liquid formulations from sustainable, controlled, aquaculture source.

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Product	Subunit KLH	High Molecular Weight KLH	High Molecular Weight KLH
Grade	GMP Grade	GMP Grade	GMP Grade
Packaging	Type I glass vial	Type I glass vial	Call for details
Protein Content per Vial	15 mg	I mg	Call for details
Protein Concentration	18-22 mg/mL	0.8-1.2 mg/mL	4.5-5.5 mg/mL
Formulation	Liquid in water for injection	Liquid in DPBS	Liquid in DPBS
Purity by SEC	<u>></u> 90%	<u>></u> 95%	<u>></u> 95%
рН	6.9-7.9	6.8-7.8	6.8-7.6
Endotoxin Level	≤ 5.0 EU/mg		<7.0 EU/mg
Sterile	Yes	Yes	Yes

 $Pricing \& Ordering: \ KLHinfo@stellarbiotech.com$



Visit www.KLHsite.org Keyhole Limpet Hemocyanin knowledge base.

- Material has confirmed absence of enterovirus¹, Hepatitis A¹, Hepatitis B, and Hepatitis C, Norwalk-like virus¹, and Rotavirus¹.
- Bulk quantities and research grade material available. Please contact for details.
- Storage conditions: 2° 8°C (never frozen)
- Recommended retest: 24 months when stored at 2° 8°C
- For manufacturing or processing in the preparation of a new drug limited by Federal law to investigational use.

TO ORDER KLH

Phone +1 (805) 488-2800 U.S. Toll Free (855) KLH-7555



1 = HMW KLH only

Harris JR and Markl J. Keyhole limpet hemocyanin: molecular structure of a potent marine immunoactivator. A review. Eur Urol, 37(suppl3):24-33; 2000. Lebrec, H. et al. T-cell-dependent antibody responses in the rat: Forms and sources of keyhole limpet hemocyanin matter. Journal of Immunotoxicology; 2014 Jul-Sep;11(3):213-21.

Markl J, et al. Marine tumor vaccine carriers: structure of the molluscan hemocyanins KLH and HtH. J Cancer Res Clin Oncol, 127(suppl2):R3-R9; 2001. Oakes FR, et al. The effect of captivity and diet on KLH isoform ratios in Megathura crenulata. Comp Biochem Physiol 138A:169-173; 2004.

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