

PRODUCT INFORMATION



KLH Monoclonal Antibody (Clone 15F7E4G3)

Item No. 38099

Overview and Properties

Contents:	This vial contains 50, 100, or 200 µl of protein A-affinity purified monoclonal antibody.
Synonym:	Keyhole Limpet Hemocyanin
Immunogen:	Recombinant KLH
Cross Reactivity:	(+) KLH
Form:	Liquid
Storage:	-80°C (as supplied)
Stability:	≥1 year
Storage Buffer:	0.2 µm filtered solution in PBS
Clone:	15F7E4G3
Host:	Mouse
Isotype:	IgG
Applications:	ELISA and Western blot (WB); the recommended starting concentration is 1:1,000-1:2,000 for ELISA and 1:500-1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Description

Keyhole limpet hemocyanin (KLH) is a copper-containing respiratory glycoprotein from the hemolymph of the marine mollusk *M. crenulata* that is involved in oxygen uptake, transport, and release.¹⁻³ It exists as two isoforms, KLH1 and KLH2, and is composed of eight globular functional units that each contain an oxygen binding site and arrange into decamers, didecamers, or multidecamers to form a cylindrical pore.^{1,4} Due to its immunogenicity, KLH has commonly been used as a T cell-dependent model antigen.^{2,5} Immunization of mice with a peptide derived from *A. baumannii* outer membrane protein A (OmpA) conjugated to KLH produces a monoclonal antibody that increases macrophage opsonization of antibiotic-resistant *A. baumannii* *in vitro*.⁶ Serum isolated from mice vaccinated with KLH conjugated to 2,4-dinitrophenyl (DNP) and an analog of the tumor-associated carbohydrate antigen ganglioside G_{M3} exhibits increased IgG antibody titers and induces antibody-dependent cell cytotoxicity (ADCC) in B16/F10 mouse skin melanoma cells expressing a DNP-ganglioside G_{M3} analog conjugate.⁷ Cayman's KLH Monoclonal Antibody (Clone 15F7E4G3) can be used for ELISA and Western blot (WB) applications.

References

1. Swerdlow, R.D., Ebert, R.F., Lee, P., *et al.* Keyhole limpet hemocyanin: Structural and functional characterization of two different subunits and multimers. *Comp. Biochem. Physiol. B Biochem. Mol. Biol.* **113(3)**, 537-548 (1996).
2. Harris, J.R. and Markl, J. Keyhole limpet hemocyanin (KLH): A biomedical review. *Micron* **30(6)**, 597-623 (1999).
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4. Gastogiannis, C. and Markl, J. Keyhole limpet hemocyanin: 9-A CryoEM structure and molecular model of the KLH1 didecamer reveal the interfaces and intricate topology of the 160 functional units. *J. Mol. Biol.* **385(3)**, 963-983 (2009).
5. Swaminathan, A., Lucas, R.M., Dear, K., *et al.* Keyhole limpet haemocyanin - a model antigen for human immunotoxicological studies. *Br. J. Clin. Pharmacol.* **78(5)**, 1135-1142 (2014).
6. Yeganeh, O., Shabani, M., Pakzad, P., *et al.* Evaluation the reactivity of a peptide-based monoclonal antibody derived from OmpA with drug resistant pulsotypes of *Acinetobacter baumannii* as a potential therapeutic approach. *Ann. Clin. Microbiol. Antimicrob.* **21(1)**, 30 (2022).
7. Lin, H., Hong, H., Feng, L., *et al.* Synthesis of DNP-modified G_{M3}-based anticancer vaccine and evaluation of its immunological activities for cancer immunotherapy. *Chin. Chem. Lett.* **32(12)**, 4041-4044 (2021).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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