



Recombinant Heteroscodra maculata Delta-theraphotoxin-Hm1a

Product Code	CSB-YP351577HGU
Relevance	Gating modifier toxin that principally inhibits inactivation of the mammalian voltage-gated sodium channel Nav1.1/SCN1A. When tested against human Nav1.1/SCN1A-Nav1.8/SCN10A alpha subunits heterologously expressed in <i>Xenopus</i> oocytes, the toxin inhibits inactivation of Nav1.1 (EC(50)=38 nM), with substantially weaker effects on Nav1.2/SCN2A (EC(50)=236 nM) and Nav1.3/SCN3A (EC(50)=220 nM). The toxin inhibits several subtypes of voltage-gated potassium channels with significantly lower potency than its effects on Nav1.1/SCN1A. It is a moderately potent blocker of Kv2.1/KCNB1, Kv2.2/KCNB2, Kv4.1/KCND1, Kv4.2/KCND2 and Kv4.3/KCND3 and has little effect on Kv1.1/KCNA1, Kv1.2/KCNA2, Kv1.3/KCNA3, Kv1.4/KCNA4, Kv1.5/KCNA5, Kv1.6/KCNA6 and Kv3.4/KCNC4. The binding affinity and subtype selectivity of the toxin is determined by residues within both the S1-S2 and S3-S4 loops of the domain IV voltage sensor. Intracerebroventricular injection into mice elicits convulsions, spasms, tremors and rapid death. When injected into mouse hindpaw, the toxin elicits an immediate and robust response to pain. Intraplantar injection of toxin does not cause neurogenic inflammation or alter sensitivity to heat, indicative of a modality-specific effect on mechanosensitive neurons
Abbreviation	Recombinant Heteroscodra maculata Delta-theraphotoxin-Hm1a protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P60992
Alias	Heteroscodratoxin-1
Product Type	Recombinant Protein
Immunogen Species	Heteroscodra maculata (Togo starburst tarantula) (Togo starburst baboon spider)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	ECRYLFGGCSSTSDCCKHLSCRSDWKYCAWDGTFS
Research Area	others
Source	Yeast
Protein Names	Recommended name: Kappa-theraphotoxin-Hm1a Short name= Kappa-TRTX-Hm1a Alternative name(s): Heteroscodratoxin-1 HmTx1
Expression Region	1-35aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at



4°C for up to one week.

Tag Info

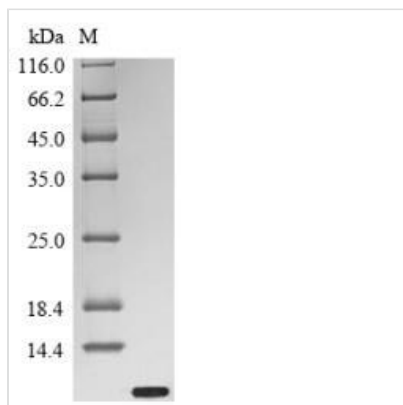
Tag-Free

Mol. Weight

4.0kDa

Protein Length

Full Length

Image


(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL. We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.