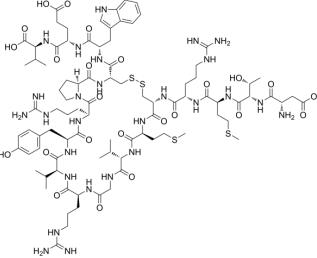


## Melanin Concentrating Hormone, salmon

Cat. No.:	HY-P1525
CAS No.:	87218-84-6
Molecular Formula:	C <sub>89</sub> H <sub>139</sub> N <sub>27</sub> O <sub>24</sub> S <sub>4</sub>
Molecular Weight:	2099.48
Sequence:	Asp-Thr-Met-Arg-Cys-Met-Val-Gly-Arg-Val-Tyr-Arg-Pro-Cys-Trp-Glu-Val (Disulfide bridge e: Cys5-Cys14)
Sequence Shortening:	DTMRCMVGRVYRPCWEV (Disulfide bridge: Cys5-Cys14)
Target:	MCHR1 (GPR24)
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Sealed storage, away from moisture Powder      -80°C      2 years -20°C      1 year



\* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

## SOLVENT & SOLUBILITY

### In Vitro

DMSO : 100 mg/mL (47.63 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration	Solvent	Mass		
			1 mg	5 mg	10 mg
	1 mM		0.4763 mL	2.3815 mL	4.7631 mL
	5 mM		0.0953 mL	0.4763 mL	0.9526 mL
	10 mM		0.0476 mL	0.2382 mL	0.4763 mL

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

Description	Melanin Concentrating Hormone, salmon is a 19-amino-acid neuropeptide initially identified in the pituitary gland of teleost fish, which regulates food intake, energy balance, sleep state, and the cardiovascular system. Melanin-concentrating hormone is a ligand for an orphan G protein-coupled receptor (SLC-1/GPR24) and MCHR2.
IC <sub>50</sub> & Target	SLC-1/GPR24, MCHR2 <sup>[1]</sup>
In Vitro	An orphan G protein-coupled receptor (SLC-1/GPR24) has been identified as a receptor for MCH (MCHR1). MCHR2 has higher protein sequence homology to MCHR1 than any other G protein-coupled receptor. MCHR2 is specifically activated by nanomolar concentrations of MCH, binds to MCH with high affinity, and signals through Gq protein <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

Melanin Concentrating Hormone stimulates appetite. Continuous infusion of Melanin Concentrating Hormone into the ventricular system increases food intake for 7-8 days<sup>[2]</sup>. Intracerebroventricular infusion of Melanin Concentrating Hormone (10 µg/day) causes a slight but significant increase in body weight in mice maintained on the regular diet. Chronic stimulation of the brain Melanin Concentrating Hormone system could cause obesity in mice<sup>[3]</sup>.

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**PROTOCOL****Kinase Assay** <sup>[1]</sup>

Binding of <sup>125</sup>I-labeled Melanin Concentrating Hormone (MCH) to MCHR1 and MCHR2 is measured by filtration binding assay. Membranes (10 µg protein) from transiently transfected HEK293-MCHR1 and HEK293-MCHR2 cells are mixed with 0-9.8 nM <sup>125</sup>I-labeled MCH in the binding buffer (50 mM Hepes/10 mM MgCl<sub>2</sub>/2 mM EGTA; protease inhibitors, 0.1% BSA, pH 7.6). After incubation for 1 h at room temperature, membrane-bound <sup>125</sup>I-labeled MCH is separated from the free <sup>125</sup>I-labeled MCH by filtration through a 96-well GF/B plate on a Packard Filtermate Cell Harvester and washed with ice-cold binding buffer supplemented with 80 mM NaCl. Eighty microliters of scintillation liquid is added, and the radioactivity is counted on a Packard Microplate Topcount<sup>[1]</sup>.

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**Animal Administration** <sup>[2][3]</sup>**Rats** <sup>[2]</sup>

Both male Wistar and male Sprague-Dawley rats weighing between 310 and 370 g (age 8-11 weeks) are used in the study. All animals receive food which had the following dry weight composition: 64% carbohydrate, 22% protein, 4.3% fat, 4% cellulose and 5.5% ash. For chronic experiments, the rats are infused either with artificial CSF (0.5 µL/h) or MCH (8 µg/rat/day). Body weight and food intake are then recorded daily for 12 days<sup>[2]</sup>.

**Mice** <sup>[3]</sup>

Male C57BL/6J mice is prepared for measurement of spontaneous motor activity. Melanin Concentrating Hormone (10 µg/day) or the vehicle is infused for 14 days under the regular diet-fed condition. Motor activity is measured during the last 3 days of the 14-day infusion by an activity monitoring system in home cages<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**REFERENCES**

[1]. An S, et al. Identification and characterization of a melanin-concentrating hormone receptor. Proc Natl Acad Sci U S A. 2001 Jun 19;98(13):7576-81.

[2]. Della-Zuana O, et al. Acute and chronic administration of melanin-concentrating hormone enhances food intake and body weight in Wistar and Sprague-Dawley rats. Int J Obes Relat Metab Disord. 2002 Oct;26(10):1289-95.

[3]. Gomori A, et al. Chronic intracerebroventricular infusion of MCH causes obesity in mice. Melanin-concentrating hormone. Am J Physiol Endocrinol Metab. 2003 Mar;284(3):E583-8. Epub 2002 Nov 26.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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