# Melanotan I

**Cat. No.:** HY-N2466

**CAS No.:** 75921-69-6

**Molecular Formula:** $C_{78}H_{111}N_{21}O_{19}$

**Molecular Weight:** 1646.85

**Sequence:** Ac-Ser-Tyr-Ser-{Nle}-Glu-His-{d-Phe}-Arg-Trp-Gly-Lys-Pro-Val-NH2

**Sequence Shortening:** Ac-SYS-{Nle}-EH-{d-Phe}-RWGKPV-NH2

**Target:** Melanocortin Receptor

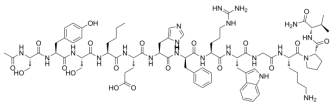
**Pathway:** GPCR/G Protein; Neuronal Signaling

**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**

$H_2O$ : ≥ 50 mg/mL (30.36 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 0.6072 mL | 3.0361 mL | 6.0722 mL |
| 5 mM | 0.1214 mL | 0.6072 mL | 1.2144 mL |
| 10 mM | 0.0607 mL | 0.3036 mL | 0.6072 mL |

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

**In Vivo**

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (60.72 mM); Clear solution; Need ultrasonic

## BIOLOGICAL ACTIVITY

**Description**

Melanotan I is a potent non-selective melanocortin receptor (MCR) agonist. Melanotan I is a synthetic analogue of α-melanocyte stimulating hormone (α-MSH) that stimulates melanogenesis. Melanotan I can induce skin tanning by mimicking the actions of a-MSH on the melanocortin type 1 receptors (MC1R) of melanocytes. Melanotan I can be used for the research of sun-induced skin cancer, melanoma, inflammation and male erectile dysfunction[1][2][3][4].

**$IC_{50}$ & Target**

MC1R

**In Vitro**

Melanotan I (1 μM, 72 h) does not alter or slightly inhibit the formation of tumor colonies, and inhibits melanoma cell

proliferation in vitro[3].

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

**In Vivo**

Melanotan I (2 mg/kg/dayfor 12 weeks, s.c.) has no acute toxic effect in rodents[2].

Melanotan I (2/10 mg/kg, s.c.) does not increase tumor incidence of human melanoma in SCID (immunodeficient) mice, nor does it lead to malignant transformation of tumors, and does not exhibit cancer-promoting effects. [3].

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

| | |
|---|---|
| Animal Model: | rats[2] |
| Dosage: | 0.6 mg/kg/day for 30 days |
| Administration: | s.c. |
| Result: | Well tolerated with no change in lethality, no effect on weight gain, no serum chemistry changes, except for a slight increase (30 %) in lactic dehydrogenase levels. |

## CUSTOMER VALIDATION

- Theranostics. 2020 Aug 13;10(24):11110-11126.

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## REFERENCES


[1]. Mahiques-Santos L. Melanotan [Melanotan]. Actas Dermosifiliogr. 2012 May;103(4):257-9. Spanish.

[2]. Hadley ME, et al. Melanocortin peptide therapeutics: historical milestones, clinical studies and commercialization. Peptides. 2006 Apr;27(4):921-30.

[3]. Hadley ME, et al. Discovery and development of novel melanogenic drugs. Melanotan-I and -II. Pharm Biotechnol. 1998;11:575-95.

[4]. Langan EA, et al. Melanotropic peptides: more than just 'Barbie drugs' and 'sun-tan jabs'? Br J Dermatol. 2010 Sep;163(3):451-5.





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