

# Ramelteon

**Catalog No: tcsc0382**



## Available Sizes

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**Size:** 5mg

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg

**Size:** 500mg



## Specifications

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**CAS No:**

196597-26-9

**Formula:**

$C_{16}H_{21}NO_2$

**Pathway:**

GPCR/G Protein;Neuronal Signaling

**Target:**

Melatonin Receptor;Melatonin Receptor

**Purity / Grade:**

>98%

**Solubility:**

DMSO :  $\geq 50$  mg/mL (192.80 mM)

**Alternative Names:**

TAK-375

**Observed Molecular Weight:**

259.34

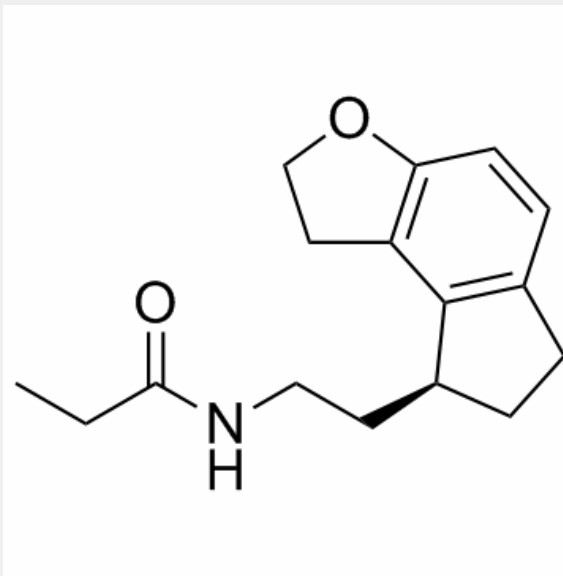
**Product Description**

Ramelteon is a highly potent and selective **melatonin** receptor agonist with  $K_i$  values of 14 and 112 pM for human melatonin1 and melatonin2.

IC50 & Target: IC50: 14 pM (melatonin1), 112 pM (melatonin2)<sup>[1]</sup>

**In Vitro:** Ramelteon shows very high affinity for human melatonin1 and melatonin2 receptors (expressed in CHO cells), and chick forebrain melatonin receptors (consisting of melatonin1 and melatonin2 receptors) with  $K_i$  values of 14.0, 112, and 23.1 pM, respectively. The affinity of ramelteon for hamster brain melatonin3 binding sites is extremely weak ( $K_i$ : 2.65  $\mu$ M) compared to melatonin's affinity for the melatonin3 binding site  $K_i$ : 24.1 nM). In addition, ramelteon shows no measurable affinity for a large number of ligand binding sites (including benzodiazepine receptors, dopamine receptors, opiate receptors, ion channels, and transporters) and no effect on the activity of various enzymes. Ramelteon inhibits forskolin-stimulated cAMP production in the CHO cells that express the human melatonin1 and melatonin2 receptors<sup>[1]</sup>.

**In Vivo:** Ramelteon significantly decreases wakefulness at doses of 0.001, 0.01, and 0.1 mg/kg, increases slow-wave sleep at doses of 0.001, 0.01, and 0.1 mg/kg, and increases rapid eye movement sleep at a dose of 0.1 mg/kg in freely moving cats<sup>[2]</sup>. Ramelteon is associated with reduced subjective sleep latency and improved sleep quality. Ramelteon is associated with improvement in latency to persistent sleep, sleep efficiency, and total sleep time<sup>[3]</sup>. Ramelteon (10 mg/kg, i/p), administered close to the mid-point of the dark phase of the L:D cycle, significantly reduces NREM sleep latency (time from injection to the appearance of NREM sleep). Ramelteon also produces a short-lasting increase in NREM sleep duration, but the NREM power spectrum is unaltered<sup>[4]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!