Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Ramelteon

Catalog No: tcsc0382

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg

Size: 500mg

Specifications

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 : ≥ 50 mg/mL (192.80 mM)

Alternative Names:
TAK-375

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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)[1]

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 μM) 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[1].

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[2]. 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[3]. 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[4].