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

Mirabegron

Catalog No: tcsc0915

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Specifications

CAS No:
223673-61-8

Formula:
$C_{21}H_{24}N_4O_2S$

Pathway:
GPCR/G Protein

Target:
Adrenergic Receptor

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
YM178

Observed Molecular Weight:
396.51

Product Description

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Mirabegron is a selective **β_3-adrenoceptor** agonist with **EC_{50}** of 22.4 nM.

IC50 & Target: EC50: 22.4 nM (β_3-adrenoceptor)[1]

In Vitro: Mirabegron (YM178) increases cyclic AMP accumulation in Chinese hamster ovary (CHO) cells expressing human β_3-adrenoceptor (AR). EC_{50} value is 22.4 nM. EC_{50} values of Mirabegron for human β_1- and β_2-ARs are 10,000 nM or more, respectively. EC_{50} of Mirabegron in rat bladder strips precontracted with 10^{-6} M Carbachol (CCh) is 5.1 μM, whereas that in human bladder strips precontracted with 10^{-7} M CCh is 0.78 μM. Mirabegron concentration-dependently increases the accumulation of cAMP in CHO cells expressing human β_3-ARs, with an EC_{50} value and I.A. of 22.4 nM and 0.8, respectively. Mirabegron has little agonistic effect on β_1- and β_2-ARs. Compared by EC_{50} value, Mirabegron is approximately one third as potent as isoproterenol. The maximal relaxant effects of Mirabegron are 94±1%, that of CCh, indicating that Mirabegron acts a full agonist in the rat bladder. The maximal relaxant effects of Mirabegron is 89.4±2.3%[1].

In Vivo: Mirabegron (YM178) produces a dose-dependent decrease in the frequency of rhythmic bladder contraction in anesthetized rats. In contrast, Mirabegron does not decrease the amplitude of rhythmic bladder contraction at up to 3 mg/kg i.v.. On the contrary, Oxybutynin significantly increases the frequency of rhythmic bladder contraction and decreased its amplitude at doses of 0.272 mg/kg i.v. or more[1].