

# 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

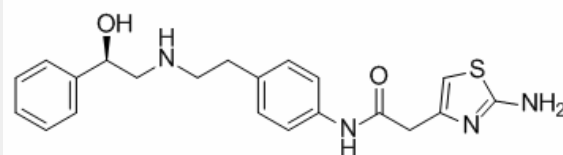
## Product Description

Mirabegron is a selective  **$\beta_3$ -adrenoceptor** agonist with **EC<sub>50</sub>** of 22.4 nM.

IC<sub>50</sub> & Target: EC<sub>50</sub>: 22.4 nM ( $\beta_3$ -adrenoceptor)<sup>[1]</sup>

***In Vitro:*** Mirabegron (YM178) increases cyclic AMP accumulation in Chinese hamster ovary (CHO) cells expressing human  $\beta_3$ -adrenoceptor (AR). EC<sub>50</sub> value is 22.4 nM. EC<sub>50</sub> values of Mirabegron for human  $\beta_1$ - and  $\beta_2$ -ARs are 10,000 nM or more, respectively. EC<sub>50</sub> of Mirabegron in rat bladder strips precontracted with 10<sup>-6</sup> M Carbachol (CCh) is 5.1  $\mu$ M, whereas that in human bladder strips precontracted with 10<sup>-7</sup> M CCh is 0.78  $\mu$ M. Mirabegron concentration-dependently increases the accumulation of cAMP in CHO cells expressing human  $\beta_3$ -ARs, with an EC<sub>50</sub> value and I.A. of 22.4 nM and 0.8, respectively. Mirabegron has little agonistic effect on  $\beta_1$ - and  $\beta_2$ -ARs. Compared by EC<sub>50</sub> value, Mirabegron is approximately one third as potent as isoproterenol. The maximal relaxant effects of Mirabegron are 94 $\pm$ 1%, that of CCh, indicating that Mirabegron acts a full agonist in the rat bladder. The maximal relaxant effects of Mirabegron is 89.4 $\pm$ 2.3%<sup>[1]</sup>.

***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<sup>[1]</sup>.



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