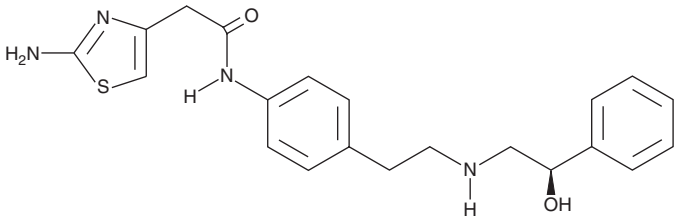
PRODUCT INFORMATION

Mirabegron

Item No. 17319

CAS Registry No.:	223673-61-8
Formal Name:	2-amino-N-[4-[2-[[(2R)-2-hydroxy-2-phenylethyl]amino]ethyl] phenyl]-4-thiazoleacetamide
Synonym:	YM-178
MF:	$C_{21}H_{24}N_4O_2S$
FW:	396.5
Purity:	≥98%
UV/Vis.:	λ_{max}: 250 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Mirabegron is supplied as a crystalline solid. A stock solution may be made by dissolving the mirabegron in the solvent of choice, which should be purged with an inert gas. Mirabegron is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of mirabegron in ethanol is approximately 3 mg/ml and approximately 5 mg/ml in DMSO and DMF.

Mirabegron is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, mirabegron should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Mirabegron has a solubility of approximately 0.1 mg/ml in a 1:6 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Mirabegron is an agonist of the β_3-adrenergic receptor (β_3-AR).[1] It induces cAMP accumulation in CHO cells expressing the β_3-AR but not the β_1- or β_2-AR (EC_{50}s = 0.0224, >10, and >10 µM, respectively). Mirabegron reduces contraction induced by carbamoylcholine (Item No. 14486) of isolated rat and human bladder strips (EC_{50}s = 5.1 and 0.78 µM, respectively). It decreases the frequency of isovolumetric rhythmic bladder contractions in anesthetized rats when administered at a dose 3 mg/kg. Formulations containing mirabegron have been used in the treatment of overactive bladder.

Reference

1. Takasu, T., Ukai, M., Sato, S., *et al.* Effect of (R)-2-(2-aminothiazol-4-yl)-4'-{2-[(2-hydroxy-2-phenylethyl) amino]ethyl} acetanilide (YM178), a novel selective β_3-adrenoceptor agonist, on bladder function. *J. Pharmacol. Exp. Ther.* **321(2)**, 642-647 (2007).

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