

Vilanterol

Catalog No: tcsc1680



Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg



Specifications

CAS No:

503068-34-6

Formula:

$C_{24}H_{33}Cl_2NO_5$

Pathway:

GPCR/G Protein

Target:

Adrenergic Receptor

Purity / Grade:

>98%

Solubility:

10 mM in DMSO

Alternative Names:

GW642444X;GW642444

Observed Molecular Weight:

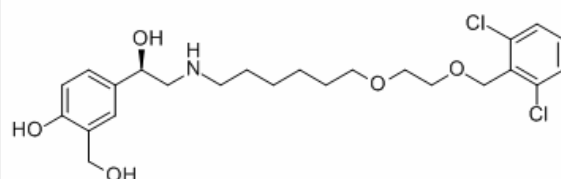
486.43

Product Description

Vilanterol is a long-acting **β_2 -adrenoceptor** (β_2 -AR) agonist with 24 h activity. The **pEC₅₀**s for β_2 -AR, β_1 -AR and β_3 -AR is 10.37 ± 0.05 , 6.98 ± 0.03 and 7.36 ± 0.03 , respectively.

IC₅₀ & Target: pEC₅₀: 10.37 ± 0.05 (β_2 -adrenoceptor), 6.98 ± 0.03 (β_1 -adrenoceptor), 7.36 ± 0.03 (β_3 -adrenoceptor)^[1]

In Vitro: The selectivity of Vilanterol for β_2 -AR over the other β -AR receptor subtypes (β_2 and β_3) is established by testing the ability of Vilanterol to elicit concentration-dependent increases in cAMP in CHO cells expressing human β_1 -, β_2 -, and β_3 -AR. Vilanterol is demonstrated to be highly selective for the β_2 -AR with at least a 1000-fold selectivity over both β_2 - and β_3 -AR subtypes. This analysis results in a low-affinity pK_D for [³H]Vilanterol of 9.44 ± 0.07 (n=4) in the presence Gpp(NH)p and a high-affinity pK_D of 10.82 ± 0.12 (n=4) and a low-affinity pK_D 9.47 ± 0.17 (n=4) in the absence of Gpp(NH)p. In addition, a low-affinity pK_D for [³H]Vilanterol of 9.52 ± 0.24 (n=4) in the absence of Gpp(NH)p (37°C) is observed^[1]. Vilanterol trifenate is a novel inhaled long-acting β_2 -agonist with inherent 24 h activity in vitro in development as a combination with the inhaled corticosteroid fluticasone furoate for both COPD and asthma^[2]. Vilanterol is a novel long-acting β_2 -agonist (LABA) with inherent 24-hour activity for once-daily clinical treatment of chronic obstructive pulmonary disease (COPD) and asthma in combination with the inhaled novel corticosteroid fluticasone furoate, also active for 24 hours^[3].



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