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

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

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Product Description

Vilanterol is a long-acting **β_2-adrenoceptor** (β_2-AR) agonist with 24 h activity. The **pEC_{50}**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 [^{3}H]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 [^{3}H]Vilanterol of 9.52±0.24 (n=4) in the absence of Gpp(NH)p (37°C) is observed[1]. Vilanterol trifenatate 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].