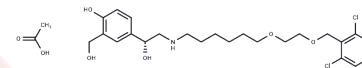


## Vilanterol acetate

### Chemical Properties

CAS No. : 503068-35-7  
 Formula: C<sub>26</sub>H<sub>37</sub>Cl<sub>2</sub>N<sub>2</sub>O<sub>7</sub>  
 Molecular Weight: 546.48  
 Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year  
 Actual storage temperature shall be subject to the COA.



### Biological Description

Description	Vilanterol (GW642444) acetate is a long-acting $\beta$ 2-AR agonist. The pEC <sub>50</sub> values for vilanterol acetate are 9.4 for $\beta$ 2-AR, 6.4 for $\beta$ 1-AR, and 6.1 for $\beta$ 3-AR, indicating its selectivity in activating airway $\beta$ 2-AR receptors. This activation elevates cAMP levels, resulting in the relaxation of bronchial smooth muscle. Vilanterol acetate can be used in asthma-related research.
Targets(IC <sub>50</sub> )	Adrenergic Receptor
In vitro	Vilanterol acetate (Compound 13f) is a potent and highly active $\beta$ 2 receptor agonist, demonstrating high selectivity (pEC <sub>50</sub> difference: $\beta$ 2/ $\beta$ 1 = 3.0) in CHO cells transfected with human $\beta$ 1, $\beta$ 2, and $\beta$ 3 receptors, with a pEC <sub>50</sub> of 9.4 and an intrinsic activity (IA) of 0.69. In human liver microsome assays, it undergoes rapid metabolic inactivation in systemic circulation when used at 5 $\mu$ M for 30 minutes. The compound exhibits moderate membrane permeability ( $P_{app}$ = 34 nm/s) in MDCKII-MDR1 cells, which may result in reduced systemic absorption. Furthermore, Vilanterol acetate has a selectivity for $\beta$ 2-AR over $\beta$ 3-AR subtypes that is at least 1000-fold greater.
In vivo	Vilanterol acetate (Compound 13f) exhibited a sustained bronchodilatory effect when inhaled by nebulization at doses of 30 $\mu$ M and 300 $\mu$ M. After a single nebulization administration, this compound effectively prolonged the duration of action and significantly alleviated the asthma symptoms in guinea pigs with histamine-induced bronchospasm. The higher the dose, the more pronounced the effect.

### Preparing Stock Solutions

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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	1.8299 mL	9.1495 mL	18.2989 mL
5 mM	0.366 mL	1.8299 mL	3.6598 mL
10 mM	0.183 mL	0.9149 mL	1.8299 mL
50 mM	0.0366 mL	0.183 mL	0.366 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

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