

Certificate of Analysis

Product Name: Formoterol hemifumarate

Catalog No.: 1448

Batch No.: 2

CAS Number: 43229-80-7

IUPAC Name: (±)-(R,R)-N-[2-Hydroxy-5-[1-hydroxy-2-[[2-(4-methoxyphenyl)-1-methylethyl]amino]ethyl]phenyl] formamide hemifumarate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{19}H_{24}N_2O_4 \cdot \frac{1}{2}C_4H_4O_4 \cdot H_2O$

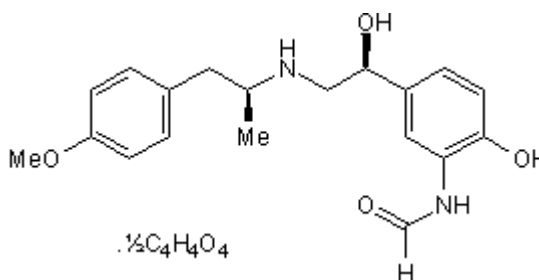
Batch Molecular Weight: 420.47

Physical Appearance: White solid

Solubility: DMSO to 50 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.7% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	59.99	6.71	6.66
Found	59.9	6.5	6.77

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Description:

Potent, selective and long-acting β_2 -adrenoceptor agonist. Displays 330-fold selectivity for β_2 over β_1 receptors (pK_d values are 8.12 and 5.58 respectively). Potently relaxes guinea pig trachea ($pD_2 = 9.29$), and is longer-acting and 100-fold more potent than salbutamol.

Physical and Chemical Properties:

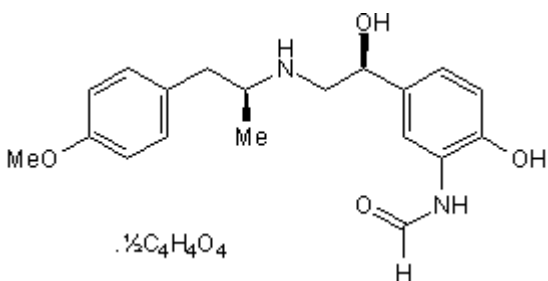
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Batch Molecular Weight: 420.47

Physical Appearance: White solid

Minimum Purity: >99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

DMSO to 50 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Decker et al (1982) Effects of *N*-aralkyl substitution of β -agonists on α - and β -adrenoceptor subtypes: pharmacological studies and binding assays. *J.Pharm.Pharmacol.* **34** 107. PMID: 6121868.

Anderson (1993) Formoterol: pharmacology, molecular basis of agonism, and mechanism of long duration of a highly potent and selective β_2 -adrenoceptor agonist bronchodilator. *Life Sci.* **52** 2145. PMID: 8099696.

Naline et al (1994) Relaxant effects and durations of action of formoterol and salmeterol on the isolated human bronchus. *Eur.Respir.J.* **7** 914. PMID: 7914176.

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