

**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<sub>19</sub>H<sub>24</sub>N<sub>2</sub>O<sub>4</sub> · ½C<sub>4</sub>H<sub>4</sub>O<sub>4</sub> · H<sub>2</sub>O

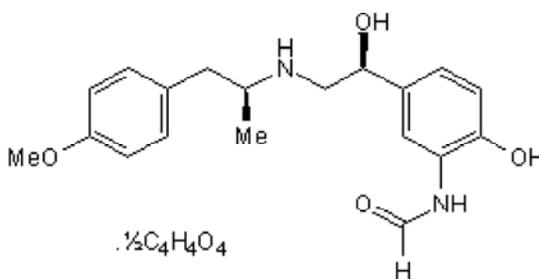
**Batch Molecular Weight:** 420.47

**Physical Appearance:** White solid

**Solubility:** DMSO to 50 mM

**Storage:** Store at RT

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 99.7% purity

**<sup>1</sup>H 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:**

Formoterol hemifumarate is a potent, selective and long-acting  $\beta_2$ -adrenoceptor agonist. Displays 330-fold selectivity for  $\beta_2$  over  $\beta_1$  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 (Cat. No. 0634).

**Physical and Chemical Properties:**

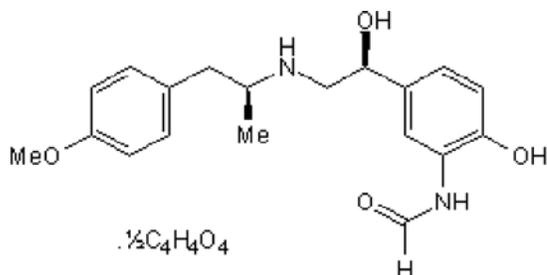
Batch Molecular Formula:  $C_{19}H_{24}N_2O_4 \cdot \frac{1}{2}C_4H_4O_4 \cdot H_2O$

Batch Molecular Weight: 420.47

Physical Appearance: White solid

**Minimum Purity:**  $\geq 99\%$

**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:**

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

**Anderson** (1993) Formoterol: pharmacology, molecular basis of agonism, and mechanism of long duration of a highly potent and selective  $\beta_2$ -adrenoceptor agonist bronchodilator. *Life Sci.* **52** 2145. PMID: 8099696.

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

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