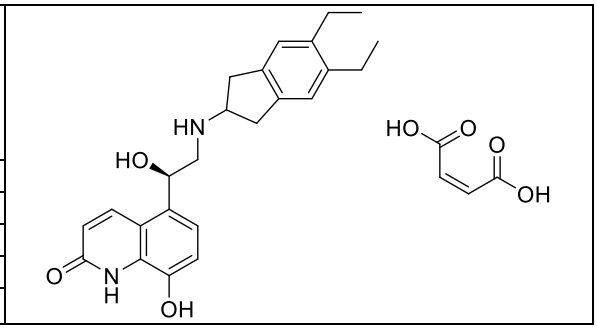
Product data sheet

MedKoo Cat#: 319521 Name: Indacaterol maleate CAS: 753498-25-8 (malate) Chemical Formula: $C_{28}H_{32}N_2O_7$ Molecular Weight: 508.571	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Indacaterol is an ultra-long-acting beta-adrenoceptor agonist developed by Novartis. It was approved in 2009. It is licensed only for the treatment of chronic obstructive pulmonary disease (COPD) (long-term data in patients with asthma are thus far lacking). It is delivered as an aerosol formulation through a dry powder inhaler.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	101.0	198.60

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.97 mL	9.83 mL	19.66 mL
5 mM	0.39 mL	1.97 mL	3.93 mL
10 mM	0.20 mL	0.98 mL	1.97 mL
50 mM	0.04 mL	0.20 mL	0.39 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Lee SU, Ahn KS, Sung MH, Park JW, Ryu HW, Lee HJ, Hong ST, Oh SR. Indacaterol inhibits tumor cell invasiveness and MMP-9 expression by suppressing IKK/NF-κB activation. Mol Cells. 2014 Aug;37(8):585-91. doi: 10.14348/molcells.2014.0076. Epub 2014 Aug 18. PMID: 25134539; PMCID: PMC4145369.
2. Scola AM, Loxham M, Charlton SJ, Peachell PT. The long-acting beta-adrenoceptor agonist, indacaterol, inhibits IgE-dependent responses of human lung mast cells. Br J Pharmacol. 2009 Sep;158(1):267-76. doi: 10.1111/j.1476-5381.2009.00178.x. Epub 2009 Apr 9. PMID: 19371332; PMCID: PMC2795262.

In vivo study

1. Rinaldi B, Donniacuo M, Sodano L, Gritti G, Martuscelli E, Orlandi A, Rafaniello C, Rossi F, Calzetta L, Capuano A, Matera MG. Effects of chronic treatment with the new ultra-long-acting β2 -adrenoceptor agonist indacaterol alone or in combination with the β1 -adrenoceptor blocker metoprolol on cardiac remodelling. Br J Pharmacol. 2015 Jul;172(14):3627-37. doi: 10.1111/bph.13148. Epub 2015 May 12. PMID: 25825265; PMCID: PMC4507164.

7. Bioactivity
Biological target:

Product data sheet

Indacaterol maleate (QAB149) is an orally active ultra-long-acting β2 adrenergic receptor (ADRB2) agonist. Indacaterol maleate inhibits NF-κB activity in a β-arrestin2-dependent manner, preventing further lung damage and improving lung function in COPD (chronic obstructive pulmonary disorder). Indacaterol maleate can also be used in cardiovascular disease research.

In vitro activity

As shown in Fig. 2A, TNF-α induced the phosphorylation of IκBα and IKKα/β (the upstream activators of NF-κB), but indacaterol pretreatments (both 5 and 10 μM) under the same conditions suppressed their phosphorylation. Moreover, consistent with this result, TNF-α-induced NF-κB nuclear translocation was also largely inhibited by pretreatments with 5 and 10 μM indacaterol (Fig. 2B). Therefore, these results suggest that indacaterol may inhibit NF-κB-dependent target gene expression by reducing the activity of NF-κB upstream activators.

Reference: Mol Cells. 2014 Aug;37(8):585-91. https://pubmed.ncbi.nlm.nih.gov/25134539/

In vivo activity

Treatment with either metoprolol or indacaterol alone significantly reduced the infarct size (8.50 ± 0.87% and 12.50 ± 1.44%, respectively; $P < 0.001$) with respect to untreated animals. Metoprolol or indacaterol alone or in combination significantly reduced cardiac GRK2 expression after 15 weeks in the failing rat hearts (Figure 2D, E).

Reference: Br J Pharmacol. 2015 Jul;172(14):3627-37. https://pubmed.ncbi.nlm.nih.gov/25825265/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.