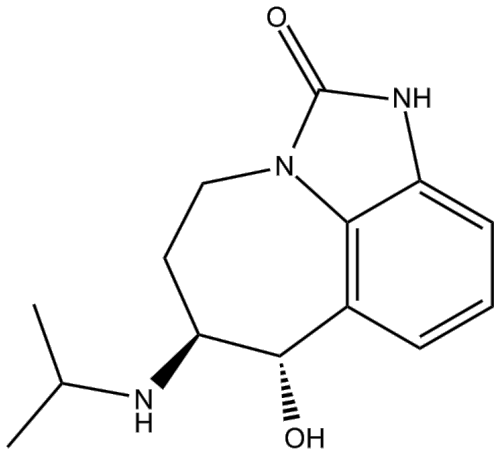
Product Data Sheet

Product Name: Zilpaterol
Cat. No.: GC13333

Chemical Properties

Cas. No.	119520-05-7		
Chemical Name	(6R,7R)-*rel*-4,5,6,7-tetrahydro-7-hydroxy-6-[(1-methylethyl)amino]-imidazo[4,5,1-jk][1]benzazepin-2(1H)-one		
SMILES	O=C1NC2=CC=CC3=C2N1CC[C@H](NC(C)C)[C@H]3O		
Formula	$C_{14}H_{19}N_3O_2$	M.Wt	261.3
Solubility	≤1mg/ml in DMSO;0.1mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

Zilpaterol is a β-adrenergic receptor agonist.

β-adrenergic receptors, prototypic G-protein-coupled receptors, play a key role in regulating numerous physiological processes.

Caution: Product has not been fully validated for medical applications. For research use only.
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In vitro: Previus study found that there was no effect of zilpaterol (ZH) on thymidine incorporation into DNA. ZH at 1 μM could decrease β1-AR mRNA, and 0.01 and 1 μM ZH decreased β2-AR and β3-AR mRNA in myoblasts. There was no effect of ZH on the β-AR or IGF-I gene expression in fused myotube cultures. The β2-AR antagonist ICI-118, 551 attenuated the effect of ZH to reduce expression of β1- and β2-AR mRNA. There was no effect of ICI-118, 551 or ZH on β3-AR or IGF-I. In addition, the total lipid synthesis from acetate was increased by ZH in bovine subcutaneous adipose tissue explants in the absence of theophylline [1].

In vivo: FDA has approved label claims of increased rate of BW gain, improved feed efficiency, and increased carcass leanness. The feeding of ZH for 20 to 40 d with a 3-d withdrawal resulted in significantly increased ADG. Such increases equate to an average of 9 kg heavier BW in ZH-fed steers. Moreover, hot carcass weight has been shown to increase to a larger degree compared with BW, with an average improvement of 15 kg [2].

Clinical trial: So far, no clinical study has been conducted.

References:
[1] Miller, E. K.,Chung, K.Y.,Hutcheson, J.P., et al. Zilpaterol hydrochloride alters abundance of β-adrenergic receptors in bovine muscle cells but has little effect on de novo fatty acid biosynthesis in bovine subcutaneous adipose tissue explants. Journal of Animal Science 90(4), 1317-1327 (2012).
[2] Delmore, R. J.,Hodgen, J.M. and Johnson, B.J. Perspectives on the application of zilpaterol hydrochloride in the United States beef industry. Journal of Animal Science 88(8), 2825-2828 (2010).

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