



TrailBio® PD0325901 User Instructions

Product Configurations

Catalog Number	Size	Quantity
TB27940	10 mg	1 vial

Product Description

Category	Specification
Product	PD0325901
Synonyms	Mirdametinib; PD325901
CAS Number	391210-10-9
MDL Number	MFCD08435926
Formula	C ₁₆ H ₁₄ F ₃ IN ₂ O ₄
Molecular Weight	482.19 g/mol
Storage (Solid)	4 °C for up to 2 years, protect from light
Storage (Solution)	-80 °C for up to 6 months or -20 °C for up to 1 month, protect from light
Shipping	Ambient temperature
Chemical Structure	Chiral The chemical structure of Mirdametinib (PD0325901) is shown. It consists of a central benzene ring substituted with a fluorine atom at the 3-position and a 4-fluorophenyl group at the 2-position. This central ring is connected via an amide bond to a side chain that includes a chiral center (marked with a wedge bond) and a terminal hydroxyl group. The side chain is further substituted with a 4-iodophenyl group and a fluorine atom. The word "Chiral" is written above the structure.

Quality & Analytical Specifications

Test Parameter	Specification
Solid Appearance (Color)	White to off-white
Purity	≥98%

Solubility

Solvent	Solubility
DMSO	≤56 mg/ml (116 mM)

Solution Preparation Guide

Amount	1 mM	5 mM	10 mM
1 mg	2.074 ml	0.415 ml	0.207 ml
10 mg	20.739 ml	4.148 ml	2.074 ml
50 mg	103.693 ml	20.739 ml	10.369 ml

Biological Description

PD0325901, also known as Mirdametinib, is a potent, selective MEK inhibitor that acts through a non-ATP-competitive mechanism. It targets activated MEK1 and MEK2, leading to reduced p-ERK1/2 expression and induction of apoptosis. PD0325901 has also been reported to show anti-cancer activity across a broad range of human tumor xenograft models.

Associated Pathways & Applications

Category	Description
Associated Pathways	MEK/MEK1/MEK2; ERK; p-ERK1/2; caspase
Applications	Stem cell culture; cell signaling studies; cancer research

Targets & Potency

Target	Potency
MEK1 Ki	1 nM
MEK2 Ki	1 nM
MEK IC ₅₀	0.33 nM

Notes

- When using DMSO-based stock solutions, maintain a final DMSO concentration of <0.5% in cell culture applications to minimize potential cellular toxicity, unless a higher concentration has been validated for the specific cell type.
 - Avoid repeated freeze-thaw cycles. Prepare single-use aliquots when possible.
 - Compound may collect on the vial cap or neck during shipping; centrifuge briefly before opening to bring contents to the bottom.
 - Certificate of Analysis (CoA) available upon request. Please contact support@trailbio.com.
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