

Development of Selective PDE-4B Inhibitors for the Treatment of Idiopathic Pulmonary Fibrosis (IPF)

Jeil Pharmaceutical



RESPIRATORY	Candidate
Product Type	Small molecules
Indication	Idiopathic Pulmonary Fibrosis
Target	PDE4B (Phosphodiesterase 4B)
MoA(Mechanism of Action)	PDE4B (Phosphodiesterase 4B) is an enzyme that hydrolyzes cyclic AMP (cAMP), a key secondary messenger involved in inflammatory and immune cell signaling. PDE4B inhibition increases intracellular cAMP levels, leading to the suppression of pro-inflammatory cytokine production and exerting anti-inflammatory and immunomodulatory effects.
Competitiveness	<ol style="list-style-type: none"> (1) PDE4 inhibitors are promising therapeutic targets for idiopathic pulmonary fibrosis (IPF), offering both anti-inflammatory and antifibrotic effects. (2) PDE4B inhibitors, discovered through structure-based drug discovery (SBDD), were developed as novel compounds with enhanced selectivity. (3) By selectively inhibiting PDE4B, side effects associated with other isoenzymes, such as nausea and vomiting from PDE4D inhibition, are minimized. (4) Strong PDE4B inhibition leads to superior TNF-α suppression and enhanced anti-inflammatory efficacy compared to existing treatments.
Development Stage	Candidate
Route of Administration	Oral administration

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