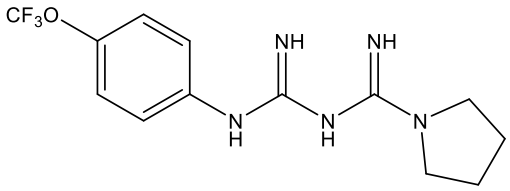
Catalog # 10-4657

IM156

CAS# 1422365-93-2

N'-[N'-[4-(Trifluoromethoxy)phenyl]carbamimidoyl]pyrrolidine-1-carboxamidine; HL156A

Lot # FBS3004



IM156 is a potent activator of AMP-activated protein kinase (AMPK) showing greater activity than metformin or AICAR.[1] It displayed protective effects *in vivo* against peritoneal[1], liver[2], renal[3],and pulmonary fibrosis[4]. IM156 induces metabolic stress in Myc$^+$ lymphoma cells by inhibiting TCA cycle metabolism and mitochondrial respiration (inhibits mitochondrial protein complex 1).[4] IM156 acts as an antiproliferative in several cancer models.[5-7]

1) Ju *et al*. (2015), *HL156A, a novel AMP-activated protein kinase activator, is protective against peritoneal fibrosis in an in vivo and in vitro model of peritoneal fibrosis*; Am. J. Physiol. Renal Physiol.,**310** F342
2) Lee *et al*. (2016), *AMP-activated protein kinase activator, HL156A reduces thioacetamide-induced liver fibrosis in mice and inhibits the activation of cultured hepatic stellate cells and macrophages*; Int. J. Oncol., **49** 1407
3) Tsogbadrakh *et al*. (2018), *HL156A, a novel pharmacological agent with potent adenosine-monophosphate-activated protein kinase (AMPK) activator ameliorates renal fibrosis in a rat unilateral ureteral obstruction model*; PLoS One, **13** e0201692
4) Izreig *et al*. (2020), *Repression of LKB1 by mi-17`92 Sensitizes MYC-Dependent Lymphoma to Biguanidine Treatment*; Cell Rep. Med., **1** 100014
5) Choi *et al*. (2016), *Inhibiting stemness and invasive properties of glioblastoma tumorsphere by combined treatment with temozolomide and a newly designed biguanidine (HL156A)*; Oncotarget, **7** 65643
6) Jeong *et al*. (2020), *Metformin Derivative HL156A Reverses Multidrug Resistance by Inhibiting HOXC6/ERK1/2 Signaling in Multidrug-Resistant Human Cancer Cells*; Pharmaceuticals (Basel), **13** 218
7) Geiger *et al*. (2022), *First-in-human study of IM156, a novel potent biguanidine oxidative phosphorylation (OXPHOS) inhibitor, in patients with advanced solid tumors*; Invest. New Drugs, **40** 1001

PHYSICAL DATA

Molecular Weight:	315.30
Molecular Formula:	$C_{13}H_{16}F_3N_5O$
Purity:	>98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (25 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied desiccated at -20°C for up to 1 year from the date of purchase.
	Solutions in DMSO or ethanol may be stored at -20°C for up to 2 months.

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