Insulin degludec

Cat. No.: HY-108743

CAS No.: 844439-96-9

Target: Insulin Receptor

Pathway: Protein Tyrosine Kinase/RTK

Storage: Sealed storage, away from moisture and light, under nitrogen

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)

Insulin degludec

SOLVENT & SOLUBILITY

In Vitro	0.1 M HCL : 50 mg/mL (ultrasonic and adjust pH to 2 with 0.1 M HCL) H_2O : 50 mg/mL (Need ultrasonic)

BIOLOGICAL ACTIVITY

Description	Insulin degludec is an ultra-long-acting form of insulin used for the research of hyperglycemia caused by type 1 and type 2 dabetes. Insulin degludec shows binding efficiency with an IC_{50} value of 19.59 nM for insulin receptor. Insulin degludec can be used for the research of type 1 and type 2 diabetes[1][2].
IC_{50} & Target	IC50: 19.59 nM/L (insulin receptor)[2]
In Vitro	Insulin degludec (0.001-1000 nM; 12 h) binds with insulin receptor with an IC_{50} value of 19.59 nM[2]. Insulin degludec (200 nM; 10 min) increases glucose uptake in HL-1 cells[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. Western Blot Analysis[2]

Cell Line:	HL-1 cardiomyocytes
Concentration:	200 nM
Incubation Time:	0-60 min
Result:	Decreased the level of Akt phosphorylation after 5 and 10 min treatment.

In Vivo	Insulin degludec (5 U/kg; s.c. once daily for 30 days) affects glucose homeostasis and liver metabolism in diabetic mice undergoing insulin-induced hypoglycemia[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Swiss mice with diabetes[1]

Dosage:	5 U/kg
Administration:	Subcutaneous injection; 5 U/kg once daily for 30 days
Result:	Showed a fast response to insulin-induced hypoglycemia with a glycemic level at or slightly under 100 mg/dl after 60 min and this response effect can be abolished by cortisol. Diminished rates of glucose production and showed a low lactate production in livers. Increased the number of hepatocytes.

REFERENCES

[1]. Bataglini C, et al. Insulin degludec and glutamine dipeptide modify glucose homeostasis and liver metabolism in diabetic mice undergoing insulin-induced hypoglycemia. J Appl Biomed. 2021 Dec;19(4):210-219.

[2]. Hartmann T, et al. Effect of the long-acting insulin analogues glargine and degludec on cardiomyocyte cell signalling and function. Cardiovasc Diabetol. 2016 Jul

Caution: Product has not been fully validated for medical applications. For research use only.

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