

## Insulin degludec

<b>Cat. No.:</b>	HY-108743
<b>CAS No.:</b>	844439-96-9
<b>Target:</b>	Insulin Receptor
<b>Pathway:</b>	Protein Tyrosine Kinase/RTK
<b>Storage:</b>	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

<b>In Vitro</b>	0.1 M HCL : 50 mg/mL (ultrasonic and adjust pH to 2 with 0.1 M HCL)
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### BIOLOGICAL ACTIVITY

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

<b>In Vivo</b>	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 <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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Animal Model:	Male Swiss mice with diabetes <sup>[1]</sup>
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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