

Product Data Sheet

Product Name: Glucose-dependent Insulinotropic Polypeptide (human) (trifluoroacetate salt)
Cat. No.: GC92134

Chemical Properties

Cas. No.

Chemical Name L-tyrosyl-L-alanyl-L- α -glutamylglycyl-L-threonyl-L-phenylalanyl-L-isoleucyl-L-seryl-L- α -aspartyl-L-tyrosyl-L-seryl-L-isoleucyl-L-alanyl-L-methionyl-L- α -aspartyl-L-lysyl-L-isoleucyl-L-histidyl-L-glutamyl-L-glutamyl-L- α -aspartyl-L-phenylalanyl-L-valyl-L-asparaginyl-L-tryptophyl-L-leucyl-L-leucyl-L-alanyl-L-glutamyl-L-lysylglycyl-L-lysyl-L-lysyl-L-asparaginyl-L- α -aspartyl-L-tryptophyl-L-lysyl-L-histidyl-L-asparaginyl-L-isoleucyl-L-threonyl-L-glutamine, trifluoroacetate salt

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Formula $C_{226}H_{338}N_{60}O_{66}S \cdot XCF_3COOH$ M.Wt 4983.5

Solubility Water: 1 mg/ml Storage $-20^{\circ}C$

General tips For obtaining a higher solubility, please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

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

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Product Data Sheet

Structure



Background

Glucose-dependent Insulinotropic Polypeptide (GIP) (human) is an endogenous 42-amino acid peptide incretin hormone that induces insulin secretion in response to glucose.¹ It belongs to the secretin/glucagon superfamily of peptides, which includes secretin, glucagon, glucagon-like peptide-1 (GLP-1, GLP-2), and pituitary adenylate cyclase-activating polypeptide (PACAP).² GIP is a GIP receptor agonist that binds to rat recombinant GIP receptors expressed in CHO-K1 cells (IC₅₀ = 3.2 nM) and increases cAMP accumulation (EC₅₀ = 377 pM).³ It stimulates insulin secretion from BRIN-BD11 rat pancreatic β -cells when used at a concentration of 10 nM.⁴ GIP (1 pmol/min per 100 g) decreases blood glucose level and increases plasma insulin level in rats following glucose challenge.³ It also decreases plasma glucose level and increases insulin level in *ob/ob* mice following glucose challenge when administered at a dose of 25 nmol/kg.⁵

References:

- [1]. Baggio, L.L., and Drucker, D.J. Biology of incretins: GLP-1 and GIP. *Gastroenterology* 132(6):2131-2157(2007).
- [2]. Vaudry, D., Falluel-Morel, A., Bourgault, S., et al. Pituitary adenylate cyclase-activating polypeptide and its receptors: 20 years after the discovery. *Pharmacol. Rev.* 61(3):283-357(2009).
- [3]. Hinke, S.A., Manhart, S., Pamir, N., et al. Identification of a bioactive domain in the amino-terminus of glucose-dependent insulinotropic polypeptide (GIP). *Biochim. Biophys. Acta* 1547(1):143-155(2001).
- [4]. Kerr, B.D., Flatt, A.J., Flatt, P.R., et al. Characterization and biological actions of N-terminal truncated forms of glucose-dependent insulinotropic polypeptide. *Biochem. Biophys. Res. Commun.* 404(3):870-876(2011).
- [5]. O'Harte, F.P., Hunter, K., Gault, V.A., et al. Antagonistic effects of two novel GIP analogs, (Hyp3)GIP and (Hyp3)GIP-Lys16PAL, on the biological actions of GIP and longer-term effects in diabetic *ob/ob* mice. *Am. J. Physiol. Endocrinol. Metab.* 292(6):E1674-E1682(2007).

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