Product Data Sheet

Product Name: Pertussis Toxin

Cat. No.: GC17532

Chemical Properties

Cas No.	70323-44-3		
分子式	$C_{87}H_{162}N_{14}O_{16}S_2$	分子量	1724.44
溶解度	Water: soluble	储存条件	Store at 2-8°C, do not freeze
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure

Background

Pertussis toxin (islet-activating protein) is a toxin, first isolated from B. pertussis, that is used to study G protein-coupled receptor signaling in cells and experimental autoimmune encephalomyelitis (EAE) in animals. Pertussis toxin catalyzes the transfer of the ADP-ribose moiety of NAD to the α subunits of heterotrimeric Gi/o proteins, resulting in the receptors being uncoupled from Gi/o proteins.[1],[2] Pertussis toxin is also used as an adjuvant, given with specific antigens, to immunize animals and induce EAE, an animal model of multiple sclerosis.[3],[4] Pertussis toxin was first described as an islet-activating protein because it caused a sustained potentiation of the secretory response of pancreatic islet cells to various stimuli that stimulate Gi-linked α-adrenergic receptors.[5],[6]

Reference:
[1]. Kaslow, H.R., and Burns, D.L. Pertussis toxin and target eukaryotic cells: Binding, entry, and activation. FASEB J. 6(9), 2684-2690 (1992).
[2]. Ui, M. Islet-activating protein, pertussis toxin: A probe for functions of the inhibitory guanine nucleotide regulatory component of adenylate cyclase. Trends Pharmacol. Sci. 5, 277-279 (1984).
[3]. Hofstetter, H.H., Shive, C.L., and Forsthuber, T.G. Pertussis toxin modulates the immune response to neuroantigens injected in incomplete Freund's adjuvant: Induction of Th1 cells and experimental autoimmune

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encephalomyelitis in the presence of high frequencies of Th2 cells. Journal of Immunology 169(1), 117-125 (2002).
[4]. Ronchi, F., Basso, C., Preite, S., et al. Experimental priming of encephalitogenic Th1/Th17 cells requires pertussis toxin-driven IL-1β production by myeloid cells. Nat.Commun. 7:11541, (2016).
[5]. Heyworth, C.M., Grey, A.M., Wilson, S.R., et al. The action of islet activating protein (pertussis toxin) on insulin's ability to inhibit adenylate cyclase and activate cyclic AMP phosphodiesterases in hepatocytes. Biochemistry Journal 235(1), 145-149 (1986).
[6]. Katada, T., and Michio, U. Slow interaction of islet-activating protein with pancreatic islets during primary culture to cause reversal of α-adrenergic inhibition of insulin secretion. The Journal of Biological Chemisty 255(20), 9580-9588 (1980).

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