

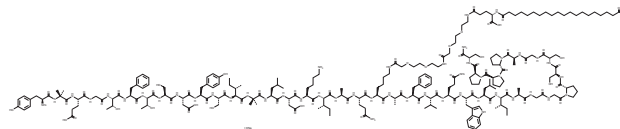
# PRODUCT INFORMATION



## Tirzepatide (sodium salt)

Item No. 39748

**Formal Name:** L-tyrosyl-2-methylalanyl-L- $\alpha$ -glutamylglycyl-L-threonyl-L-phenylalanyl-L-threonyl-L-seryl-L- $\alpha$ -aspartyl-L-tyrosyl-L-seryl-L-isoleucyl-2-methylalanyl-L-leucyl-L- $\alpha$ -aspartyl-L-lysyl-L-isoleucyl-L-alanyl-L-glutamyl-N<sup>6</sup>-[(22S)-22,42-dicarboxy-1,10,19,24-tetraoxo-3,6,12,15-tetraoxa-9,18,23-triazadotetracont-1-yl]-L-lysyl-L-alanyl-L-phenylalanyl-L-valyl-L-glutamyl-L-tryptophyl-L-leucyl-L-isoleucyl-L-alanyl-glycylglycyl-L-prolyl-L-seryl-L-serylglycyl-L-alanyl-L-prolyl-L-prolyl-L-serinamide, sodium salt



**Synonym:** LY3298176

**MF:** C<sub>225</sub>H<sub>348</sub>N<sub>48</sub>O<sub>68</sub> • XNa

**FW:** 4,813.5

**Purity:** ≥95%

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Tirzepatide (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the tirzepatide (sodium salt) in the solvent of choice, which should be purged with an inert gas. Tirzepatide (sodium salt) is sparingly soluble (1-10 mg/ml) in DMSO. It is also soluble (≥10 mg/ml) in water. We do not recommend storing the aqueous solution for more than one day.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of tirzepatide (sodium salt) can be prepared by directly dissolving the solid in aqueous buffers. Tirzepatide (sodium salt) is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

Tirzepatide is an agonist of glucagon-like peptide 1 receptor (GLP-1R) and gastric inhibitory polypeptide (GIP) receptor.<sup>1</sup> It induces cAMP production in HEK293 cells expressing human GLP-1R or human GIP receptor (EC<sub>50</sub>s = 6.54 and 1.01 nM, respectively). Tirzepatide (100 nM) induces receptor internalization in HEK293 cells expressing human GLP-1R or GIP receptor. *In vivo*, tirzepatide (10 nmol/kg per day) decreases body weight, food intake, plasma levels of leptin, triglycerides, and free fatty acids (FFAs), hepatic levels of triglycerides, and blood glucose levels in a mouse model of high-fat diet-induced obesity.<sup>2</sup> It prevents *A. alternata*-induced increases in the numbers of eosinophils and lymphocytes in the bronchoalveolar lavage fluid (BALF) from *A. alternata*-challenged mice when administered at a dose of 50 nmol/kg every three days.<sup>3</sup> Tirzepatide (50 nmol/kg every three days) inhibits bronchoconstriction induced by the muscarinic receptor agonist methacholine (acetyl- $\beta$ -methylcholine; Item No. 23092) in a mouse model of diabetes-induced asthma. Formulations containing tirzepatide have been used in the treatment of type 2 diabetes mellitus.

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## References

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1. Willard, F.S., Douros, J.D., Gabe, M.B.N., *et al.* Tirzepatide is an imbalanced and biased dual GIP and GLP-1 receptor agonist. *JCI Insight* **5**(17), e140532 (2020).
2. Samms, R.J., Christe, M.E., Collins, K.A.L., *et al.* GIPR agonism mediates weight-independent insulin sensitization by tirzepatide in obese mice. *J. Clin. Invest.* **131**(12), e146353 (2021).
3. Toki, S., Zhang, J., Printz, R.L., *et al.* Dual GIPR and GLP-1R agonist tirzepatide inhibits aeroallergen-induced allergic airway inflammation in mouse model of obese asthma. *Clin. Exp. Allergy* **53**(2), 216-221 (2023).

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