PRODUCT INFORMATION

740 Y-P (trifluoroacetate salt)

Item No. 22598

Formal Name: L-arginyl-L-glutaminyl-L-isoleucyl-L-lysyl-L-isoleucyl-L-tryptophyl-L-phenylalanyl-L-glutaminyl-L-asparaginyl-L-arginyl-L-arginyl-L-methionyl-L-lysyl-L-tryptophyl-L-lysyl-L-lysyl-L-seryl-L-α-aspartylglycylglycyl-O-phosphono-L-tyrosyl-L-methionyl-L-α-aspartyl-L-methionyl-L-serine, trifluoroacetate salt

Peptide Sequence: RQIKIWFQNRRMKWKKSDGG-[pY]-MDMS

MF: $C_{141}H_{222}N_{43}O_{39}PS_3 \bullet XCF_3COOH$

FW: 3,270.7

Purity: ≥85%

UV/Vis.: λ_{max}: 210, 221, 281 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years

Arg — Gln — Ile — Lys — Ile — Trp — Phe — Gln — Asn — Arg —
Arg — Met — Lys — Trp — Lys — Lys — Ser — Asp — Gly — Gly —
pTyr — Met — Asp — Met — Ser
• XCF_3COOH

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

Laboratory Procedures

740 Y-P (trifluoroacetate salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the 740 Y-P (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. 740 Y-P (trifluoroacetate salt) is soluble in the organic solvent DMSO at a concentration of approximately 20 mg/ml.

740 Y-P (trifluoroacetate salt) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 740 Y-P (trifluoroacetate salt) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 740 Y-P (trifluoroacetate salt) has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

740 Y-P is a synthetic phosphopeptide activator of PI3K.[1,2] It contains amino acids from the Antennapedia protein, which acts as a cellular internalization sequence, followed by a sequence from PDGFR that is recognized by the SH2 domain of PI3K.[1] 740 Y-P (15 µM) increases phosphorylation of PI3K, mammalian target of rapamycin (mTOR), and glycogen synthase kinase 3β (GSK3β) in HepG2 hepatocellular carcinoma cells.[2] It prevents glucose-oxygen deprivation-induced decreases in viability of primary rat hippocampal cells in an *in vitro* model of ischemia when used at a concentration of 1 µM.[3] 740 Y-P (1 µM), in combination with the thrombopoietin receptor (TPOR) agonist butyzamide, hematopoietic stem cell (HSC) self-renewal agonist UM171, and polymer PCL-PVAc-PEG, has been used to expand isolated human umbilical cord blood HSCs *ex vivo* for up to 30 days.[4]

References

1. Derossi, D., Williams, E.J., Green, P.J., *et al.* Stimulation of mitogenesis by a cell-permeable PI 3-kinase binding peptide. *Biochem. Biophys. Res. Commun.* **251(1)**, 148-152 (1998).
2. Qin, B., Zeng, Z., Xu, J., *et al.* Emodin inhibits invasion and migration of hepatocellular carcinoma cells via regulating autophagy-mediated degradation of snail and β-catenin. *BMC Cancer* **22(1)**, 671 (2022).
3. Turovsky, E.A., Turovskaya, M.V., Gaidin, S.G., *et al.* Cytokine IL-10, activators of PI3-kinase, agonists of α-2 adrenoreceptor and antioxidants prevent ischemia-induced cell death in rat hippocampal cultures. *Arch. Biochem. Biophys.* **615**, 35-43 (2017).
4. Sakurai, M., Ishitsuka, K., Ito, R., *et al.* Chemically defined cytokine-free expansion of human haematopoietic stem cells. *Nature* **615(7950)**, 127-133 (2023).

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