740 Y-P

Cat. No.:	HY-P0175
CAS No.:	1236188-16-1
Molecular Formula:	$C_{141}H_{222}N_{43}O_{39}PS_3$
Molecular Weight:	3270.7
Sequence Shortening:	RQIKIWFQNRRMKWKKSDGG-{PO2Y}-MDMS
Target:	PI3K; Autophagy
Pathway:	PI3K/Akt/mTOR; Autophagy
Storage:	Protect from light Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)

RQIKIWFQNRRMKWKKSDGG-{PO2-Tyr}-MDMS

SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (7.64 mM; Need ultrasonic)
H_2O : 2 mg/mL (0.61 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.3057 mL	1.5287 mL	3.0574 mL
5 mM	0.0611 mL	0.3057 mL	0.6115 mL
10 mM	---	---	---

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (0.76 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (0.76 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (0.76 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

740 Y-P (740YPDGFR; PDGFR 740Y-P) is a potent and cell-permeable PI3K activator. 740 Y-P readily binds GST fusion proteins containing both the N- and C- terminal SH2 domains of p85 but fails to bind GST alone[1].

IC_{50} & Target

PI3K

In Vitro

740 Y-P (50 μg/mL; 48 hours) specificly stimulates mitogenesis in medium is better than EGF or FGF at stimulating entry into S-phase, it shows the percentage of cells in S-phase for 48.3% in C2 cells. Additionally, LY294002 (HY-10108) or Wortmannin (HY-10197) potently inhibits the mitogenic response stimulated by the peptide[1].

740 Y-P (1 μg/mL) stimulates mitogenesis at the lowest concentration tested. The peptide stimulates mitogenesis in both the presence and absence of serum (0.5%), and in the former instance a maximal response observed at 50 μg/mL. 740Y-P to stimulate mitogenesis is highly specific and not a general feature of a cell permeable SH2 domain binding peptides[1].

740 Y-P (30 μM; 24 hours) remarkably inhibits the level of LC3-II/LC3-I in GO-induced PC12 cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

Cell Line:	PC12 cells
Concentration:	30 μM
Incubation Time:	24 hours
Result:	Inhibited the protein expression of LC3-II.

In Vivo

740 Y-P is not only internalised in living cells but can also interact with p85 in vivo[1].

740 Y-P (intraperitoneal injection; 10 mg/kg; 6 weeks) decreases the degree of ROS levels in Aβ(25-32) treated hippocampal tissues and increases the extent of AKT and PI3K phosphorylation in alzheimer's disease (AD) rat model[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Biomaterials. 2019 Feb;194:57-72.
- Acta Biomater. 2018 Nov;81:278-292.
- J Exp Clin Cancer Res. 2021 Aug 12;40(1):255.
- J Exp Clin Cancer Res. 2020 Jun 30;39(1):123.
- Oxid Med Cell Longev. 2021 Mar 31.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Derossi D, et al. Stimulation of mitogenesis by a cell-permeable PI 3-kinase binding peptide.

[2]. Xiaoli Feng, et al. Graphene Oxide Induces p62/SQSTM-dependent Apoptosis Through the Impairment of Autophagic Flux and Lysosomal Dysfunction in PC12 Cells. Acta Biomater. 2018 Nov;81:278-292.

[3]. Zhiqing Sun, et al. GABAB Receptor-Mediated PI3K/Akt Signaling Pathway Alleviates Oxidative Stress and Neuronal Cell Injury in a Rat Model of Alzheimer's Disease. J Alzheimers Dis. 2020;76(4):1513-1526.

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

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com