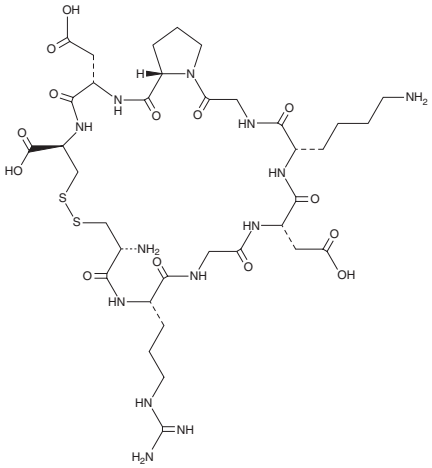
PRODUCT INFORMATION

iRGD Peptide

Item No. 42319



CAS Registry No.:	1392278-76-0
Formal Name:	cyclic (1→9)-disulfide L-cysteinyl-L-arginylglycyl-L-α-aspartyl-L-lysylglycyl-L-prolyl-L-α-aspartyl-L-cysteine
Synonyms:	cyclic[Cys-Arg-Gly-Asp-Lys-Gly-Pro-Asp-Cys], Internalizing Arginine-Glycine-Aspartic Acid Peptide
Peptide Sequence:	c[CRGDKGPDC]
MF:	$C_{35}H_{57}N_{13}O_{14}S_2$
FW:	948.0
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

Internalizing arginine-glycine-aspartic acid (iRGD) peptide is supplied as a solid. A stock solution may be made by dissolving the iRGD peptide in the solvent of choice, which should be purged with an inert gas. iRGD peptide is soluble (≥10 mg/ml) in DMSO.

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 iRGD peptide can be prepared by directly dissolving the solid powder in aqueous buffers. iRGD peptide is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

iRGD peptide is a tumor-targeting peptide that has been used in the generation of nanocarriers and lipid nanoparticles (LNPs) for the delivery of degraders and anticancer agents *in vitro* and *in vivo*.[1,2] Nanocarriers composed of zeolitic imidazolate framework 90 (ZIF-90) conjugated to iRGD peptide and encapsulating a fluorescent reporter selectively traffic to tumors over kidneys, lungs, spleen, liver, and heart in mice in an MDA-MB-436 mouse xenograft model. ZIF-90 nanocarriers conjugated to iRGD peptide and encapsulating hemin and atovaquone (Item No. 23802) degrade BTB and CNC homolog 1 (BACH1) in a hemin-dependent manner, reduce the mitochondrial oxygen consumption rate (OCR), and induce cell death in MDA-MB-436 cells.[1] The same nanocarriers decrease tumor volume and weight and improve survival in an MDA-MB-436 mouse xenograft model. LNPs conjugated to iRGD peptide and encapsulating mitoxantrone (Item No. 14842) and a pH-responsive 2-(diisopropylamino)ethyl methacrylate (DPA) polymer reduce tumor weight in an MCF-7 breast cancer mouse xenograft model.[2]

References

1. Lu, L., Liu, G., Lin, C., *et al.* Mitochondrial metabolism targeted nanoplatform for efficient triple-negative breast cancer combination therapy. *Adv. Healthc. Mater.* **10(20)**, e2100978 (2021).
2. Yao, Y., Saw, P.E., Nie, Y., *et al.* Multifunctional sharp pH-responsive nanoparticles for targeted drug delivery and effective breast cancer therapy. *J. Mater. Chem. B.* **7(4)**, 576-585 (2019).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM