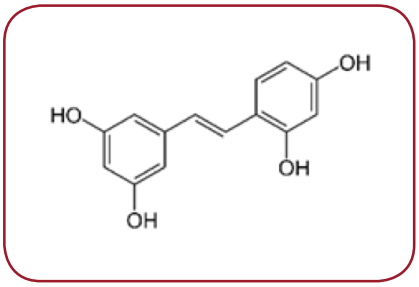
Innaxon
United Kingdom
Email: info@innaxon.com
Website: www.innaxon.co.uk



PRODUCT DATA SHEET

Oxyresveratrol powered by Lipodisq™ Sterile Solution

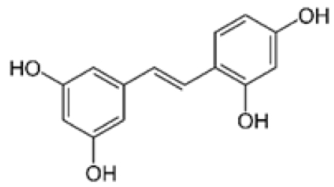
Nano-formulated aqueous solution: Ready-to-use

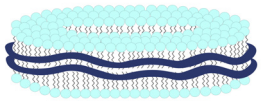
Cat. No.: IAX-700-104 **Lot. No.:**

Synonyms	2, 3, 4, 5-tetrahydroxy-stilbene in a detergent-free nano-formulation made of styrene-maleic acid lipid particles (SMALP)
Empirical Formula	$C_{14}H_{12}O_4$
Concentration	1mg/ml (0.1% w/vol)
Size	1ml
MW	244.2
CAS	29700-22-9
Purity	≥ 95% (HPLC)
Solution pH	7.00 - 7.50
Solubility	Soluble in water, PBS, Tris and other physiological solutions as formulated in a proprietary, thermostable, aqueous lipid nanoparticulate formulation (Lipodisq™, Malvern Cosmeceutics Ltd., Malvern UK). Avoid the use of buffers with divalent ions such as Ca or Mg or pH <6.5 or >8.0, which can cause particle instability. Unformulated oxyresveratrol is soluble in chloroform.
Formulation	Lipodisq™ are nanosized lipid-based discoidal particles that can be manufactured to incorporate hydrophobic, poorly water-soluble compounds, such as lipids, lipoproteins and glycolipids.
Appearance	Light amber coloured clear aqueous solution
Handling	Keep sterile. Avoid skin and eye contact.
Activity	Cell culture tested (human macrophage cell line) (MTT). Recommended starting dilution: 1:200 or higher. Optimal working concentrations depend on the applications and need to be determined. Published procedures using Lipodisq™ formulations (Curcumin and IAXO TLR4 antagonists) *in vivo* rodent models at 3-10mg/kg. Recommended route of administration is subcutaneous (s.c.) with oral or nasal application as a possible alternative, which needs to be optimised. Carrier only control: Lipodisq™ Control Sterile Solution (Cat. No.: IAX-700-100).
Shipping	Ambient
Storage	2-8°C
Stability	12 months after receipt (unopened and as supplied)
MSDS	Available on request

Document No.: IAX-700-104-TDS | **Version:** 1.2 | **Issue Date:** 16/09/2022

Innaxon
United Kingdom
Email: info@innaxon.com
Website: www.innaxon.co.uk





Oxyresveratrol powered by Lipodisq™ Sterile Solution

Nano-formulated aqueous solution: Ready-to-use

Cat. No.: IAX-700-104 **Lot. No.:**

General Information

- Naturally occurring analogue of resveratrol.
- Potent antioxidant and free-radical scavenger.
- Neuroprotective activity against cerebral ischemia and against traumatic injury.
- Apoptosis inhibitor in transient cerebral ischemia.
- Inhibitor of viral DNA replication and late viral protein synthesis
- Depigmenting by effectively inhibiting tyrosinase activity, which catalyzes the rate-limiting step in synthesizing melanin pigments.
- Anti-inflammatory by inhibition of iNOS expression through down-regulation of NF-kB binding activity and significant inhibition of COX-2 activity.
- Anti-hyperlipidaemic agent

Oxyresveratol References

[1] *Oxyresveratrol: Sources, Productions, Biological Activities, Pharmacokinetics, and Delivery Systems.* Likhitwitayawuid K. Molecules (2021); 26:4212

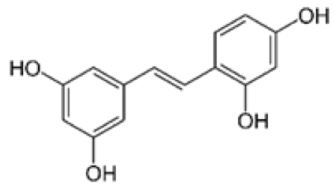
[2] *Oxyresveratrol-Loaded PLGA Nanoparticles Inhibit Oxygen Free Radical Production by Human Monocytes: Role in Nanoparticle Biocompatibility.* Donini M, et al. Molecules (2021); 26:4351

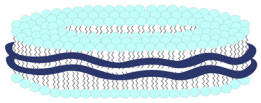
[3] *Oxyresveratrol Inhibits R848-Induced Pro-Inflammatory Mediators Release by Human Dendritic Cells Even When Embedded in PLGA Nanoparticles.* Gaglio SC, et al. Molecules (2021); 26:2106

[4] *Oxyresveratrol Ameliorates Dextran Sulfate Sodium-Induced Colitis in Rats by Suppressing Inflammation.* Yeom J, et al. Molecules (2021); 26:2630

[5] *Oxyresveratrol Supplementation to C57bl/6 Mice Fed with a High-Fat Diet Ameliorates Obesity-Associated Symptoms.* Tan HY, et al. Nutrients (2017); 9:147

Innaxon
United Kingdom
Email: info@innaxon.com
Website: www.innaxon.co.uk





Oxyresveratrol powered by Lipodisq™ Sterile Solution

Nano-formulated aqueous solution: Ready-to-use

Cat. No.: IAX-700-104 **Lot. No.:**

Lipodisq™ Technology

- A nanoparticle (11-40nm) drug delivery system comprising a discoidal phospholipid bilayer membrane stabilised by a chaperone molecule annulus.
- Internal properties of the phospholipid membrane support the disposition and stabilisation of drug molecule candidates and preserve the native conformation of membrane molecules.
- The resulting encapsulated actives are rendered water-soluble and specialised for intra-cellular penetration/delivery via endosomal uptake mechanisms.
- Lipodisq™ solutions show a good safety profile and are suitable for *in vitro* and *in vivo* investigations.
- For a customizable biodegradable Lipodisq™ version with a higher concentration of actives or an alternative lipid option, contact Innaxon.

Component	Concentration	CAS #	EC #
Water (sterile)	QS	7732-18-5	231-791-2
Poly(styrene maleic acid)	25mg/ml	26762-29-8	607-996-1
Lecithin	9mg/ml	92128-87-5	295-786-7
Oxyresveratrol	1mg/ml	29700-22-9	608-401-8

Lipodisq™ References

[1] *Mechanisms of Formation, Structure, and Dynamics of Lipoprotein Discs Stabilized by Amphiphilic Copolymers: A Comprehensive Review.* Orekhov PS, et al. Nanomaterials (2022); 12:361

[2] *Applications of Synthetic Polymer Discoidal Lipid Nanoparticles to Biomedical Research.* Tanaka M. Chem. Pharm. Bull. (2022); 70:507

[3] *Understanding the Structural Pathways for Lipid Nanodisc Formation: How Styrene Maleic Acid Copolymers Induce Membrane Fracture and Disc Formation.* Bjørnestad VA, et al. Langmuir (2021); 37:6178

[4] *Physicochemical Characterization, Toxicity and In Vivo Biodistribution Studies of a Discoidal, Lipid-Based Drug Delivery Vehicle: Lipodisq Nanoparticles Containing Doxorubicin.* Torgersen ML, et al. J. Biomed. Nanotechnol. (2020); 16:41

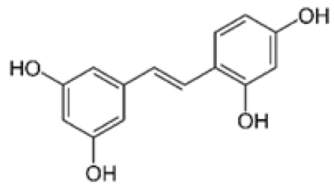
[5] *Effects of charged lipids on the physicochemical and biological properties of lipid–styrene maleic acid copolymer discoidal particles.* Tanakaa M, et al. Biochim. Biophys. Acta. Biomembr. (2020); 1862:183209

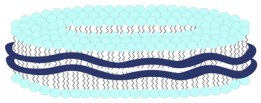
[6] *From polymer chemistry to structural biology: The development of SMA and related amphipathic polymers for membrane protein extraction and solubilization.* Bada Juarez JF, et al. Chem. Phys. Lipids. (2019); 221:167

[7] *The styrene–maleic acid copolymer: a versatile tool in membrane research.* Dörr JM, et al. Eur. Biophys. J. (2016); 45:3

[8] *Reconstitution of membrane proteins: a GPCR as an example.* Goddard AD, et al. Methods Enzymol. (2015); 556:405

Innaxon
United Kingdom
Email: info@innaxon.com
Website: www.innaxon.co.uk





Oxyresveratrol powered by Lipodisq™ Sterile Solution

Nano-formulated aqueous solution: Ready-to-use

Cat. No.: IAX-700-104 **Lot. No.:**

Lipodisq™ References

[9] *Nano-size uni-lamellar lipodisq improved in situ auto-phosphorylation analysis of E. coli tyrosine kinase using (19)F nuclear magnetic resonance.* Li D, et al. Protein Cell (2015); 6:229

[10] *Characterizing the structure of lipodisq nanoparticles for membrane protein spectroscopic studies.* Zhang R, et al. Biochim. Biophys. Acta. (2015); 1848:329

[11] *Advances in the use of nanoscale bilayers to study membrane protein structure and function.* Malhotra K and Alder NN. Biotechnol. Genet. Eng. Rev. (2014); 30:79

[12] *DEER EPR measurements for membrane protein structures via bifunctional spin labels and lipodisq nanoparticles.* Sahu ID, et al. Biochemistry (2013); 52:6627

[13] *Detergent-free formation and physicochemical characterization of nanosized lipidpolymer complexes: lipodisq.* Orwick MC, et al. Angew. Chem. (2012); 51:4653

[14] *Detergent-free incorporation of a seven-transmembrane receptor protein into nanosized bilayer lipodisq particles for functional and biophysical studies.* Orwick-Rydmark M, et al. Nano Lett. (2012); 12:4687

[15] *In vitro and in vivo evaluation of tumor targeting styrene-maleic acid copolymer-pirarubicin micelles: survival improvement and inhibition of liver metastases.* Daruwalla, J, et al. Cancer Sci. (2010); 101:1866

[16] *Poly(styrene-alt-maleic anhydride) derivatives as potent anti-HIV microbicide candidates.* Fang W, et al. Bioorg. Med. Chem. Lett. (2009); 19:1903

[17] *SMA–doxorubicin, a new polymeric micellar drug for effective targeting to solid tumours.* Greish K, et al. J. Control. Release (2004); 97:219

[18] *Responsive Hydrophobically Associating Polymers: A Review of Structure and Properties.* Tonge, SR and Tighe, BJ. Adv. Drug Deliv. Rev. (2001): 53:109

Authorized Uses & Restrictions

The purchase of Innaxon product(s) conveys to the buyer the non-transferable right to use the purchased amount of the product and all replicates and derivatives for, internal, non-profit research purposes. The buyer cannot sell, resale or otherwise transfer (a) the product (b) its components or (c) materials made using this product or its components to a third party. The buyer agrees that any activity undertaken with the product and replicates or derivatives will be conducted in compliance with all applicable guidelines, laws, and regulations. The buyer agrees that the product and replicates or derivatives will not be used for any animal or human therapeutic or diagnostic use.

Limited Use License

Purchase does not include any other right or license to use, develop or otherwise exploit our products. Any use of Innaxon products outside of the Authorized Uses requires additional rights from the Licensor.