

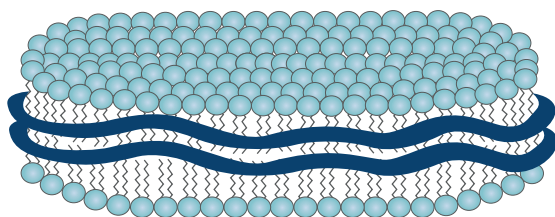
Collaborating with

**AdipoGen**®  
LIFE SCIENCES

Lipodisq™ Technology

## Compounds powered by **Lipodisq™**

Lipodisq™ are novel lipid/polymer nanoparticles that have been developed as mimics of naturally-occurring high-density lipoproteins (HDL). Lipodisq™ particles are in the size range of 11 to 40 nm in diameter enabling enhanced penetration and diffusion into membranes. **These nanodisc lipid particles are composed of a hydrophilic shell and hydrophobic core in which hydrophobic active agents can be carried and protected.**



**FIGURE:** Nanoparticle (11-40 nm) drug delivery system comprising a discoidal phospholipid bilayer membrane stabilized by an annular chaperone molecule.

The size and shape of the chaperone molecule is a critical factor in Lipodisq™ formation and also defines the properties of the particle, i.e. particle size and/or its biodegradability. Internal properties of the phospholipid membrane support the disposition and stabilization of drug molecule candidates and preserve the native conformation of membrane-bound molecules. The resulting encapsulated actives are rendered water-soluble and optimized for intracellular penetration/delivery via endosomal uptake mechanisms.

### LITERATURE REFERENCES

Responsive Hydrophobically Associating Polymers: A Review of Structure and Properties: S.R. Tonge & B.J. Tighe; *Adv. Drug Deliv. Rev.* **53**, 109 (2001) • Detergent-free formation and physico-chemical characterization of nanosized lipid-polymer complexes: Lipodisq; M.C. Orwick, et al.; *Angew. Chem.* **51**, 4653 (2012) • The styrene-maleic acid copolymer: a versatile tool in membrane research: J.M. Doerr, et al.; *Eur. Biophys. J.* **45**, 3 (2016) • Effects of charged lipids on the physicochemical and biological properties of lipid-styrene maleic acid copolymer discoidal particles: M. Tanaka, et al.; *Biochim. Biophys. Acta. Biomembr.* **1862**, 183209 (2020) • Physico-chemical Characterization, Toxicity and In Vivo Biodistribution Studies of a Discoidal, Lipid-Based Drug Delivery Vehicle: Lipodisq Nanoparticles Containing Doxorubicin: M.L. Torgersen, et al.; *J. Biomed. Nanotechnol.* **16**, 41 (2020)

**Ready-to-use  
Nano-formulated  
Clear and Sterile  
Aqueous Solutions of  
Active Compounds**



Lipodisq™ Control



Curcumin powered by Lipodisq™



Melatonin powered by Lipodisq™

**Not for cosmetic, diagnostic or therapeutic human or veterinary use!**

**For more Products see  
Backcover**

## Compounds powered by Lipodisq™ Features

- Actives in Lipodisq™ are biosynthetic water-soluble nanodiscs prepared under SOPs using selected optimized lipid compositions for stable, high-loading capacity of encapsulated active ingredients.
- Actives in Lipodisq™ are detergent-free nano-formulations made of styrene-maleic acid copolymer-lipid particles (SMALP).
- Actives in Lipodisq™ retain the biological activity of the active compound with enhanced bioavailability.
- Lipodisq™ solutions show a good safety profile and are suitable for *in vitro* and *in vivo* investigations.

## SPECIAL Features of Innaxon Compounds powered by Lipodisq™

- >10<sup>11</sup> particles per ml as determined by Dynamic Light Scattering (DLS).
- Tested in cell culture (human macrophage cell line as tested by MTT viability test).
- Formulations are soluble in water, PBS, Tris and other physiological solutions as formulated in a proprietary, thermostable, aqueous lipid nanoparticulate formulation.
- Formulations are certified sterile solutions with a physiological pH range.

## Selection of Antiviral and Immunomodulating Compounds powered by Lipodisq™: NEW Ready-to-use Nano-formulated Aqueous Solutions (1 mg/ml)

### Lipodisq™ Control Sterile Solution

IAX-700-100 (contains empty lipid nanoparticles) 1 ml

### Curcumin (high purity) powered by Lipodisq™ Sterile Solution

IAX-700-101 1 ml

### Melatonin powered by Lipodisq™ Sterile Solution

IAX-700-102 1 ml

### Metformin powered by Lipodisq™ Sterile Solution

IAX-700-103 1 ml

### Oxyresveratrol powered by Lipodisq™ Sterile Solution

IAX-700-104 1 ml

### Resveratrol powered by Lipodisq™ Sterile Solution

IAX-700-105 1 ml

### Umifenovir powered by Lipodisq™ Sterile Solution

IAX-700-106 1 ml

### Dexamethasone powered by Lipodisq™ Sterile Solution

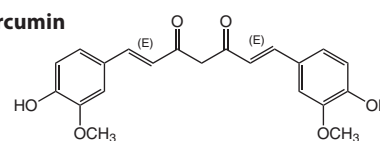
IAX-700-107 1 ml

### Ambroxol powered by Lipodisq™ Sterile Solution

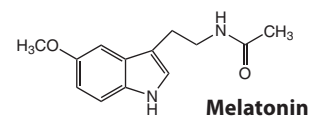
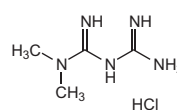
IAX-700-108 1 ml

**LEGAL CLAIM:** The use of styrene maleic acid copolymer-phospholipid nanoparticles (Lipodisq™ Technology) and active agents contained therein is covered by one or more of the following patents owned by Malvern Cosmeceuticals Limited: AU2006253886, CA2611144, CN101184473B, EP1890675, GB2426703, IN261468, JP5142898, US8623414 and WO/2021/005340A1 pending.

**Curcumin**

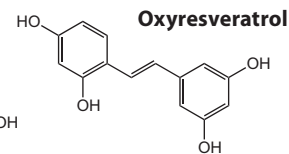


**Metformin**

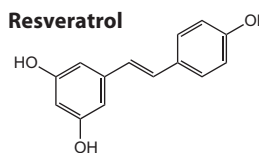


**Melatonin**

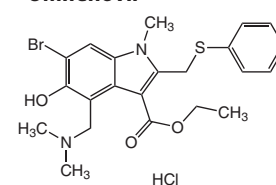
**Oxyresveratrol**



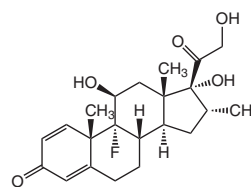
**Resveratrol**



**Umifenovir**



**Dexamethasone**



**Ambroxol**

