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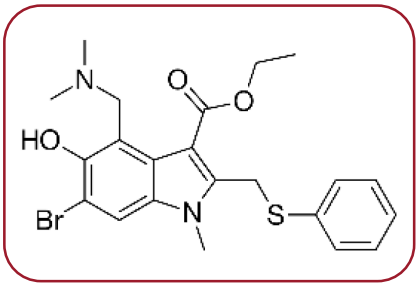

PRODUCT DATA SHEET

Umifenovir powered by Lipodisq™ Sterile Solution

Nano-formulated aqueous solution: Ready-to-use

Cat. No.: IAX-700-106 **Lot. No.:**

Synonyms	Ethyl 6-bromo-4-[(dimethylamino)methyl]-5-hydroxy-1-methyl-2(phenylsulfanylmethyl)indole-3-carboxylate, arbidol in a detergent-free nano-formulation made of styrene-maleic acid lipid particles (SMALP)
Empirical Formula	$C_{22}H_{25}BrN_2O_3S$. HCl
Concentration	1mg/ml (0.1% w/vol)
Size	1ml
MW	477.4 . 36.5
CAS	131707-23-8
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 umifenovir is soluble in DMF, DMSO or ethanol.
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 yellow coloured clear aqueous solution
Handling	Keep sterile. Avoid skin and eye contact. If the solution is not clear, then pre-warm (~40°C) solution.
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. For long-term storage between -15 and -25°C.
Stability	12 months after receipt (unopened and as supplied)
MSDS	Available on request

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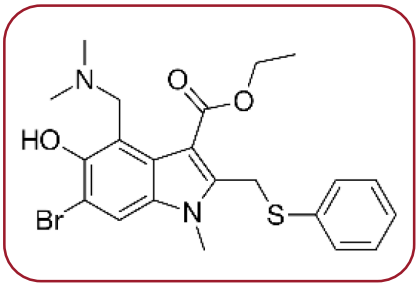

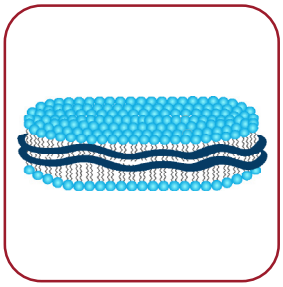

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General Information

- Umifenovir (Arbidol) is known to have broad-spectrum anti-viral activity and has earlier been approved in China and Russia for treating influenza, SARS, and Lassa viruses. It has been tested in multiple clinical studies as a candidate for use as an anti-COVID19 therapeutic and has been suggested to act at the entry stage and at the post-entry stages by preventing viral attachment and inhibiting the release of virus particles from intracellular vesicles, respectively.
- In a recent phase III, clinical study Umifenovir met the primary and secondary endpoint criteria. It has been shown to efficacious, safe and well-tolerated at the tested dosage.

Umifenovir References

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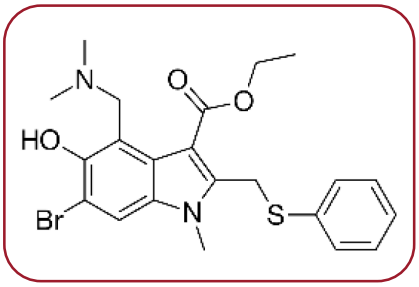

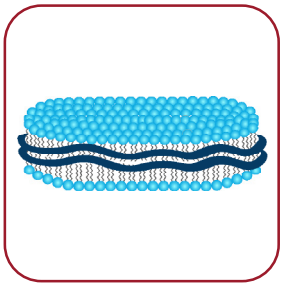

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Lipodisq™ Technology

- 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
Umifenovir hydrochloride	1mg/ml	131707-23-8	680-680-9

Lipodisq™ References

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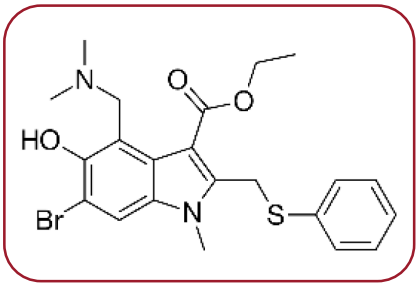

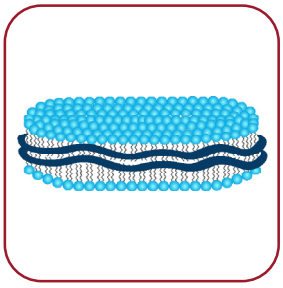

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