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Product Information

Lipodisq® Styrene:Maleic Anhydride Copolymer 3:1

Catalog Number **L9045**
Storage Temperature –20 °C

Product Description

Membrane proteins have historically proven to be a technically difficult class of proteins to study. This is primarily due to the difficulty of maintaining their solubility, stability, and function outside of their original hydrophobic and lipophilic contexts, in standard aqueous experimental conditions. Several experimental methodologies, such as Nanodisc technology, have been developed to enable the study of isolated membrane proteins in more conventional hydrophilic laboratory environments. Polymers of styrene and maleic acid (SMA) have emerged as an additional tool to facilitate the solubilization of membrane proteins.[1-4]

Lipodisq® polymers contain styrene and maleic acid monomer units. Lipodisq polymers may be used to form nano-sized discoidal particles that are suitable for incorporation of membrane proteins.[5,6] Lipodisq polymers can solubilize commonly used lipids, e.g. dimyristoylphosphatidylcholine (DMPC), without the use of detergents.[7] In general, Lipodisq polymers are potentially useful in mitigating the use of detergents for solubilization of membrane proteins.[1,7-9]

This product is the anhydride form of the SMA polymer, with the styrene and maleic acid monomers present in the polymer in a 3:1 ratio. Dissolving this product in an aqueous solution, with sufficient base (e.g. KOH, NaOH), causes hydrolysis of each anhydride moiety into two carboxylic acid/carboxylate groups. This action renders the SMA polymer soluble in aqueous media.

Product Profile

Functional pH range: 6.0–9.0
M_w (weight average): ~9,500 Da
M_n (number average): ~3,050 Da

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

References

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