Product Datasheet

Anti-Mesothelin/CD3 bispecific mRNA-LNP (orb2719937)

Catalog Number	orb2719937
Description	Mesothelin (or MSLN), encoded by the MSLN gene, is a glycosylphosphatidylinositol-linked membrane glycoprotein. This glycoprotein is expressed on the cell surface of mesothelioma and is overexpressed in a variety of human tumors, including mesothelioma, ovarian, pancreatic, lung adenocarcinoma, and cholangiocarcinoma. Mesothelin binds to MUC16, and this interaction may promote tumor engraftment and peritoneal spread through cell adhesion. A 64 amino acid region (residues 296-359) at the N-terminal of cell surface mesothelin has been identified as the functional binding domain (termed IAB) of MUC16. Mesothelin acts as a functional partner of MUC16 in cancer development. Therefore, mesothelin can be used as a tumor marker or as an antigenic target for therapeutic cancer vaccines. A human anti-mesothelin CAR has been constructed consisting of a human mesothelin-specific single-chain antibody variable fragment (P4 scFv) conjugated to a T-cell signaling domain. In human T cells cultured with mesothelin-expressing tumors, P4 CAR expression resulted in proinflammatory cytokine production, degranulation, and efficient cytolytic function and killing of mesothelin-negative cancer cells. This product is designed as a tool for the delivery and expression of anti-Meso P4 scFv/CD3 mutant Fc mRNA for research. The product leverages the lipid nanoparticle (LNP) technology platform for simple and efficient delivery of anti-Meso P4 scFv/CD3 mutant Fc mRNA to a variety of mammalian cells in vitro and in vivo. The LNPs used are formulated with SM-102, DSPC, cholesterol and DMG-PEG2000 at an optimal molar concentration for a high rate of encapsulation and efficient mRNA delivery. The anti-Meso P4 scFv/CD3 mutant Fc in this product is approximately 70 kD and consists of anti-Meso P4 scFv (single-chain variable fragment), mutant human Fc and CD3ze signaling domains. The full-length amino acid sequence of anti-Meso P4 scFv/CD3 mutant Fc mRNA-LNP product is available upon request.
Conjugation	Unconjugated
Form/Appearance	mRNA-LNPs suspended in PBS (-Ca, -Mg) (pH: 7.0-7.4).
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

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Note	For research use only
Application notes	Upon receiving product, briefly pulse spin before opening to ensure product is at bottom of container. It is important not to spin for too long as this may rupture mRNA-LNPs. Do not vortex. Work with mRNA-LNPs on ice and minimize the time that the product spends at room temperature. After handling the product during experiments, return immediately to ice. mRNA-LNP products should only be handled with certified RNase-free reagents and consumables. Use of filtered pipette tips is highly recommended.
Expiration Date	12 months from date of receipt.

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