Product Datasheet

Anti-CD47/CD3 bispecific mRNA-LNP (orb2719897)

Description

CD47 (cluster of differentiation 47), also known as integrin-associated protein (IAP), is a transmembrane protein belonging to the immunoglobulin superfamily. Encoded by the CD47 gene, this integrin-associated protein is a cell surface ligand that acts as a chaperone for membrane integrins and plays an integral role in various immune responses and autoimmunity. CD47 is ubiquitously expressed in many cell types; therefore, its function varies in each cell type. CD47 binds the ligands thrombospondin-1 (TSP-1) and signal regulatory protein alpha (SIRPÎ±). TSP-1 plays a role in the regulation of basic cellular functions by binding to CD47, including cell migration and adhesion, cell proliferation or apoptosis, and regulation of angiogenesis and inflammation as well. The CD47/SIRPÎ± interaction plays a role in a variety of cell-cell responses, including inhibition of phagocytosis, stimulation of cell-cell fusion, and T cell activation. High levels of CD47 enable cancer cells to avoid phagocytosis despite high levels of calreticulin, the main phagocyte signal. This is because SIRP-Î±/CD47 interaction leads to inhibition of phagocytosis. CD47 is therefore a "don't eat me" signal that can be blocked with antibodies to it, an ideal immunotherapy tool. This product is designed as a tool for the delivery and expression of anti-CD47 scFv/CD3 mutant Fc mRNA for research. The product leverages the lipid nanoparticle (LNP) technology platform for simple and efficient delivery of anti-CD47 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-CD47 scFv/CD3 mutant Fc in this product is approximately 70 kD and consists of anti-CD47 scFv (single-chain variable fragment), mutant human Fc and CD3ze signaling domains. The full-length amino acid sequence of anti-CD47 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.

Note

For research use only

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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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