

Product Datasheet

Anti-BCMA CAR-T2A-mbIL-15 mRNA-LNP (orb2719921)

Catalog Number orb2719921

Category Proteins

Description BCMA (B cell maturation antigen), also known as CD269, TNFRSF-17, is an ideal target antigen for novel multiple myeloma therapy due to its highly selective expression in malignant plasma cells. BCMA is a cell surface receptor of the TNF receptor superfamily that recognizes B cell activators and is encoded by the human TNFRSF17 gene. This receptor is preferentially expressed on mature B lymphocytes and is important for B cell development and autoimmune responses. This receptor has been shown to specifically bind tumor necrosis factor (ligand) superfamily member 13b (TNFSF13B/TALL-1/BAFF), thereby activating NF- κ B and MAPK8/JNK. For targeting BCMA, chimeric antigen receptor (CAR)-modified T-cell therapy is one of the most common treatment modalities. Interleukin-15 (IL-15), encoded by the IL15 gene, is a member of the four α -helix bundle family of cytokines. Like IL-2, IL-15 binds to and signals through a complex consisting of the IL-2/IL-15 receptor beta chain (CD122) and common gamma chains (γ -C, CD132). IL-15 regulates the activation and proliferation of T cells and natural killer (NK) cells. As an inhibitor of the apoptotic pathway, IL-15 inhibits T lymphocyte apoptosis by inducing Bcl-2 and/or Bcl-xL. In preclinical models, IL-15 has been shown to enhance antitumor immunity of CD8+ T cells. This product is designed as a tool for the delivery and expression of anti-BCMA scFv plus IL-15 TM-CYTO mRNA for research. The product leverages the lipid nanoparticle (LNP) technology platform for simple and efficient delivery of anti-BCMA scFv-T2A-IL-15 TM-CYTO 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-BCMA-T2A-IL-15 TM-CYTO in this product is approximately 70 kD and consists of anti-BCMA scFv and IL-15 TM-CYTO sequence with a T2A self-cleaving peptide (18 amino acids) in between, and the sequence is available upon request.

Form/Appearance mRNA-LNPs suspended in PBS (-Ca, -Mg) (pH: 7.0-7.4).

Biorbyt Ltd.

7 Signet Court, Swann Road
Cambridge
CB5 8LA
United Kingdom

Email: info@biorbyt.com, support@biorbyt.com
Phone: +44 (0)1223 859353 | Fax: +1 (415) 651-8558

Biorbyt LLC

68 TW Alexander Drive
Research Triangle Park
Durham
NC 27713
United States

Email: info@biorbyt.com, support@biorbyt.com
Phone: +1 (415) 906-5211 | Fax: +1 (415) 651-8558

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.

Storage

4°C; ice

Note

For research use only

Biorbyt Ltd.

7 Signet Court, Swann Road
Cambridge
CB5 8LA
United Kingdom

Email: info@biorbyt.com, support@biorbyt.com

Phone: [+44 \(0\)1223 859353](tel:+44(0)1223859353) | Fax: [+1 \(415\) 651-8558](tel:+1(415)651-8558)

Biorbyt LLC

68 TW Alexander Drive
Research Triangle Park
Durham
NC 27713
United States

Email: info@biorbyt.com, support@biorbyt.com

Phone: [+1 \(415\) 906-5211](tel:+1(415)906-5211) | Fax: [+1 \(415\) 651-8558](tel:+1(415)651-8558)