OLIGODEOXYNUCLEOTIDES
RABBIT CpG DNA
prototype ODN 2007

Catalog nr HC4038 (lot number and expiry date are indicated on the label)

Description ODN 2007 is a prototype of CpG oligodeoxynucleotides (ODN) that is able to stimulate rabbit PBMC in vitro. The vertebrate immune system has evolved innate immune defense pattern recognition receptors (PRRs) that detect unmethylated cytosine-phosphate-guanine (CpG) motifs within bacterial DNA. Cellular activation by CpG motifs occurs via the Toll signal pathway. The Toll-like receptor-9 (TLR9, CD289) appears to be a major component of the CpG-DNA receptor, acting by direct binding to CpG-DNA, which triggers the induction of cell signaling pathways including the mitogen activated protein kinase (MAPKs) and NFκB, leading to stimulation of various cells of the immune system. The human TLR9 is expressed in B cells and plasmacytoid dendritic cells (PDC). Mice also express TLR9 in the myeloid compartment. Optimal sequences for activating TLR9 vary among species. Synthetic ODN contain CpG-DNA motifs mimicking the immunostimulatory effects of bacterial DNA and can, therefore, be used as immunoprotective agents, vaccine adjuvants and anti-allergic agents. CpG ODN also affects immune tolerance and autoimmunity. Different classes of CpG ODN are characterized each with distinct effects on the immune response: CpG-A (‘D’-type), CpG-B (‘K’-type), and CpG-C. This CpG is a 22-mer ODN that is able to modulate the immune response in rabbit PBMC in vitro. It has the following sequence: 5’-tcgctgctgctgctgctg-3’. Regular letters represent phosphorothioate linkage and bold letters represent CpG dinucleotides.

Formulation Approximately 200 nmol lyophilized, purified 22-mer CpG ODN. The exact amount is indicated on the label. Endotoxin levels are undetectable. Reconstitute the vial by injection of distilled or deionized water, volume depending on the concentration to be used.

Application CpG-DNA can be used in biological assays in vitro to activate rabbit cells. Furthermore, CpG-DNA can be used as an immune modulating agent.

Use For in vitro stimulation, 0.05 to 3 µM can be used. It is recommended that users test the reagent and determine their own optimal concentrations.

Storage and stability Lyophilized product should be stored at 4°C. Store stock solution in aliquots at –20°C. Repeated freeze and thaw cycles will cause loss of activity. Under recommended storage conditions, product is stable for one year.

Precautions For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and Federal rules in the use of this product. Hbt is not responsible for any patent infringements that might result with the use of or derivation of this product.

2. Ioannou, X et al; Safety and efficacy of CpG-containing oligodeoxynucleotides as immunological adjuvants in rabbits. Vaccine 2003, 21: 4368

Also available HC4034 Non-CpG DNA; 200 nmol
HC4037 Human and mouse CpG-A oligodeoxynucleotides, prototype ODN 2216; 200 nmol
HC4039 Human and mouse CpG-B oligodeoxynucleotides, prototype ODN 2006; 200 nmol
HC4040 Rat CpG-B oligodeoxynucleotides; 200 nmol
HC4041 Human and mouse CpG-C oligodeoxynucleotides, prototype ODN 2395; 200 nmol
HC4042 Non-CpG DNA (rabbit), prototype ODN 2041; 200 nmol
HM2087 Monoclonal antibody against human TLR9 (CD289), clone 5G5