Product Datasheet

ODN 2007

Catalog No. **BP-08855** · CAS **455348-63-7** · Form **free base** · Physical state **solid** · Color **White to off-white** · Version **1.0** · Revision **2026-11-16**

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Target	Research area
Toll-like Receptor (TLR); IFNAR; ERK; Akt; Interleukin Related; NO Synthase; CCR; HSP	**Infection; Inflammation/Immunology**

Molecular formula	—
Molecular weight	—

STRUCTURE

DESCRIPTION

ODN 2007 is an immunostimulatory CpG oligodeoxynucleotide. ODN 2007 activates TLR21 (the chicken homolog of TLR9), triggering innate signaling. ODN 2007 induces CpG motif-specific, dose-dependent 2'5'-A synthetase. ODN 2007 stimulates lymph node IFN-α/IFN-γ secretion. ODN 2007 binds Hsp90α, activates ERK2/AKT, and induces Th1 cytokine/chemokine mRNA (IL-6, MIP-3α) and NO. ODN 2007 can be used in research on Escherichia coli infection .

BIOLOGICAL ACTIVITY

In avian macrophage models (MQ-NCSU, HD11), treatment with ODN 2007 (1-5 μg/mL) upregulated IFN-γ, IFN-β, and IL-1β mRNA levels. In HD11 cells, 10 μg/mL of the compound triggered ERK2/AKT phosphorylation, NO production, and the upregulation of IL-6 and MIP-3α
In studies using Zebrafish (Danio rerio), ODN 2007 demonstrates protective effects against bacterial infection. Administration of the compound increases the survival rate of zebrafish challenged with Vibrio vulnificus

SOLUBILITY

H2O

In vitro	H2O : 20 mg/mL

REFERENCES

[1]. Lin SY, et al. Induction of Robust Immune Responses by CpG-ODN-Loaded Hollow Polymeric Nanoparticles for Antiviral and Vaccine Applications in Chickens. International journal of nanomedicine. 2020;15:3303-3318.

[2]. Nichani AK, et al. CpG oligodeoxynucleotide induction of antiviral effector molecules in sheep. Cellular immunology. 2004 Jan;227(1):24-37.

[3]. Zhang Y, et al. CpG ODN 2006 and IL-12 are comparable for priming Th1 lymphocyte and IgG responses in cattle immunized with a rickettsial outer membrane protein in alum. Vaccine. 2003 Jul 04;21(23):3307-18.

[4]. Bhat A, et al. Role of Hsp90 in CpG ODN mediated immunostimulation in avian macrophages. Molecular immunology. 2010 Mar;47(6):1337-46.

Tel: +86 20 31130026 · Fax: +86 20 36822386 · tech@biochemprobe.com · www.biochemprobe.com
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