

ODN 1668

Chemical Properties

CAS No. : 1186063-66-0

Formula:

Molecular Weight: 6364.1

Store under nitrogen,Keep away from moisture

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	ODN 1668 is an immunostimulatory class B CpG oligodeoxynucleotide (ODN) containing an intact thio backbone of one or more CpG dinucleotides, which is primarily used as an agonist for Toll-like receptor 9 (TLR9), and also upregulates the level of IgM and induces an antimicrobial immune response via a CaTLR9-dependent pathway.
Targets(IC50)	Antibacterial,TLR
In vitro	Treatment of mouse bone marrow-derived macrophages with ODN 1668 (6-60 µg/mL, 12-72 hours) increased the production of S100A8/A9, IL-6, and β-galactosidase. [1] Treatment of anti-CD3-treated CD8+ T cells with ODN 1668 (0.3-3.0 µM, 4 days) promoted cell growth in a dose-dependent manner. [2] Treatment of head kidney lymphocytes with ODN 1668 (0.25-32 µg/mL, 12 hours) promoted the proliferation of head kidney lymphocytes and enhanced the expression of immune genes. [3]
In vivo	Treatment of male Wistar rats (175-200 g) with ODN 1668 (1, 5 mg/kg, intraperitoneal and subcutaneous) induced moderate fever and anorexia, and induced a significant increase in IL-6.[4]

Solubility Information

Solubility	H2O: 20 mg/mL (3.14 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.1571 mL	0.7857 mL	1.5713 mL
5 mM	0.0314 mL	0.1571 mL	0.3143 mL
10 mM	0.0157 mL	0.0786 mL	0.1571 mL
50 mM	0.0031 mL	0.0157 mL	0.0314 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Rattanaprukskul K, et al. TLR9 Mediates Periodontal Aging by Fostering Senescence and Inflammaging. *J Dent Res.* 2022 Dec;101(13):1628-1636.

Lipford GB, et al. CpG-containing synthetic oligonucleotides promote B and cytotoxic T cell responses to protein antigen: a new class of vaccine adjuvants. *Eur J Immunol.* 1997 Sep;27(9):2340-4.

Chen X, et al. CpG ODN 1668 as TLR9 agonist mediates humpback grouper (*Cromileptes altivelis*) antibacterial immune responses. *Fish Shellfish Immunol.* 2023 Jul;138:108839.

Damm J, et al. Intraperitoneal and subcutaneous injections of the TLR9 agonist ODN 1668 in rats: brain inflammatory responses are related to peripheral IL-6 rather than interferons. *J Neuroimmunol.* 2014 Dec 15;277(1-2):105-17.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481