Miltenyi Biotec

ODN 1826 Ready-to-use

Order no. 130-109-374
Order no. 130-109-373

Contents

1. Description

This product is for research use only.

Components	**130-109-374:** 5× 100 µg ODN in 50 µL sterile, physiological NaCl solution or **130-109-373:** 20× 100 µg ODN in 50 µL sterile, physiological NaCl solution.
Description	Murine B-class CpG oligodeoxyribonucleotide (ODN).
Product format	Fully reconstituted without carrier protein or preservatives. Sterile filtered; always handle under aseptic conditions.
Sequence	dT*dC*dC*dA*dT*dG*dA*dC*dG*dT*dT*dC*dC*dT*dG*dA*dC*dG*dT*dT * Phosphorothioate backbone
Endotoxin level	Low endotoxin (<1 EU/mg) as determined by kinetic Limulus Amebocyte Lysate (LAL) assay.
Storage	Store in aliquots at –20 °C. Aliquots are stable for 6 months. Avoid repeated freeze-thaw cycles. The expiration date is indicated on the vial label.

2. Background information

TLR9 is a prominent member of the toll-like-receptor (TLR) family recognizing pathogen-associated molecular patterns. TLR9 recognizes specifically unmethylated CpG motifs in bacterial DNA leading to activation of immune cells[1,2]. These effects can be mimicked by short synthetic ODNs containing unmethylated CpG motifs[3]. Several classes of CpG ODNs have been identified and can be distinguished by their effects on certain cell types[4]. A-class ODNs containing 5' and 3' G-rich stretches induce high levels of type I IFN but show low induction of B cell proliferation[5]. B-class ODNs activate B cells and TLR9-dependent NF-κB signaling in recombinant cell lines but show low induction of IFN-α. C-class ODNs induce high amounts of IFN-α and activate B cells[6]. The recently discovered P-Class ODNs show similar but superior properties to C-class ODNs.[7]
ODN 1826 Ready-to-use is a B-class ODN that strongly activates murine TLR9.

3. Applications

3.1 General applications

- CpG ODNs can be used for activation of immune cells, such as human peripheral blood mononuclear cells (PBMCs), murine splenocytes, or isolated immune cells (e.g., B cells and plasmacytoid dendritic cells).
- CpG ODNs can be used to activate signaling in TLR9-expressing recombinant cell lines.

3.2 Specific applications

- Murine B-class ODNs have been extensively used as adjuvant for *in vivo* vaccination strategies to improve vaccine-specific antibody[5] responses via strong activation of TLR9 in mice[8-11]. ODN 1826 has been shown to function as a very efficient adjuvant alone[11-13] or in combination with other types of adjuvant[11,14-16] via different routes of administration[10].

4. Instructions for use

After thawing vortex the solution and spin down.

100 µg ODN in 50 µL sterile, physiological NaCl solution is equivalent to a concentration of 314 µM.

The working concentration in mice ranges from 10–20 µg[11,12,14,15] to 50 µg[12] or up to 100 µg[14].

Recommended concentrations for cell culture use are

for murine immune cells: 0.05–2 µM

for recombinant cell lines: 0.05–10 µM

▲ An excessively high concentration of ODNs may result in decreased activity. Therefore, the optimal concentration range should be determined for individual assay systems.

5. References

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Miltenyi Biotec B.V. & Co. KG
Friedrich-Ebert-Straße 68, 51429 Bergisch Gladbach, Germany
Phone +49 2204 8306-0, Fax +49 2204 85197
macsde@miltenyi.com
www.miltenyibiotec.com

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16. Kumar, S. *et al.* (2004) CpG oligodeoxynucleotide and Montanide ISA 51 adjuvant combination enhanced the protective efficacy of a subunit malaria vaccine. Infect. Immun. 72: 949–957.

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