Miltenyi Biotec

# ODN 2088 Control (ODN 20959)

Order no. 130-105-818
Order no. 130-105-814

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## 1. Description

| | |
|---|---|
| **Components** | **130-105-818:**<br>200 µg lyophilized ODN<br>1 mL 1× TE Buffer<br>or<br>**130-105-814:**<br>1 mg lyophilized ODN<br>1 mL 1× TE Buffer. |
| **Description** | TLR7/8 antagonist, TLR9 antagonist control. |
| **Product format** | Lyophilized product without carrier protein or preservatives. |
| **Sequence** | dT*dA*dA*dT*dG*dG*dC*dG*dG*dG*dG*dA*dA*dG*dT<br>* Phosphorothioate backbone |
| **Endotoxin level** | Low endotoxin (<1 EU/mg) as determined by kinetic Limulus Amebocyte Lysate (LAL) assay. |
| **Storage** | Store lyophilized product at –20 °C. Upon reconstitution, aliquots should be stored at –20 °C and are stable for 6 months. Avoid repeated freeze-thaw cycles. The expiration date is indicated on the vial label. |

## 2. Background information

TLR7, TLR8, and TLR9 are prominent members of the toll-like-receptor (TLR) family which recognize nucleic acids as pathogen-associated molecular patterns.[3] Activation of these TLRs can be inhibited by short single-stranded synthetical oligodeoxyribonucleotides (ODNs).[4,6] Several classes of and motifs for inhibitory ODN have been identified.[1,6,7]

## 3. Applications

### 3.1 General applications

- TLR7/8/9 antagonists can be used to inhibit TLR7/8/9-mediated cellular responses, such as activation of immune cells, human PBMCs, murine splenocytes, or isolated immune cells, e.g., B cells and pDCs.
- TLR7, TLR8, or TLR9 antagonists can be used to inhibit signaling in TLR7/8/9-expressing recombinant cell lines.

### 3.2 Specific applications

- ODN 2088 Control (ODN 20959) can be used as a sequence control for ODN 2088.[1,2,4-7] ODN 2088 Control (ODN 20959) inhibits TLR7- and TLR8-mediated signaling but not TLR9-mediated signaling[1] and forms tertiary structures (G tetrads).

## 4. Instructions for use

### 4.1 Recommended concentrations

Recommended concentrations for use are

for human and murine immune cells: 0.05–5 µM

for recombinant cell lines: 0.05–10 µM

The optimal concentration range needs to be tested for individual assay systems.

### 4.2 Reconstitution protocol

1. Spin down pellet.
2. a) For 200 µg lyophilized ODN:
   To obtain a 200 µM solution resuspend pellet in 203 µL of 1× TE Buffer.
   ▲ **Note:** Alternatively, PBS or water can be used for reconstitution.

   b) For 1 mg lyophilized ODN:
   To obtain a 200 µM solution resuspend pellet in 1016 µL of 1× TE Buffer.
   ▲ **Note:** Alternatively, PBS or water can be used for reconstitution.
3. Vortex and incubate overnight at 4 °C.
4. Store aliquots at –20 °C.


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## 5. References

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2. Jurk, M. *et al.* (2006) Modulating responsiveness of human TLR7 and 8 to small molecule ligands with T-rich phosphorothiate oligodeoxynucleotides. Eur. J. Immunol. 36: 1815–1826.
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4. Krieg, A. M. *et al.* (1998) Sequence motifs in adenoviral DNA block immune activation by stimulatory CpG motifs. Proc. Natl. Acad. Sci. U. S. A. 95: 12631–12636.
5. Lenert, P. *et al.* (2001) CpG stimulation of primary mouse B cells is blocked by inhibitory oligodeoxyribonucleotides at a site proximal to NF-kappaB activation. Antisense Nucleic Acid Drug Dev. 11: 247–256.
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7. Stunz, L. L. *et al.* (2002) Inhibitory oligonucleotides specifically block effects of stimulatory CpG oligonucleotides in B cells. Eur. J. Immunol. 32: 1212–1222.

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