

ODN 2216

Cat. No.:	HY-150741	
CAS No.:	332437-00-0	
Molecular Weight:	6432	
Sequence:	DNA, d(G-sp-G-sp-G-G-G-A-C-G-A-T-C-G-T-C-G-sp-G-sp-G-sp-G-sp-G)	DNA, d(G-sp-G-sp-G-G-G-A-C-G-A-T-C-G-T-C-G-sp-G-sp-G-sp-G-sp-G)
Target:	Toll-like Receptor (TLR); IFNAR; Interleukin Related	
Pathway:	Immunology/Inflammation	
Storage:	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)	

BIOLOGICAL ACTIVITY

Description	ODN 2216 is a human-specific TLR9 (toll-like receptor 9) ligand or agonist. ODN 2216 induces high amounts of IFN- α and IFN- β . ODN 2216 induces IFN- α by pDC (plasmacytoid DC) and IL-12 (p40) production by DC (dendritic cells). ODN 2216 stimulates IFN- γ production in peripheral blood mononuclear cells (PBMC), which is indirect and mediated by IFN- α/β . ODN 2216 can activate NK cells and promote IFN- γ production of TCR-triggered CD4 ⁺ T cells ^{[1][2][3][4][5]} .									
IC₅₀ & Target	TLR9	IL-12								
In Vitro	<p>ODN 2216 (6 μg/mL, 9 days) drives Th1 development of naive CD4 T cells^[1]. ODN 2216 (2 μM, 15 h) significantly decreased apoptosis of thymic DC^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Apoptosis Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Thymic DC, pDC</td> </tr> <tr> <td>Concentration:</td> <td>2 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>15 h</td> </tr> <tr> <td>Result:</td> <td>Significantly decreased apoptosis of thymic DC (23.1 \pm 0.9%), and naturally induced apoptosis of thymic pDC was not decreased (72.8 \pm 2.9%).</td> </tr> </table>		Cell Line:	Thymic DC, pDC	Concentration:	2 μ M	Incubation Time:	15 h	Result:	Significantly decreased apoptosis of thymic DC (23.1 \pm 0.9%), and naturally induced apoptosis of thymic pDC was not decreased (72.8 \pm 2.9%).
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In Vivo	ODN 2216 induces T-cell mediated antitumor immune response in murine vaccination models ^[3] MCE has not independently confirmed the accuracy of these methods. They are for reference only.									

REFERENCES

- [1]. Krug A, et al. Identification of CpG oligonucleotide sequences with high induction of IFN-alpha/beta in plasmacytoid dendritic cells. *Eur J Immunol.* 2001 Jul;31(7):2154-63.
- [2]. Okada T, et al. Murine thymic plasmacytoid dendritic cells. *Eur J Immunol.* 2003 Apr;33(4):1012-9.
- [3]. Huang L, et al. CpG-based immunotherapy impairs antitumor activity of BRAF inhibitors in a B-cell-dependent manner. *Oncogene.* 2017 Jul 13;36(28):4081-4086.

[4]. He Y, et al. Hepatic mitochondrial DNA/Toll-like receptor 9/MicroRNA-223 forms a negative feedback loop to limit neutrophil overactivation and acetaminophen hepatotoxicity in mice. *Hepatology*. 2017 Jul;66(1):220-234.

[5]. Li Y, et al. A novel antagonist of TLR9 blocking all classes of immunostimulatory CpG-ODNs. *Vaccine*. 2011 Mar 3;29(11):2193-8.

Caution: Product has not been fully validated for medical applications. For research use only.

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