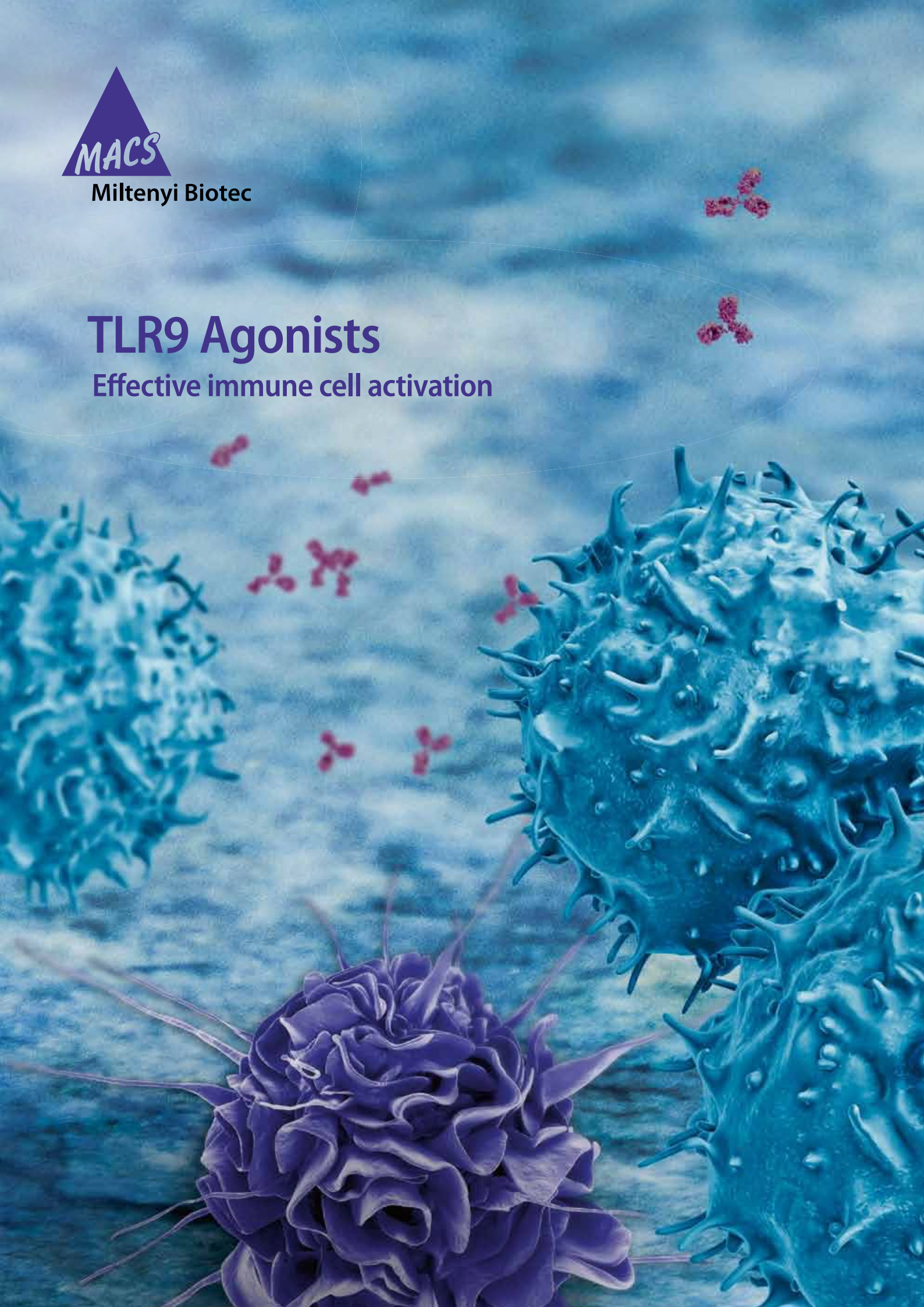




# TLR9 Agonists

Effective immune cell activation



# Quality TLR9 agonists

from the trusted provider of immune cell research tools

## Effective activation of pDCs and B cells

Toll-like receptors (TLRs) play a vital role in inflammatory and immune disorders, as well as cancer. In the early innate immune response to invading pathogens, TLRs are involved in sensing bacteria or viruses and associated endogenous danger signals.

## Oligonucleotide-based agonists of TLR9

TLR9 helps distinguish microbial from mammalian DNA, leading to immune cell activation. Synthetic oligodeoxyribonucleotides (ODNs) possessing unmethylated CpG motifs mimic the immune stimulatory effect of bacterial DNA, promoting TH1 and pro-inflammatory cytokine induction which facilitates maturation/activation of antigen-presenting cells.

Miltenyi Biotec provides a comprehensive selection of TLR9 agonists to support your dendritic cell and B cell research.

**Effective:** Potent and specific immune cell stimulation in human and mouse

**Highest quality:** Ultrapure, endotoxin-free

**Simple:** Easy handling, with buffers included

Benefit from our proven record of supporting immunologists and cancer scientists with quality research tools and comprehensive customer support.

See comprehensive performance data and get helpful information on choosing the right TLR9 agonist at [www.miltenyibiotec.com/canp](http://www.miltenyibiotec.com/canp)

## Choose the right TLR9 agonist

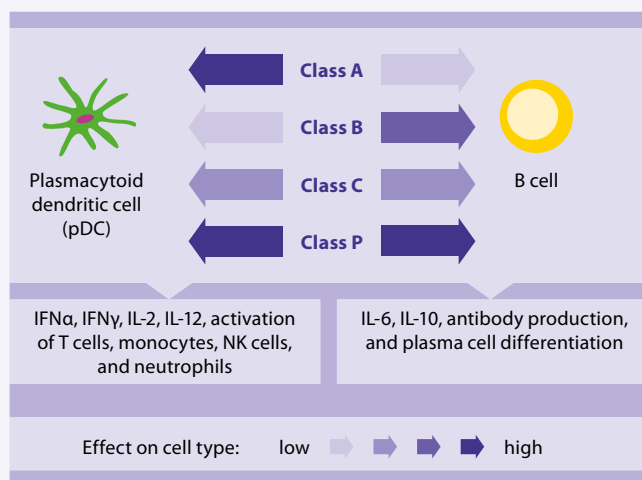
Four classes of TLR9 agonists have been identified which can be distinguished by their effects on specific cell types:

**A-Class:** Induces high levels of IFN- $\alpha$  and lower B cell activation.

**B-Class:** Utilized for B cell activation and NF- $\kappa$ B signaling pathways activation.

**C-Class:** Activates B cells and pDCs, and are employed in IFN- $\alpha$  induction.

**P-Class:** Activates both B cells and pDCs with higher efficiency than C-Class ODNs.

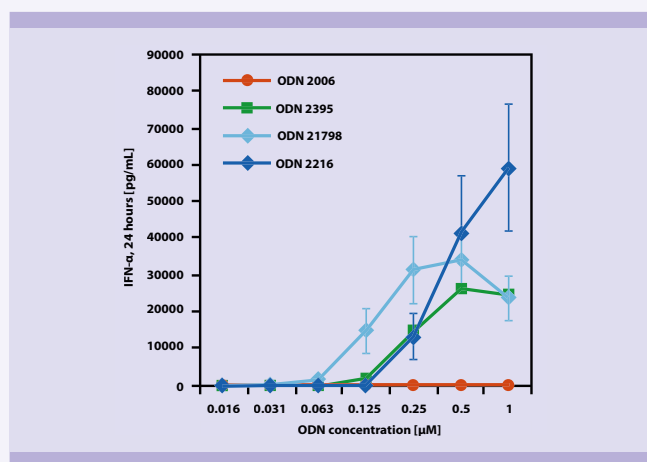


**Figure 1:** Summary of immune response activation profiles for TLR9 agonists.

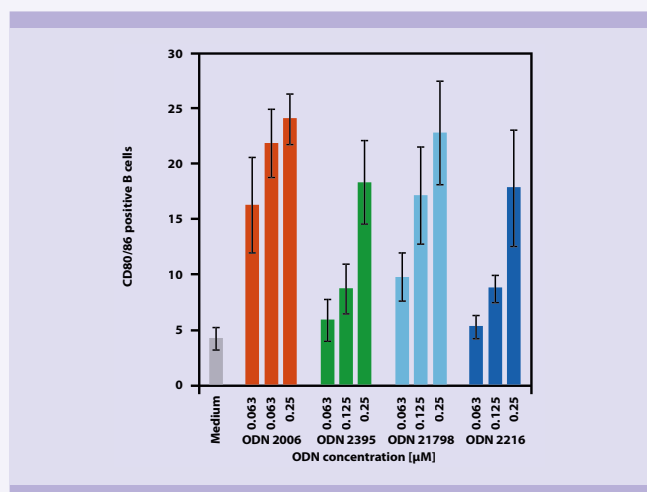


## Quality agonists for premium performance

TLR9 Agonists from Miltenyi Biotec provide unmatched performance in immune cell activation.



**Figure 2: Comparison of ODN classes and concentrations with respect to IFN-α induction.** Human PBMCs were incubated for 24 hours with the indicated amounts of ODNs. Read-out was performed by ELISA.



**Figure 3: Percentage of B cell activation with respect to ODN classes and concentrations.** Human PBMCs were incubated with ODNs in the indicated amounts for 48 hours and stained for CD19, CD80, and CD86, then analyzed by flow cytometry gated on viable CD19<sup>+</sup> B cells.

## Product information

Product*	Class	Size	Order no.
TLR9 Explorer	All classes and controls	8×100 μg	130-100-589
ODN 2216	A-Class	200 μg 1 mg	130-100-243 130-100-244
ODN 2216 Control (ODN 2243)	A-Class control	200 μg 1 mg	130-100-241 130-100-108
ODN 2006	B-Class	200 μg 1 mg	130-100-241 130-100-108
ODN 2006 Control (ODN 2137)	B-Class control	200 μg 1 mg	130-100-107 130-100-278
ODN 1982	B-Class	200 μg 1 mg	130-100-104 130-100-277
ODN 1826	B-Class	200 μg 1 mg	130-100-275 130-100-276
ODN 1826 Control (ODN 2138)	B-Class control	200 μg 1 mg	130-100-275 130-100-276
ODN 2395	C-Class	200 μg 1 mg	130-100-282 130-100-283
ODN 2395 Control (ODN 5328)	C-Class control	200 μg 1 mg	130-100-279 130-100-109
ODN 21798	P-Class	200 μg 1 mg	130-100-281 130-100-280
ODN 21798 Control (ODN 23098)	P-Class control	200 μg 1 mg	130-100-285 130-100-284

\*These products are supplied with resuspension buffer.



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