

# Product Datasheet

## CpG oligodeoxynucleotides with negative control, TLR9 ligand NBP2-26232

Unit Size: 2 Vials

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

[www.novusbio.com](http://www.novusbio.com)



[technical@novusbio.com](mailto:technical@novusbio.com)

Reviews: 1 Publications: 6

Protocols, Publications, Related Products, Reviews, Research Tools and Images at:  
[www.novusbio.com/NBP2-26232](http://www.novusbio.com/NBP2-26232)

Updated 10/23/2024 v.20.1

Earn rewards for product  
reviews and publications.

Submit a publication at [www.novusbio.com/publications](http://www.novusbio.com/publications)

Submit a review at [www.novusbio.com/reviews/destination/NBP2-26232](http://www.novusbio.com/reviews/destination/NBP2-26232)



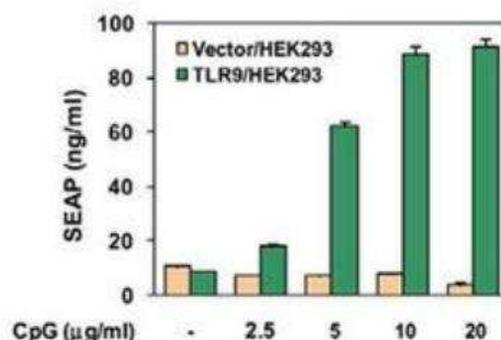
**NBP2-26232**

CpG oligodeoxynucleotides with negative control, TLR9 ligand

Product Information	
Unit Size	2 Vials
Concentration	Please see the protocols for proper use of this product. If no protocol is available, contact technical services for assistance.
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Buffer	Sterile water
Product Description	
Description	<p><b>Human Sequence CpG ODN (2006) Type B: 5'</b>  <i>T*C*G*T*C*G*T*T*T*T*G*T*C*G*T*T*T*T*G*T*C*G*T*T 3'</i></p> <p>(* Indicates a phosphorothioate modification)</p> <p><b>Negative Control oligo: 5' TGCTGCTTTTGTGCTTTTGTGCTT 3'</b></p> <p><b>Functionality:</b> This product is useful for the activation of TLR9 and the stimulation of TLR9 has been reported with 5-20 ug/ml.</p>
Species	Human
Specificity/Sensitivity	CpG ODN (2006) with negative control oligo, TLR9 ligand (human)
Kit Components	NBP2-31134: CpG oligodeoxynucleotides, NBP2-31135: Negative Control oligodeoxynucleotide Human
Product Application Details	
Applications	Ligand Activation
Recommended Dilutions	Ligand Activation 5 - 20 ug/ml
Application Notes	A TLR9/NF-kB SEAP reporter construct in a HEK 293 cell line was used as a model system for studying hTLR9 activation.

**Images**

CpG oligodeoxynucleotides with negative control, TLR9 ligand [NBP2-26232] - Validation of CpG using the TLR9/HEK 293 cell line. The assay was performed using the NF-kB SEAPorter Assay Kit. The Vector/HEK 293 and TLR9/HEK 293 cell lines were transfected with NF-kB/SEAP reporter plasmid for 16 h. Cells were stimulated with various amounts of CpG for 24 h followed by SEAP assay.



## Publications

Liu Y, Diamond SL. Activation of Most Toll-Like Receptors in Whole Human Blood Attenuates Platelet Deposition on Collagen under Flow *Journal of Immunology Research* 2023-01-17 [PMID: 36703865] (Block/Neutralize)

Karasawa T, Sato R, Imaizumi T et al. Expression of interferon-stimulated gene 20 (ISG20), an antiviral effector protein, in glomerular endothelial cells: possible involvement of ISG20 in lupus nephritis *Renal failure* 2023-12-01 [PMID: 37340981]

Min Ruan, Zun Zhang, Siyi Li et al. Increased expression of Toll-like receptor-9 has close relation with tumour cell proliferation in oral squamous cell carcinoma. *Arch Oral Biol.* 2011-09-01 [PMID: 21333270] (Human)

Valencia Pacheco GJ, Pinzon Herrera F, Cruz Lopez JJ et al. Expression and activation of intracellular receptors TLR7, TLR8 and TLR9 in peripheral blood monocytes from HIV-infected patients. *Colomb Med (Cali).* 2013-06-30 [PMID: 24892454] (Flow Cytometry Control)

Kusagaya H, Fujisawa T, Yamanaka K et al. Toll-like receptor-mediated airway IL-17C enhances epithelial host defense in an autocrine/paracrine manner. *Am. J. Respir. Cell Mol. Biol.* 2014-01-01 [PMID: 23944933] (In vitro, Human)

### Details:

TLR ligand treatment (primary normal human bronchial epithelial cells), Figs 1, S1. CpG-ODN was used at 10 ug/ml.

Gillaux C, Mehats C, Vaiman D et al. Functional screening of TLRs in human amniotic epithelial cells. *J Immunol.* 2011-09-01 [PMID: 21775685]

### Details:

TLR ligands: TLR1/2 (IMG-2201), TLR3 (IMG-2203), TLR4 (IMG-2204), TLR5 (IMG-2205), TLR6/2 (IMG-2206), TLR7 (IMG-2207), TLR9 (IMG-2209Hpt). The effects of ligand stimulation was measured by various readout assays, refer to the figures for details (Figs 2-8, S1).



## Procedures

### MSDS (NBP2-26232)

CpG oligodeoxynucleotides with negative control, TLR9 ligand:

#### Hazard Information

Chemical Name CPG ODN 2006 & Negative Control

Chemical Formula CpG ODN- 5' T\*C\*G\*T\*C\*G\*T\*T\*T\*T\*G\*T\*C\*G\*T\*T\*T\*T\*G\*T\*C\*G\*T\*T 3' (\* Phosphorothioate bonds)

CAS Number N/A

EEC-No N/A

#### First Aid Measures

Eye Contact May cause eye irritation.

Skin Contact May cause skin irritation. May be harmful if absorbed through the skin.

Inhalation May causes respiratory tract irritation. May be harmful if inhaled.

Ingestion May be harmful if swallowed.

#### Fire Fighting Measures

Special risks: N/A

Suitable Extinguish Media: Water spray, carbon dioxide, dry chemical powder or appropriate foam.

#### Accidental Release Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Consult a physician.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. **SPEEDY ACTION IS CRITICAL!**

Ingestion: If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel.

Never give anything by mouth to an unconscious person.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. **SPEED IS ESSENTIAL, OBTAIN MEDICAL AID IMMEDIATELY.** Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes: Consult a physician. Show this safety data sheet to the physician. Move away from the dangerous area.

#### Handling and Storage

Handling Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Avoid inhalation. Use personal protective equipment (i.e. impermeable gloves, lab coat or apron).

Store at -20 degrees C. Store in a tightly closed container. Stable under recommended storage conditions

#### Exposure Controls / Personal Protection

##### Physical and Chemical Properties

Form Powder

Color Colorless

Odor Odorless

Melting Point No data available

Boiling Temperature No data available

Density No data available

Vapor Pressure No data available

Solubility in Water Very soluble

Flash Point No data available

Explosion limits No data available

Ignition Temperature No data available

#### Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Materials to avoid: Strong oxidizing agents.

Hazardous Decomposition Products: Decomposition products are not hazardous.

HMIS Classification: Health Hazard 0, Flammability Hazard 0, Reactivity Hazard 0

NFPA Rating: Health Hazard 0, Fire 0, Reactivity Hazard 0.

#### Disposal Considerations

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Must not be disposed together with household garbage.

#### Other Information

The information contained in this material safety datasheet is believed to be accurate but it is the responsibility of the user or supplier to determine the applicability of these data to the formulation of necessary safety precautions. NOVUS shall not be held responsible for any damage resulting from the use of the above product or the information contained in this material safety data sheet.





### **Novus Biologicals USA**

10730 E. Briarwood Avenue  
Centennial, CO 80112  
USA  
Phone: 303.730.1950  
Toll Free: 1.888.506.6887  
Fax: 303.730.1966  
nb-customerservice@bio-techne.com

### **Bio-Techne Canada**

21 Canmotor Ave  
Toronto, ON M8Z 4E6  
Canada  
Phone: 905.827.6400  
Toll Free: 855.668.8722  
Fax: 905.827.6402  
canada.inquires@bio-techne.com

### **Bio-Techne Ltd**

19 Barton Lane  
Abingdon Science Park  
Abingdon, OX14 3NB, United Kingdom  
Phone: (44) (0) 1235 529449  
Free Phone: 0800 37 34 15  
Fax: (44) (0) 1235 533420  
info.EMEA@bio-techne.com

### **General Contact Information**

www.novusbio.com  
Technical Support: nb-technical@bio-techne.com  
Orders: nb-customerservice@bio-techne.com  
General: novus@novusbio.com

### **Limitations**

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Support products are guaranteed for 6 months from date of receipt.

For more information on our 100% guarantee, please visit [www.novusbio.com/guarantee](http://www.novusbio.com/guarantee)

Earn gift cards/discounts by submitting a review: [www.novusbio.com/reviews/submit/NBP2-26232](http://www.novusbio.com/reviews/submit/NBP2-26232)

Earn gift cards/discounts by submitting a publication using this product:  
[www.novusbio.com/publications](http://www.novusbio.com/publications)

