

# ORN Sa19

*S. aureus* 23S rRNA derived oligoribonucleotide; TLR13 ligand

Catalog code: tlr1-orn19

<https://www.invivogen.com/orn-sa19>

For research use only

Version 21L21-MM

## PRODUCT INFORMATION

### Contents

- 200 µg of lyophilized ORN Sa19
- 1.5 ml of endotoxin-free water

### Storage and stability

- ORN Sa19 is provided lyophilized and shipped at room temperature. Upon receipt, store at -20°C.
- Upon resuspension, store at -20°C. Resuspended product is stable for 6 months when properly stored. Avoid repeated freeze-thaw cycles.

### Quality Control:

- TLR13 activity has been confirmed using HEK-Blue™ mTLR13 cells.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

## DESCRIPTION

Toll-like receptor 13 is an endosomal murine TLR whose role and ligand remain unclear. Three independent teams have identified bacterial single-stranded RNA as a TLR13 ligand<sup>1-3</sup>. More precisely, a conserved 23S ribosomal RNA (rRNA) sequence, "CGGAAAGACC", was shown to induce cytokine production in a TLR13-, MyD88, and UNC93B-dependent manner. Interestingly, this rRNA sequence is the binding site of the macrolide-lincosamide-streptogramin (MLS) group of antibiotics, and 23S rRNA from bacteria resistant to these antibiotics is not recognized by TLR13<sup>1</sup>. Further, these data reveal a mechanism developed by bacteria to evade the host innate immune system through the acquisition of antibiotic resistance.

ORN Sa19 is a 19 mer *S. aureus* 23S rRNA derived oligoribonucleotide, stabilized by phosphorothioate modification.

Sequence 5' -GGACGGAAGACCCCGUGG- 3'

1. Oldenburg M. *et al.*, 2012. TLR13 recognizes bacterial 23S rRNA devoid of erythromycin resistance-forming modification. *Science*. 337(6098). 2. Hidmark A. *et al.*, 2012. Cutting edge: TLR13 is a receptor for bacterial RNA. *J Immunol*. 189(6):2717-21. 3. Li XD & Chen ZJ. 2012. Sequence specific detection of bacterial 23S ribosomal RNA by TLR13. *elife*. 1:e00102.

## METHODS

### Preparation of stock solution (200 µg/ml)

- Add 1 ml of endotoxin-free water (provided) and homogenize by mixing gently until completely dissolved.

Working concentration: 0.02-2 µg/ml

### ORN Sa19-induced TLR13 activation

ORN Sa19 can be used to stimulate TLR13 in HEK-Blue™ mTLR13 cells. HEK-Blue™ mTLR13 cells stably express the murine TLR13 gene and an NF-κB-inducible secreted embryonic alkaline phosphatase (SEAP). For more information visit: <https://www.invivogen.com/hekblue-tlr13>.

- Add 20 µl of ORN Sa19 at 0.02-2 µg/ml (final concentration) in a well of a 96-well plate.
- Add 180 µl of cell suspension (prepare cell suspension according to data sheet) per well.
- Incubate the plate for 6-24 h at 37°C, 5% CO<sub>2</sub>.
- Determine mTLR13 stimulation with ORN Sa19 by assessing cytokine expression using an ELISA, or SEAP expression using a SEAP detection medium, such as HEK-Blue™ Detection.

## RELATED PRODUCTS

Product	Description	Cat.Code
HEK-Blue™ Detection	SEAP detection medium	hb-det2
HEK-Blue™ mTLR13 Cells	mTLR13 reporter cells	hkb-mtlr13

### TECHNICAL SUPPORT

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