

ssPoly(U) Naked

Single-stranded RNA polymer; Polyuridylic acid; human TLR8/mouse TLR7 agonist

Catalog code: tlr1-sspu

<https://www.invivogen.com/sspolyu>

For research use only

Version 19E21-MM

PRODUCT INFORMATION

Contents:

- 10 mg of ssPoly(U) Naked
- 10 ml of endotoxin-free water

Storage and stability:

- ssPoly(U) Naked is provided lyophilized and shipped at room temperature. Store lyophilized product at -20°C.
- Upon resuspension, prepare aliquots of ssPoly(U) Naked and store at -20°C. Resuspended product is stable for 6 months at -20°C when properly stored. Avoid repeated freeze-thaw cycles.

Quality control:

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

DESCRIPTION

ssPoly(U) Naked (CAS number: 28086-43-3) is a synthetic ssRNA which can substitute for viral RNAs in inducing IFN- α production in plasmacytoid dendritic cells (PDC). Murine PDC deficient for TLR7 failed to produce IFN- α in response to poly(U), while the response to CpG-ODNs was unaffected, suggesting that TLR7 plays a critical role in viral ssRNA recognition¹. In human cells, TLR8 was shown to be the key receptor for viral ssRNA², implying a species specificity difference in ssRNA recognition. During infection, some viral particles are degraded by the endosomal proteases, exposing the viral genome and allowing TLR7 and/or TLR8 signaling, which are known to occur in endosomes³. TLR7 and TLR8 can recognize both self and viral RNA but seem able to distinguish the presence of viral RNA by detecting their abnormal localization in the endosome rather than a particular RNA motif.

1. Diebold SS. *et al.*, 2004. Innate antiviral responses by means of TLR7-mediated recognition of single-stranded RNA. *Science*. 5;303(5663):1529-31
2. Heil F. *et al.*, 2004. Species-specific recognition of single-stranded RNA via toll-like receptor 7 and 8. *Science*. 5;303(5663):1526-9.
3. Heil F. *et al.*, 2003. The Toll-like receptor 7 (TLR7)-specific stimulus loxoribine uncovers a strong relationship within the TLR7, 8 and 9 subfamily. *Eur J Immunol*. 33(11):2987-97.

METHODS

Preparation of ssPoly(U) Naked stock solution (1 mg/ml)

- Add 10 ml of sterile endotoxin-free water to 10 mg of ssPoly(U) Naked. Mix gently until completely dissolved.

Human TLR8 / Mouse TLR7 stimulation

ssPolyU can be used to stimulate TLR7 or TLR8 in HEK-Blue™ TLR7 or TLR8 cells. These cells stably express an NF- κ B-inducible secreted embryonic alkaline phosphatase (SEAP) and overexpress the TLR7 or the TLR8 gene.

For more information visit: <https://www.invivogen.com/hek-blue-tlr>

1. Rehydrate ssPoly(U) Naked and LyoVec™ at the recommended concentrations. Bring ssPoly(U) Naked and LyoVec™ to room temperature and gently vortex to homogenize before use.
2. In a sterile 1.5 ml microfuge tube at room temperature, mix 1 μ l (1 μ g) ssPoly(U) Naked stock solution (1 mg/ml) with 100 μ l of LyoVec™. Mix gently.
3. Incubate at room temperature for 15 minutes to allow the formation of the complex.
4. Add 10-20 μ l of ssPoly(U) & LyoVec™ complex to each well of a 96-well plate.
5. To each well containing ssPoly(U) & LyoVec™, add 180 μ l of a HEK-Blue™ hTLR8 or HEK-Blue™ hTLR8 cell suspension.
6. Incubate for 6-24 h at 37°C, 5% CO₂.
7. Determine TLR stimulation using a SEAP detection medium, such as QUANTI-Blue™ Solution or HEK-Blue™ Detection.

RELATED PRODUCTS

Product	Description	Cat.Code
CL264	TLR7 ligand	tlrl-c264s
Gardiquimod™	TLR7 ligand	tlrl-gdqs
HEK-Blue™ mTLR7 cells	Murine TLR7 reporter cells	hkb-mtlr7
HEK-Blue™ hTLR8 cells	Human TLR8 reporter cells	hkb-htlr8
HEK-Blue™ Detection	SEAP detection reagent	hb-det2
Imiquimod (R837)	TLR7 ligand	tlrl-imqs
ORNO6/LyoVec™	TLR8 ligand	tlrl-orn6
QUANTI-Blue™ Solution	SEAP detection reagent	rep-qbs
ssPolyU/LyoVec™	TLR7/TLR8 ligand	tlrl-lpu
ssRNA40/LyoVec™	TLR8 ligand	tlrl-lrna40

TECHNICAL SUPPORT

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