

# Poly(I:C)-LMW/LyoVec™

## RIG-I/MDA-5 Ligand

Catalog code: tlr1-picwlv

<http://www.invivogen.com/polyic-lmw-lyovec>

For research use only

Version # 17L04-MM

## PRODUCT INFORMATION

### Content:

- 4 x 25 µg lyophilized poly(I:C)-LMW/LyoVec™ 1:6 ratio (w/w)

*Note:* Each vial contains 25 µg of poly(I:C)-LMW complexed with 150 µg LyoVec™. Poly(I:C)-LMW (low molecular weight) is a new preparation of poly(I:C) with an average size is 0.2-1 kb.

- 10 ml endotoxin-free water

### Storage and stability:

- Poly(I:C)-LMW/LyoVec™ complexes are provided lyophilized and shipped at room temperature. Store at -20°C. Lyophilized product is stable for 1 year at -20°C.
- Upon resuspension, store product at 4°C. Resuspended product is stable for 1 week at 4°C.

### Quality control

- The biological activity has been tested 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

Polyinosinic-polycytidylic acid (poly(I:C)) is a synthetic analog of double-stranded RNA (dsRNA), a molecular pattern associated with viral infection. Poly(I:C) induces a strong innate immune response initiated by two types of pattern recognition receptors (PRRs): the Toll-like receptors (TLRs) and the RIG-I-like receptors (RLRs)<sup>1</sup>. The TLR family consists of more than 10 members expressed on the cell surface membrane or endosomes. The RLRs form a family of cytoplasmic RNA helicases that includes RIG-I and MDA-5. Naked poly(I:C) is recognized by TLR3 whereas transfected poly(I:C) is sensed by RIG-I/MDA-5 in a cell-type-specific manner<sup>2,3</sup>.

Poly(I:C)-LMW/LyoVec are preformed complexes between poly(I:C)-LMW and the transfection reagent LyoVec™. These complexes induce the activation of the RIG-I/MDA-5 signaling pathway at concentrations ranging from 100 ng to 1 µg/ml in InvivoGen's RLR reporter cells.

**1. Kawai T. & Akira S., 2007.** Antiviral signaling through pattern recognition receptors. *J Biochem.* 141(2):137-45. **2. Gitlin L. et al., 2006.** Essential role of mda-5 in type I IFN responses to polyriboinosinic:polyribocytidylic acid and encephalomyocarditis picornavirus. *PNAS* 103(22):8459-8464. **3. Kato H. et al., 2005.** Cell type-specific involvement of RIG-I in antiviral response. *Immunity.* 23(1):19-28.

## METHODS

### Preparation of stock solution (50 µg/ml)

- Add 500 µl endotoxin-free water (provided) and mix gently. Allow at least 15 minutes to resuspend the product.

*Note:* The suspension may contain floating fine particles.

### RIG-I/MDA-5 stimulation in C57/WT MEFs

C57/WT murine embryonic fibroblasts (MEFs) were isolated from embryos under C57BL/6 background and immortalized with the SV40 large antigen. They stably express a SEAP reporter gene inducible by NF-κB and IRF3/7 providing a convenient method to monitor the activation of these transcription factors upon stimulation with poly(I:C)-LMW/LyoVec™ complexes.

1. Prepare a C57/WT cell suspension at ~415,000 cells/ml.
2. Add 20 µl of poly(I:C)-LMW/LyoVec™ at different concentrations (100 ng to 1 µg/ml) per well of a flat-bottom 96-well plate.

### Notes:

- At final concentrations higher than 1 µg/ml, some cytotoxicity may be observed.
  - Naked poly(I:C)-LMW may be used as negative control.
3. Add 180 µl of cell suspension (~75,000 cells) per well.
  4. Incubate the plate at 37°C in a 5% CO<sub>2</sub> incubator for 18-24 h.
  5. Monitor SEAP production using a SEAP detection assay such as QUANTI-Blue™.

## RELATED PRODUCTS

Products	Catalog Code
3p-hpRNA	tlr1-hprna
5'ppp-dsRNA	tlr1-3prna
LyoVec™	lyec-1
Poly(I:C) LMW	tlr1-picw
QUANTI-Blue™	rep-qb1
<b>RLR Reporter Cells</b>	
A549-Dual™ Cells	a549d-nfis
A549-Dual™ KO-RIG-I Cells	a549d-korigi
B16-Blue™ IFN-α/β cells	bb-ifnt1
C57/WT MEFs	mef-c57wt
HEK-Lucia™ RIG-I Cells	hkl-hrigi
RAW-Blue™ ISG cells	raw-isg
THP1-Blue™ ISG cells	thp1-isg

## TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Hong Kong: +852 3622-3480

E-mail: [info@invivogen.com](mailto:info@invivogen.com)