c-di-GMP
Cyclic diguanylate monophosphate, a CDS ligand
Catalog code: tlr1-nacdg, tlr1-nacdg-5
http://www.invivogen.com/cdigmp
For research use only. Not for use in humans.
Version 18E29-MM

PRODUCT INFORMATION
Contents
- c-di-GMP is provided lyophilized and is available in two sizes:
  - 1 mg c-di-GMP: tlr1-nacdg
  - 5 mg (5 x 1 mg) c-di-GMP: tlr1-nacdg-5
Note: c-di-GMP is sterile filtered prior to lyophilization.
- Lyophilized product is stable for 1 year when properly stored.
  - Monitor induction of type I IFNs by assessing Lucia luciferase reporter
    activity, e.g. in THP1-Blue™ ISG cells
  - Alternatively, THP1-Blue™ ISG cells, an IRF-SEAP reporter cell line,
    can be used.

Chemical properties

SYNONYM: c-di-GMP sodium salt
CAS number: 61093-23-0
FORMULA: C20H22N10Na2O13P2
Molecular weight: 734.38
Solubility: 50 mg/ml in water

METHODS
Preparation of stock solution (1 mg/ml):
- Stimulate CDSs can be achieved with 10-100 μg/ml c-di-GMP.
  - Add 1 ml of endotoxin-free water to 1 mg of c-di-GMP.
  - Mix the solution by pipetting up and down.

Induction of type I IFNs in THP1-Lucia ISG cells
Induction of type I IFNs with c-di-GMP can be studied in a variety of
- Resuspend c-di-GMP, as described above.
- Stimulate cells with 10-100 μg/ml c-di-GMP for 16-48 hours.
- Monitor induction of type I IFNs by assessing Lucia luciferase reporter
  gene expression using QUANTI-Luc™.

Note: Alternatively, THP1-Blue™ ISG cells, an IRF-SEAP reporter cell line,
  can be used.

RELATED PRODUCTS

<table>
<thead>
<tr>
<th>Product</th>
<th>Catalog Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>LyoVec™</td>
<td>lye-12</td>
</tr>
<tr>
<td>QUANTI-Luc™</td>
<td>rep-glcl</td>
</tr>
<tr>
<td>RAW-Lucia™ ISG</td>
<td>rawl-IsG</td>
</tr>
<tr>
<td>RAW-Lucia™ ISG-KO-STING</td>
<td>rawl-kostg</td>
</tr>
<tr>
<td>THP1-Blue™ ISG</td>
<td>thp-Isg</td>
</tr>
<tr>
<td>THP1-Lucia™ ISG</td>
<td>thpl-Isg</td>
</tr>
</tbody>
</table>

CDS ligands
- c-di-AMP
- HSV-60/LyoVec™
- ISDl-LyoVec™
- VACV-70/LyoVec™

DESCRIPTION
Bis-(3’-5’)-cyclic dimeric guanosine monophosphate (c-di-GMP) is a second
messenger produced in bacteria but not in mammals. This cyclic dinucleotide
is involved in complex biological processes, such as biofilm formation,
virulence and photosynthesis. Besides its role as an intracellular and
intercellular signaling molecule in prokaryotes, c-di-GMP also affects
eukaryotes. In mammals, c-di-GMP is recognized by STING, initiating a
response characterized by the production of type I interferons through the
TBK1/IRF3 axis. The helicase DDX41 may play a role in the recognition
of c-di-GMP upstream of STING. Studies have also demonstrated that
c-di-GMP exhibits potent adjuvant properties.

CDS ligands, such as c-di-GMP, trigger type I IFN production and the
induction of interferon stimulated genes (ISG) through interferon regulatory
factors (IRFs). To facilitate their study, InvivoGen has developed stable
reporter cells in two well established immune cell models, the human
monocytic cell line THP-1 and the murine RAW 264.7 macrophages. These
cells express a reporter gene, either SEAP or Lucia luciferase, under the
control of an IRF-inducible promoter.


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 3-622-34-80
E-mail: info@invivogen.com

www.invivogen.com