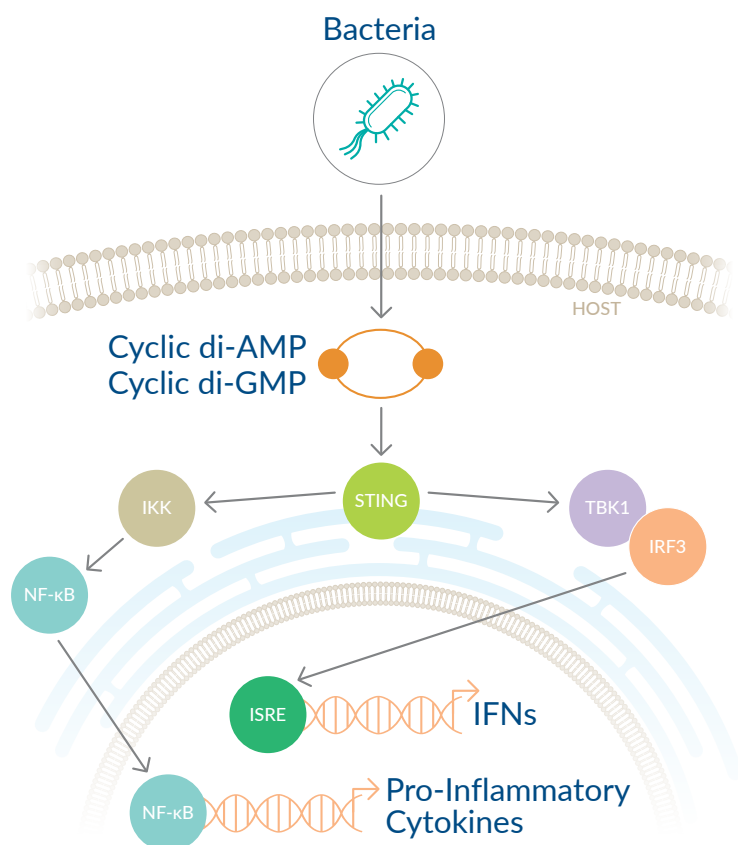


Bacterial Signaling & Sensing



Cyclic di-AMP and cyclic di-GMP are cyclic dinucleotide (CDN) second messengers generated by bacteria that control viability, motility, biofilm formation, virulence, and many additional processes. CDNs are direct ligands for STING (stimulator of interferon genes), a host cell defense factor in innate immunity. In response to sensing cytosolic nucleic acids, STING initiates a signaling pathway that induces the expression of IFNs and NF- κ B-dependent inflammatory cytokines. Cayman offers tools to quantify levels of CDNs in bacterial lysates as well as a bacterial CDNs, quorum-sensing signaling molecules, and bacterial fatty acid mixtures.



Bacterial CDNs are recognized by STING, leading to the production of type I IFNs and pro-inflammatory cytokines.

NEW! ELISAs to quantify bacterial CDNs detected by STING

Cyclic di-AMP ELISA Kit Item No. 501960

- Measure cyclic di-AMP in bacterial cell lysates
- LLOD is 20.7 pg/ml
- Assay 24 samples in triplicate or 36 in duplicate
- Uses a highly specific monoclonal antibody

Cyclic di-GMP ELISA Kit Item No. 501780

- Measure cyclic di-GMP in bacterial cell lysates
- LLOD is 5.3 pg/ml
- Assay 24 samples in triplicate or 36 in duplicate

GET RESULTS IN UNDER FOUR HOURS

Powered by **BIOLOG** - LIFE SCIENCE INSTITUTE -

Cyclic Dinucleotides (CDNs)

| Item No. | Product Name | Description |
|----------|-----------------------------|---|
| 17753 | Cyclic di-AMP (sodium salt) | A bacteria-derived CDN; binds and activates mammalian STING |
| 17144 | Cyclic di-GMP (sodium salt) | A bacteria-derived CDN; binds and activates mammalian STING ($K_d = 1.21 \mu\text{M}$) |
| 22485 | Cyclic di-IMP (sodium salt) | A synthetic analog of cyclic di-AMP and cyclic di-GMP with adjuvant properties |
| 17966 | 3'3'-cGAMP (sodium salt) | A bacteria-derived CDN with canonical 3'5'-phosphodiester bonds; binds and activates mammalian STING ($K_d = 1.04 \mu\text{M}$) |

Proteins in the STING Pathway

| Item No. | Product Name | Amino Acids | Purity |
|----------|---|---|--------|
| 22809 | CdnP (<i>Mycobacterium tuberculosis</i> strain ATCC 25618/H37Rv recombinant) | 1-336 (full length) | ≥70% |
| 22810 | cGAS (human recombinant) | 2-522 (full length) | ≥90% |
| 25001 | cGAS (161-522) (human recombinant) | 161-522 (truncated) | ≥90% |
| 22816 | STING R232 variant (human recombinant) | 138-379 (truncated); R232 variant | ≥80% |
| 22815 | STING H232 variant (human recombinant) | 138-379 (truncated); R232H variant | ≥70% |
| 15139 | STING H232 variant; SUMO-tagged (human recombinant) | 155-341 (truncated); R232H variant | ≥95% |
| 23592 | STING AQ variant (human recombinant) | 138-379 (truncated); G230A, R293Q variant | ≥80% |
| 23594 | STING M284 variant (human recombinant) | 138-379 (truncated); R284M variant | ≥80% |
| 23593 | STING R224 variant (human recombinant) | 138-379 (truncated); K224R variant | ≥70% |
| 22817 | TBK1 (human recombinant) | 1-729 (full length) | ≥50% |
| 22811 | IRF3 (human recombinant) | 1-427 (full length) | ≥85% |
| 23590 | IRF3 (S386A, S396A mutant; human recombinant) | 1-427 (full length) | ≥75% |

cGAS, STING, IRF3, and IKK γ Antibodies

| Item No. | Product Name | Immunogen | Host | Species Reactivity | Application(s) |
|----------|---|--|--------|-------------------------------|----------------|
| 23853 | cGAS Monoclonal Antibody (Clone 5G10) | Full length human recombinant protein | Mouse | (+) Human | IF, IP, WB |
| 17857 | STING Polyclonal Antibody | Human recombinant STING | Rabbit | (+) Human | ELISA, IP, WB |
| 24791 | STING M284 variant Polyclonal Antibody | Synthetic peptide from the STING R284M variant | Rabbit | (+) Human | WB |
| 17856 | STING Monoclonal Antibody (Clone 2C8) | Human recombinant STING (AA 139-379) | Mouse | (+) Human | ELISA, IHC, WB |
| 24937 | IRF3 Polyclonal Antibody | Human recombinant IRF3 | Rabbit | (+) Human (+) Green monkey | ELISA, IHC, WB |
| 13931 | IKK γ Monoclonal Antibody (Clone 72C627) | His-tagged, full length human IKK γ | Mouse | (+) Human (+) Mouse | WB |

Quorum-Sensing Signaling Molecules

Cayman's diverse set of homoserine lactones can be used to study how bacterial populations use quorum sensing signaling to coordinate their behavior as cell population density increases.

| Item No. | Product Name | Description |
|----------|--|---|
| 10007898 | N-butyryl-L-Homoserine lactone | Has applications in regulation of virulence, infection prevention, and formation of biofilms |
| 10011207 | N-(β -ketocaproyl)-L-Homoserine lactone | Employed by marine bacterium <i>V. fischeri</i> and other bacteria in cell-cell communication |
| 10011199 | N-octanoyl-L-homoserine lactone | Has applications in infection prevention and regulation of virulence in general and in cystic fibrosis |
| 10007895 | N-3-oxo-dodecanoyl-L-Homoserine lactone | Activates NF- κ B and AP-2 to induce interleukin-8 production in human lung fibroblasts and epithelial cells |

Common compounds listed, over 35 homoserine lactones and their internal standards available online

Bacterial Fatty Acid Methyl Ester Standards

Cayman's bacterial fatty acid mixtures simplify the detection of fatty acids of primarily microbial origin by GC-MS.

| Item No. | Product Name | Supplied As | Contains |
|----------|---|-------------|---|
| 29372 | Bacterial Fatty Acid Methyl Ester Mixture 1 | 1 ampule | A mixture of seven saturated branched and straight chain fatty acid methyl esters |
| 29373 | Bacterial Fatty Acid Methyl Ester Mixture 2 | 1 ampule | A mixture of 26 bacterial fatty acid methyl esters |

View a complete list of Bacterial Signaling & Sensing products
at www.caymanchem.com