

Cyclic Dinucleotide ELISA Kits



Cyclic dinucleotides (CDNs) are ubiquitous cellular messengers that serve important signaling functions in all domains of life. To better understand CDN signaling systems in both eukaryotes and prokaryotes, Cayman, in conjunction with the expert nucleotide scientists at Biolog Life Science Institute, has developed immunoassays for specific detection of 2'3'-cGAMP, cyclic di-GMP, and cyclic di-AMP. **These immunoassays enable sensitive, accurate quantification of CDN levels in mammalian and bacterial cell lysates using a colorimetric 96-well microtiter plate format.**

Available to Quantify Mammalian and Bacterial CDNs

2'3'-cGAMP ELISA Kit

Item No. 501700

- Measure 2'3'-cGAMP in mammalian cell lysates
- LLOD is 9.6 pg/ml (0.01 pmol/ml)
- Run overnight or incubate for just 2 hours without compromising sensitivity
- Validated in THP-1 cell lysates

Cyclic di-GMP ELISA Kit

Item No. 501780

- Measure cyclic di-GMP in bacterial cell lysates
- LLOD is 5.3 pg/ml (0.008 pmol/ml)
- Uses a high-affinity polyclonal antiserum
- Rapid assay; get results in under 4 hours
- Validated in *E. coli* cell lysates

Cyclic di-AMP ELISA Kit

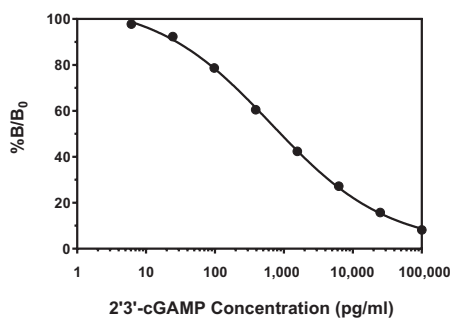
Item No. 501960

- Measure cyclic di-AMP in bacterial cell lysates
- LLOD is 20.7 pg/ml (0.03 pmol/ml)
- Uses a highly specific monoclonal antibody
- Rapid assay; get results in under 4 hours
- Validated in *E. coli* cell lysates

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Sensitive Immunoassay Format

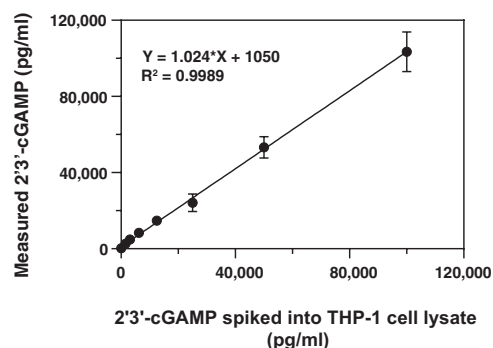
Cayman's CDN ELISAs are competitive assays that can detect low pg/ml range concentrations. Cayman's assays report sensitivity as the 80% B/B₀ point on the standard curve. This value can be trusted to give you reliable, reproducible data.



Assay Range = 100 ng/ml - 6.1 pg/ml
Sensitivity (defined as 80% B/B₀) = 85.3 pg/ml
Mid-point (defined as 50% B/B₀) = 907.7 pg/ml
Lower Limit of Detection (LLOD) = 9.6 pg/ml

Proven Accuracy and Precision

Spike and recovery of 2'3'-cGAMP in THP-1 cell lysate in the 2'3'-cGAMP ELISA showed excellent linearity and a 100% recovery.



Discover Cayman's Cyclic Dinucleotide ELISA Kits at www.caymanchem.com

Diverse Research Applications

Cyclic Dinucleotides: Ubiquitous Cellular Messengers

CDNs serve signaling functions in all domains of life. In eukaryotes, CDN signaling systems provide a means to sense and respond to pathogen infection by detecting foreign nucleic acid species. In prokaryotes, CDNs target multiple effectors to control diverse processes important for wide-ranging biological functions. CDN-based signaling in bacterial cells also has an immunological function that activates a cellular suicide program to protect the bacterial community through abortive phage infection. When an infectious insult is sensed, CDNs work as second messengers to relay signals to effector proteins whose ultimate actions eliminate the pathogen.

Learn more about...

- Synthesis, Composition, and Degradation of CDNs
- Bacterial Lifestyle Regulation
- CDN-Based Antiphage Signaling
- cGAS-STING Innate Immune Response
- STING-Independent Immune Activation
- Therapeutic Potential of CDNs

READ THE ARTICLE:

www.caymanchem.com/CDNs

STING Activation by Vaccine Adjuvants for Emerging Infectious Disease

Ligands that activate STING induce type I IFNs and have been used as vaccine adjuvants in preclinical models. For example, 2'3'-cGAMP used as an adjuvant in the H1N1 swine influenza vaccine in mice preferentially induces a Th1-mediated immune response that is associated with improved survival upon viral challenge. Mice delivered a vaccine containing 2'3'-cGAMP as an adjuvant can develop antigen-specific antibodies within two weeks of immunization that remain in circulation for at least 40 weeks. Intranasal administration of cyclic di-GMP in a mouse model of lung *S. pneumoniae* infection increases ovalbumin uptake and processing by pulmonary dendritic cells and decreases lung colony forming units. STING ligands have also shown promise as cancer vaccine adjuvants.

Learn more about...

- The Immunology of Vaccines
- Type I IFNs & Antiviral Immunity
- STING Activation by Vaccine Adjuvants
- Key Considerations for Vaccine Development

READ THE ARTICLE:

www.caymanchem.com/vaccines

Is there a particular CDN you'd like to see an immunoassay developed for?

Cayman has the knowledge and experience that comes from decades of assay development, validation, and performance. In conjunction with the expert nucleotide scientists at Biolog Life Science Institute, our scientists developed a novel immunoassay for 2'3'-cGAMP. We continue to collaborate with Biolog Life Science Institute to develop more novel assays for key CDNs and other cyclic oligonucleotides, delivering the sensitivity and specificity needed to detect biologically significant analyte levels.

Email us at sales@caymanchem.com to tell us about your research needs

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