

Store at  
-20°C

# 2',3'-cGAMP (sodium salt)

#35573

500 µg

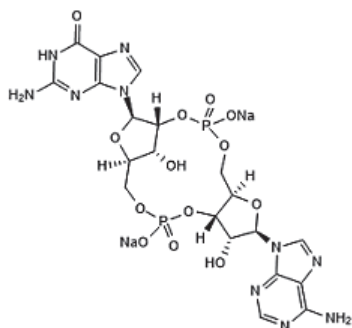
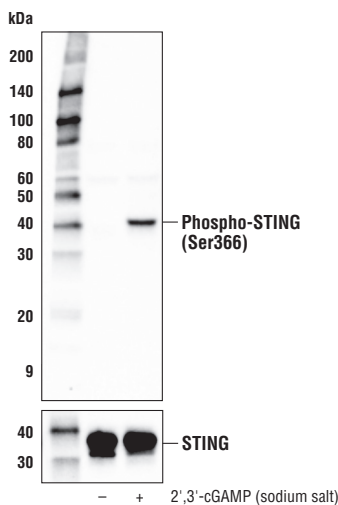
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**Background:** 2',3'-cGAMP (sodium salt), also known as 2',3'-cyclic-GMP-AMP, is a second messenger produced by the enzyme cGAMP synthase (cGAS) in response to cytoplasmic DNA (1,2). cGAMP binds and activates the stimulator of interferon genes (STING), a transmembrane adaptor protein that is a critical component of the cellular innate immune response to pathogenic cytoplasmic DNA (1-4). The binding affinity of 2',3'-cGAMP to STING is stronger than other cyclic di-nucleotides such as c-di-GMP, 3'2'-cGAMP, 3'3'-cGAMP, and 2'2'-cGAMP with a reported  $K_d$  value of 3.79 nM compared to 1.21 µM, 1.61 µM, 1.04 µM, and 287 nM, respectively (5).

**Molecular Weight:** 718.4 g/mol**Purity:** >98%**Molecular Formula:** C<sub>20</sub>H<sub>22</sub>N<sub>10</sub>Na<sub>2</sub>O<sub>13</sub>P<sub>2</sub>**CAS:** 1441190-66-4**Solubility:** Soluble in DMSO at 50 mg/ml and water at 10 mg/ml.

Western blot analysis of extracts from THP-1 cells differentiated with TPA (12-O-Tetradecanoylphorbol-13-Acetate) #4174 (80 nM, 16 hr) and then untransfected (-) or transfected with 2',3'-cGAMP (sodium salt) (10 µg/mL, 6 hr; +), using Phospho-STING (Ser366) (D7C3S) Rabbit mAb #19781 (upper) or STING (D2P2F) Rabbit mAb #13647 (lower).

**Storage:** Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, continue to store at -20°C and use within 1 month to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

**Directions for Use:** 2',3'-cGAMP (sodium salt) is supplied as a lyophilized powder. For a 5 mM stock, reconstitute 500 µg of powder in 139 µl of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

**Background References:**

- (1) Sun, L. et al. (2013) *Science* 339, 786-91.
- (2) Wu, J. et al. (2013) *Science* 339, 826-30.
- (3) Ishikawa, H. and Barber, G.N. (2008) *Nature* 455, 674-8.
- (4) Zhong, B. et al. (2008) *Immunity* 29, 538-50.
- (5) Zhang, X. et al. (2013) *Mol Cell* 51, 226-35.

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