PRODUCT INFORMATION

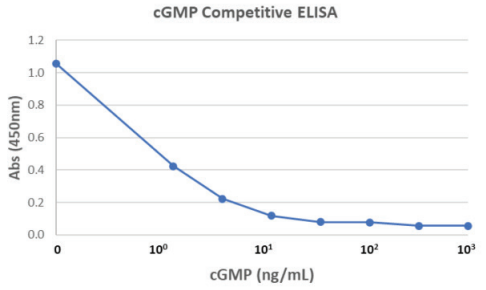
Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467)

Item No. 42804

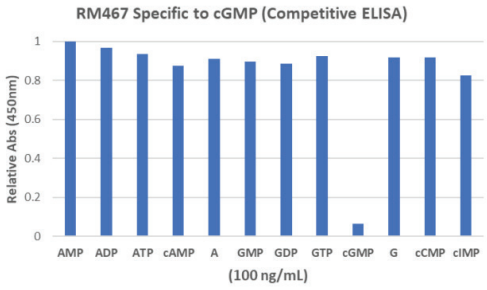
Overview and Properties

Contents:	This vial contains 50 µg of protein A-affinity purified antibody.
Synonyms:	cGMP, Guanosine 3',5'-cyclic mononucleotide, Guanosine 3',5'-cyclic monophosphate
Immunogen:	cGMP-KLH conjugate
Cross Reactivity:	(+) cGMP; (-) Adenosine, AMP, ADP, ATP, cAMP, cCMP, cIMP, guanosine, GMP, GDP, GTP
Species Reactivity:	Species Independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM467
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA; the recommended starting concentration is 0.05-0.5 µg/ml. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

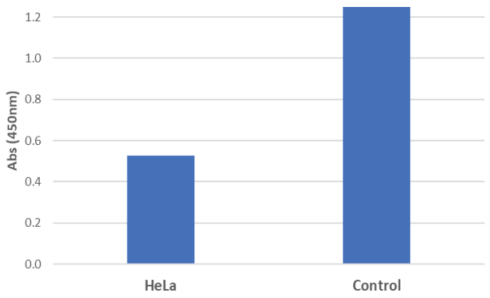
Images



ELISA results using Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467) to detect cGMP. The plate was coated with 1 µg/ml of Goat anti-rabbit IgG (50 µl/well). 0.05 µg/ml of Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467) (50 µl/well) was added and incubated. After washing and blocking, different concentrations of cGMP (25 µl/well) were added with 25 µl/well of 1/5,000 diluted HRP conjugated cGMP. 3,3′,5,5′-Tetramethylbenzidine (TMB) was used to develop the color after incubation and washing.



ELISA results using Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467) to selectively detect cGMP. The 96-well plate was coated with 1 µg/ml of Goat anti-rabbit IgG (50 µl/well). 0.05 µg/ml of Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467) (50 µl/well) was added and incubated. After washing and blocking, cGMP and other cylic nucleotides or nucleoside phosphates (25 µl/well) were added along with 25 µl/well of 1/5,000 diluted HRP conjugated cCMP. TMB was used to develop the color after incubation and washing.



ELISA results using Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467) to detect cGMP in HeLa cells. The 96-well plate was coated with 1 µg/ml of Goat anti-rabbit IgG (50 µl/well). 0.05 µg/ml of Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467) (50 µl/well) was added and incubated. After washing and blocking, HeLa cell lysate (~105 cell/ml) or control (lysate buffer only) (25 µl/well) were added with 25 µl/well of 1/5,000 diluted HRP conjugated cCMP. TMB was used to develop the color after incubation and washing.

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Description

Cyclic GMP (cGMP) is a key intracellular second messenger that transduces cellular signaling events through cGMP-gated (CNG) ion channels, phosphodiesterases (PDEs), and cGMP-dependent protein kinases (cGKs).[1-3] cGMP is synthesized from GTP by membrane-bound and soluble guanylate cyclase (GC) enzymes, which are activated in response to a variety of hormones, enterotoxins, drugs, and nitric oxide, among other factors. Intracellular accumulation of cGMP induces ion flux, increases or decreases the cAMP response *via* inhibition or stimulation of cAMP-dependent PDEs, respectively, and activates cGKs. The relative abundance of cGMP within a given cell can serve as a marker for activation by agonists acting through particulate GC at the cell surface or intracellular activation of soluble GC (sGC) by nitric oxide and its rate of breakdown to GMP by PDEs. cGMP signaling is involved in diverse biological processes, including platelet aggregation, blood pressure regulation, skeletal growth, gastrointestinal ion transport, vision, olfaction, thermosensitization, and synaptic plasticity. Cayman's Cyclic GMP Rabbit Monoclonal Antibody (Clone RM467) can be used for ELISA.

References

1. Hofmann, F. The cGMP system: Components and function. *Biol. Chem.* **401(4)**, 447-469 (2020).
2. Kuhn, M. Molecular physiology of membrane guanylyl cyclase receptors. *Physiol. Rev.* **96(2)**, 751-804 (2016).
3. Schmidt, H.H.H.W., Lohmann, S.M., and Walter, U. The nitric oxide and cGMP signal transduction system: Regulation and mechanism of action. *Biochim. Biophys. Acta* **1178**, 153-175 (1993).

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