PRODUCT INFORMATION

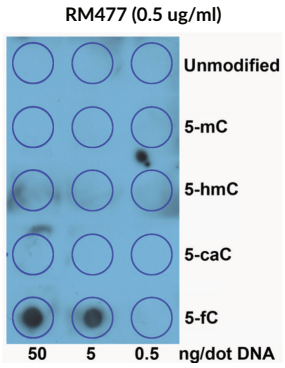
5-Formylcytosine Rabbit Monoclonal Antibody (Clone RM477)

Item No. 42807

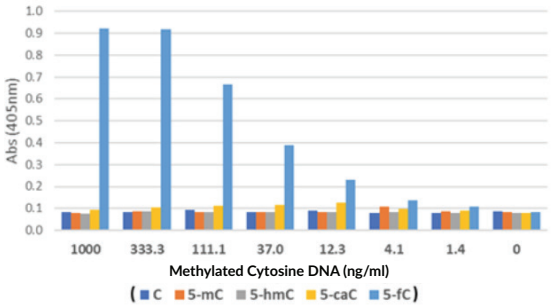
Overview and Properties

Contents:	This vial contains 50 µg of protein A-affinity purified monoclonal antibody.
Synonyms:	5-fC, 5fC
Immunogen:	KLH-conjugated 5-fC
Cross Reactivity:	(+) 5-fC; (-) Cytosine, 5-mC, 5-hmC, 5-caC
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
Concentration:	1 mg/ml
Clone:	RM477
Host:	Rabbit
Isotype:	IgG
Applications:	Dot blot and ELISA; the recommended starting concentration is 0.5-2 µg/ml for dot blot and and 0.5–2 µg/ml for ELISA. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Dot blot of DNA using 5-Formylcytosine Rabbit Monoclonal Antibody (Clone RM477). The membrane was pre-spotted with 50, 5, and 0.5 ng/dot of linear denatured DNA (426 bp) containing either normal cytosines (unmodified), 5-methylcytosines (5-mC), 5-hydroxymethylcytosines (5-hmC), 5-carboxylcytosines (5-caC), or 5-formylcytosines (5-fC).



ELISA of DNA using 5-Formylcytosine Rabbit Monoclonal Antibody (Clone RM477) (1 µg/ml). The plate was coated with different concentrations of linear denatured DNA (426 bp) containing either normal cytosines (unmodified), 5-methylcytosines (5-mC), 5-hydroxymethylcytosines (5-hmC), 5-carboxylcytosines (5-caC), or 5-formylcytosines (5-fC).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

5-Formylcytosine (5-fC) is an oxidized form of cytosine formed by methylation and oxidation of cytosine. [1,2] It is formed by sequential oxidation of 5-methyl- and 5-hydroxymethylcytosine by ten-eleven translocation (TET) enzymes.[3] In vitro, 5-fC in DNA reduces the rate of transcription by RNA polymerase II.[4] 5-fC is found in the enhancer regions of brain, heart, and liver developmental genes in isolated mouse embryos.[5] Cayman's 5-Formylcytosine Rabbit Monoclonal Antibody (Clone RM477) can be used for dot blot and ELISA applications.

References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. Nucleotide biosynthesis. *Biochemistry* (2002).
2. Ito, S., Shen, L., Dai, Q., *et al.* Tet proteins can convert 5-methylcytosine to 5-formylcytosine and 5-carboxylcytosine. *Science* **333(6047),** 1300-1303 (2011).
3. Kellinger, M.W., Song, C.-X., Chong, J., *et al.* 5-formylcytosine and 5-carboxylcytosine reduce the rate and substrate specificity of RNA polymerase II transcription. *Nat. Struct. Mol. Biol.*. **19(8),** 831-833 (2012).
4. Kim, D.H., Puri, N., Sodhi, K., *et al.* Cyclooxygenase-2 dependent metabolism of 20-HETE increases adiposity and adipocyte enlargement in mesenchymal stem cell-derived adipocytes. *J. Lipid Res.* **54(3),** 786-793 (2013).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM