

PRODUCT INFORMATION



5-Hydroxymethylcytosine DNA Matched Antibody Pair (Clones RM236/RM476)

Item No. 42874

Overview and Properties

Antibody	Item Name	Storage Buffer	Clone	Applications*
Capture	5-Hydroxymethylcytosine Rabbit Monoclonal Antibody (Clone RM236)	50 µg at 1.0 mg/ml in PBS with 50% glycerol and 0.09% sodium azide	RM236	Sandwich ELISA: 50-200 ng/well
Detection	Adenine-Guanine Rabbit Monoclonal Antibody - Biotinylated (Clone RM476)	25 µg at 1.0 mg/ml in PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide	RM476	Sandwich ELISA: 0.2-1 µg/ml

*Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Contents: Contains protein A-affinity purified monoclonal antibodies

Synonym: 5-hmC

Cross Reactivity: (+) 5-hmC; (-) Cytosine, 5-mC, 5-caC, 5-fC

Species Reactivity: (+) Species-independent

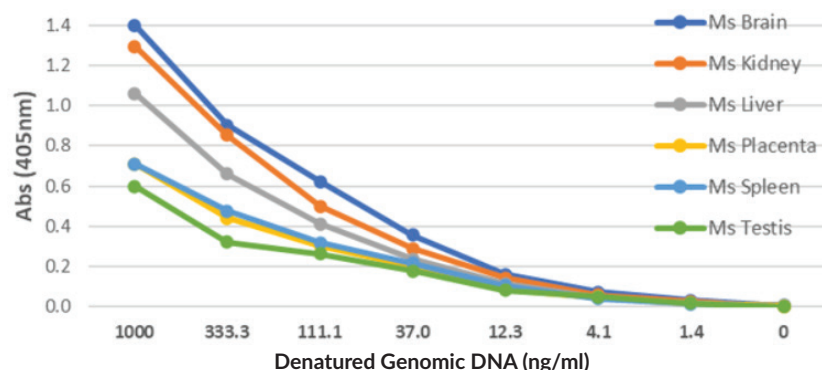
Form: Liquid

Storage: -20°C (as supplied)

Stability: ≥1 year

Host: Rabbit

Image



Detection of 5-hydroxymethylcytosine in genomic DNA from various mouse tissues. Results are shown for a sandwich ELISA using 5-Hydroxymethylcytosine Rabbit Monoclonal Antibody (Clone RM236) as the capture antibody (50 ng/well at 1 µl) and Adenine and Guanine Rabbit Monoclonal Antibody - Biotinylated (Clone RM476) as the detection antibody (0.2 µg/ml), followed by an AP-conjugated streptavidin.

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.

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Description

5-Hydroxymethylcytosine (5-hmC) is an epigenetic modification formed from the oxidation of 5-methylcytosine (5-mC) by Tet dioxygenases.¹ 5-hmC is primarily a stable DNA modification, but it can be oxidized by Tet enzymes and its products further modified to generate nonmethylated cytosine, indicating a role as an intermediate in DNA demethylation as well.²⁻⁴ It is associated with actively transcribed genes and recognized by a variety of proteins, including proteins involved in DNA repair and DNA metabolic processes.^{2,4} 5-hmC has been found in all mammalian tissues but levels are higher in the brain relative to other tissues.⁵ The percentage of genomic 5-hmC in mouse cerebellum increases during postnatal development until adulthood, and genes acquiring intragenic 5-hmC are enriched in pathways associated with age-related neurodegenerative disease pathways in adult mice.⁶ In contrast, 5-hmC levels are reduced by up to 8-fold in cancer tissues.^{2,7} Cayman's 5-Hydroxymethylcytosine DNA Matched Antibody Pair (Clones RM236/RM476) contains 5-Hydroxymethylcytosine Rabbit Monoclonal Antibody (Clone RM236) (Item No. 20723) as a capture antibody and Adenine-Guanine Rabbit Monoclonal Antibody - Biotinylated (Clone RM476) as a detection antibody. This antibody pair can be used for sandwich ELISAs or other sandwich assays for the specific detection of 5-hmC in ssDNA.

References

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4. Spruijt, C.G., Gnerlich, F., Smits, A.H., *et al.* Dynamic readers for 5-(hydroxy)methylcytosine and its oxidized derivatives. *Cell* **152**(5), 1146-1159 (2013).
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