abcam

ab11054

Anti-DMC1 antibody [2H12/4]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Protein within Human DMC1. The exact immunogen used to generate this antibody is proprietary information. Database link Q14565
Clone number	2H12/4
Purification technique	Affinity purification Protein A
Specificity	Specific for DMC1 - does not cross-react with the related protein Rad51. The antibody was tested on mouse meiotic chromosomes. It allowed localisation of the Dmc1 protein as numerous foci in the Leptotene and Zygotene stages of meiotic prophase, and fewer foci in the early Pachytene stage of meiotic prophase.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Expected

Species	Mouse, Rat, Human, Cow
Dilution info	Use at an assay dependent concentration.

Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Predicted

Species	Cow, Rat, Mouse
Dilution info	-
Notes	-

WB

Expected

Species	Mouse, Rat, Human, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Expected

Species	Mouse, Rat, Human, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Expected

Species	Mouse

Dilution info	-
Notes	Fix cells using a 4% paraformaldehyde solution and permeabilize using SDS (0.03% in a 4% paraformaldehyde solution). Incubate antibody overnight.

Species	Rat
Dilution info	-
Notes	Fix cells using a 4% paraformaldehyde solution and permeabilize using SDS (0.03% in a 4% paraformaldehyde solution). Incubate antibody overnight.

Species	Human
Dilution info	-
Notes	Fix cells using a 4% paraformaldehyde solution and permeabilize using SDS (0.03% in a 4% paraformaldehyde solution). Incubate antibody overnight.

Species	Cow
Dilution info	-
Notes	Fix cells using a 4% paraformaldehyde solution and permeabilize using SDS (0.03% in a 4% paraformaldehyde solution). Incubate antibody overnight.

Target data

See full target information DMC1

Function	Participates in meiotic recombination, specifically in homologous strand assimilation, which is required for the resolution of meiotic double-strand breaks.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	DMC1 also known as DNA Meiotic Recombinase 1 is an important protein involved in homologous recombination during meiosis. It plays a mechanical role by facilitating the exchange of genetic material between parental chromosomes. DMC1 is a 37-kilodalton protein and belongs to the recombinase family. The protein is mainly expressed in germ cells of both males and females particularly in those undergoing meiosis where it controls the DNA strand exchange process important for genetic diversity.
Biological function summary	DMC1 ensures accurate and efficient repair of double-strand breaks during meiosis a critical function for chromosome segregation and gamete viability. It works in concert with other proteins like RAD51 to form a nucleoprotein filament on the single-stranded DNA that promotes homologous pairing and strand exchange. This coordinated action is essential for forming synaptonemal complexes which stabilize homologous chromosomes during prophase I of meiosis.
Pathways	DMC1's role is integral to the homologous recombination repair pathway. It interplays specifically with RAD51 and other recombinases to regulate genetic recombination events. The protein contributes to DNA damage response pathways and is critical for the maintenance and integrity of genetic information during cell division.
Associated diseases and disorders	Mutations or regulatory dysfunctions in DMC1 have been associated with infertility particularly in disorders affecting spermatogenesis and oogenesis. The protein's malfunction can disrupt meiotic progression leading to aneuploidies and miscarriages. Additionally DMC1 mutations may connect to cancer pathways as faulty homologous recombination increases genomic instability often observed in various types of cancers highlighting potential therapeutic interactions with proteins like BRCA1 and BRCA2.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

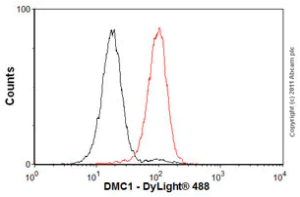
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Flow Cytometry - Anti-DMC1 antibody [2H12/4] (ab11054)

DMC1 Flow Cytometry staining using mouse Anti-DMC1 antibody

Overlay histogram showing HeLa cells stained with ab11054 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab11054, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.