

# Anti-DM4 Antibody [3H3]

## HA721153



<b>Product Type:</b>	Recombinant Rabbit monoclonal IgG, primary antibodies
<b>Applications:</b>	ELISA
<b>Clone number:</b>	3H3

**Description:** Ravtansine (DM4) is a maytansinoid, a chemical derivative of maytansine being investigated as the cytotoxic payload of a number of antibody-drug conjugates (ADCs). Microtubules are dynamic cytoskeletal polymers that switch stochastically between states of growing and shortening, called “dynamic instability”. They function in the precise segregation of chromosomes during cell division, transport of cellular cargos, and positioning and movement of intracellular organelles. Inhibition of microtubule function leads to cell cycle arrest and cell death. Microtubule-targeted drugs including the Vinca alkaloids, taxanes, and epothilones suppress the dynamic instability of microtubules, induce mitotic arrest, inhibit cell proliferation and induce apoptosis. The anticancer properties of maytansinoids have been attributed to their ability to disrupt microtubule function. The maytansinoid emtansine (DM1), for example, binds at the ends of microtubules and thereby suppress their dynamic instability. It is synthesized in order to link maytansinoids to antibodies via disulfide bonds. Maytansinoids inhibit tubulin polymerization and microtubule assembly and enhance microtubule destabilization, so there is potent suppression of microtubule dynamics resulting in a mitotic block and subsequent apoptotic cell death. DM4 can be used in the preparation of antibody drug conjugate. Although S-methyl DM1 and S-methyl DM4 inhibited microtubule assembly more weakly than maytansine, they suppressed dynamic instability more strongly than maytansine. Like vinblastine, the maytansinoids potently suppress microtubule dynamic instability by binding to a small number of high affinity sites, most likely at microtubule ends. Thus, the maytansine derivatives that result from cellular metabolism of the antibody conjugates are themselves potent microtubule poisons, interacting with microtubules as effectively as or more effectively than the parent molecule.

**Immunogen:** DM4 coupled with OVA.

**Recommended Dilutions:**  
ELISA 1:10,000

**Storage Buffer:** PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

**Storage Instruction:** Store at +4°C after thawing. Aliquot store at -20°C. Avoid repeated freeze / thaw cycles.

**Purity:** Protein A affinity purified.

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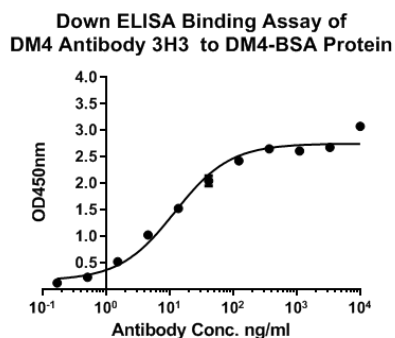
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## Images



**Fig1:** Anti-DM4 Antibody (HA721153) in indirect ELISA.

Indirect ELISA analysis of DM4 was performed by coating wells of a 96-well plate with 50  $\mu$ l per well of DM4-BSA diluted in carbonate/bicarbonate buffer, at a concentration of 1  $\mu$ g/mL overnight at 4°C. Wells of the plate were washed, blocked with StartingBlock blocking buffer, and incubated with 50  $\mu$ l per well of a mouse IL-2 monoclonal antibody starting at a concentration of 10  $\mu$ g/mL and serially diluting it to a concentration of 0.169 ng/mL for 2 hours at room temperature. The plate was washed and incubated with 50  $\mu$ l per well of an HRP-conjugated goat anti-rabbit IgG secondary antibody at a dilution of 1:15,000 for one hour at room temperature. Detection was performed using an Ultra TMB Substrate for 30 minutes at 37°C. The reaction was stopped with sulfuric acid and absorbances were read on a spectrophotometer at 450 nm.

**Note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

## Background References

1. Smith SV. Technology evaluation: cantuzumab mertansine, ImmunoGen. *Curr Opin Mol Ther.* 2004;6:666–74.
2. Erickson HK, Widdison WC, Mayo MF, et al. Tumor delivery and in vivo processing of disulfide-linked and thioether-linked antibody-maytansinoid conjugates. *Bioconjugate Chem.* 2010;21:84–92.

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