

**MONOCLONAL ANTIBODY TO
HUMAN MUSCARINIC ACETYLCHOLINE RECEPTOR M2**
clone B8E5



Catalog no HM2239 (lot number and expiry date are indicated on the label)

Description The monoclonal antibody B8E5 recognizes human muscarinic acetylcholine receptor M2 (M2 receptor), a G protein-coupled cardiovascular receptor of ~55 kDa. This receptor is an integral membrane protein consisting of seven membrane spanning α -helices linked together by extra- and intracellular loops that form a pharmacophore pocket. Autoantibodies directed against cardiovascular G protein-coupled receptors functionally interfering with the target have been described in several cardiovascular diseases. The M2 receptor is the predominant subtype of muscarinic receptors present in the heart of mammalian species. The muscarinic acetylcholine receptor mediates various cellular responses, including inhibition of adenylate cyclase, breakdown of phosphoinositides and modulation of potassium channels through the action of G proteins. Primary transducing effect is adenylate cyclase inhibition. Monoclonal antibody B8E5 inhibits the β -adrenergic L-type Ca^{2+} currents through activation of the muscarinic acetylcholine receptor M2. It suggests that the antibody acts not via the classical pathway of decreasing cAMP, but rather by increasing cGMP. Monoclonal antibody B8E5 acts by functional dimerization of the receptor resulting in stabilization of the constitutive active receptor dimers and paradoxically induces a small decrease in carbachol affinity for the M2 receptor. It recognizes the pentapeptide VRTVE (aa 168-172) corresponding to the N-terminal part of the second extracellular loop of the human M2 receptor.

Aliases M2ACh-R

Immunogen Peptide VRTVEDGECYIQFFSNAAVTFGTAI(C): Human second extracellular loop residues 168-192

Species Mouse IgG_{2a}

Cross reactivity Rat, mouse and guinea pig muscarinic acetylcholine receptor M2

Formulation 1 ml (100 μ g/ml) 0.2 μ m filtered antibody solution in PBS, containing 0.1% bovine serum albumin.

Application

	F	FC	FS	IA	IF	IP	P	W
Yes	•		• _a	•	•			• _b
No								
N.D.		•				•	•	

a = agonist-like antibody; b = non-reduced conditions; specific bands of ~55, 63 and 65 kDa
N.D.=Not Determined; F=Frozen sections; FC=Flow cytometry; FS=Functional studies; IA=Immuno assays; IF=Immuno fluorescence; IP=Immuno precipitation; P=Paraffin sections; W=Western blot

Use For immunohistology, and Western blotting, dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50. For functional studies, *in vitro* dilutions have to be optimized in user's experimental setting.

Storage and stability Product should be stored at 4°C. Under recommended storage conditions, product is stable for one year

Precautions For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

References

1. Fu, L et al; Agonist-like activity of anti-peptide antibodies directed against an autoimmune epitope on the heart muscarinic acetylcholine receptor. *Receptors Channels* 1994, 2: 121
2. Elies, R et al; Immunochemical and functional characterization of an agonist-like monoclonal antibody against the M2 acetylcholine receptor. *Eur J Biochem* 1998, 251: 659
3. Nascimento, J et al; cGMP-mediated inhibition of cardiac L-type Ca^{2+} current by a monoclonal antibody against the M2 ACh receptor. *Am J Physiol Cell Physiol* 2001, 281: 1251

Also available

HM2016	Monoclonal antibody against Human H-FABP, FABP3, clone 66E2
HM2018	Monoclonal antibody against Human H-FABP, FABP3, clone 67D3
HM2238	Monoclonal antibody against Human β 2-adrenoceptor, clone 6H8
HM5001	Monoclonal antibody against nitrotyrosine, clone HM11

