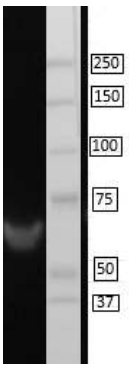
CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	MG-H1, clone 1H7G5		
Catalog number	HM5017		
Lot number	-	**Expiry date**	-
Volume	1 ml	**Amount**	100 µg
Formulation	0.2 µm filtered in PBS+0.1%BSA+0.02%NaN3	**Concentration**	100 µg/ml
Host Species	Mouse IgG2	**Conjugate**	None
Endotoxin	N.A.	**Purification**	Protein G
Storage	4°C		

Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #			2			2		1
Yes			●			●		●
No								
N.D.	●	●		●	●		●	

N.D.= Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot



W: Western blot with antibody HM5017. 2.5µg protein was loaded and a reduced sample treatment was used.

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.

- W: A reduced sample treatment and SDS-Page was used. The band size is ~70 kDa.
- IA: The antibody can be used as a detection antibody.
- IF: MG-H antibodies were labeled with fluorophores chosen to minimize spectral overlap so that all three isomers could be concurrently visualized by triple staining. EA.hy926 cells treated with MGO for up to 24hours to increase MG-H formation, before being simultaneously stained with fluorescent MG-H antibodies targeting all three isomers (ref.2).

General Information

Description

The MG-H1 antibody clone 1H7G5 recognizes methylglyoxal 5-hydro-5-methylimidazolones (MG-H1). Glycation, or nonenzymatic glycation, is the nonenzymatic reaction of glucose and other reducing sugars with free amino groups of proteins, lipids and nucleic acids. The amino groups of the side chains of arginine and lysine are the primary targets for this type of modification. Over time, the initial glycation products may undergo intramolecular rearrangements and oxidation reactions (glycoxidation) and ultimately transfrom in stable, so-called advanced glycation end products (AGEs). Several compounds, e.g. Nε-carboxymethyl-lysine (CML), pentosidine, or methylglyoxal (MGO) derivates, serve as examples of well-characterized and widely studies AGEs. AGEs have the potential to interact with a specific receptor (RAGE), a member of the immunoglobulin superfamily, initiating signal pathways that amplify inflammation and oxidative stress, and thereby leading to cellular injury and death. High levels of circulating AGEs are associated with cardiovascular disease, diabetes, chronic kidney disease, and increased mortality. Methylglyoxal (MGO) is an endogenous product of glucose metabolism. Increased production and accumulation of MGO, as well as increased modification of proteins by glycoxidation, are hallmarks of aging and diabetes. MGO was shown to modify proteins and

to contribute to the accumulation of damaged proteins that can be toxic to cells. Besides argpyrimidine and tetrahydropyrimidine, methylglyoxal hydroimidazolones (MG-Hs) comprise the most prevalent arginine-derived AGE. They are formed as a mixture of three isomers by protein glycation with MGO. MG-Hs are estimated to modify 1–2% of all arginine residues found in lens proteins of elderly human subjects. Levels of this AGE have also been found to be elevated in patients with cardiovascular disease, Alzheimer's disease, and diabetes mellitus.

Immunogen Nalpha-acetyl-Ndelta-(5-hydro-5-methyl)-4-imidazolone

Cross reactivity Mg-H: Yes (ref.2); Carboxylethyl arginine: Yes (ref.2)

References

1. Du, X et al; Inhibition of GAPDH activity by poly(ADP-ribose) polymerase activates three major pathways of hyperglycemic damage in endothelial cells. J. Clin. Invest. 2003, *112*:1049
2. Wang, T et al; Generation and characterization of antibodies against arginine-derived advanced glycation endproducts. Bio & Med Chem Letters 2015, *25*:4881

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

We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC	Date
Robbert Zwinkels	16/03/2018

Do you have any questions or comments regarding this product? Please contact us via support@hycultbiotech.com.