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AM26347PU-N Monoclonal Antibody to Carboxy Methyl Lysine - Purified

Alternate names: CML, Carboxymethyl-lysine

Quantity: 0.1 mg

Concentration: 0.1 mg/ml

Background: CML is known to be formed from the oxidation of both carbohydrates and lipids. This makes CML a biomarker of general oxidative stress. Carboxymethyl-lysine (CML) is a well-characterized glycoxidation product that accumulates in tissues with age, and its rate of accumulation is accelerated in diabetes. Glycoxidation products are a subset of advanced glycation endproducts (AGEs) that are formed by the nonenzymatic glycation and subsequent irreversible oxidation of proteins. Oxidative stress and protein modification have been implicated in the pathogenesis of the chronic complications of diabetes, including nephropathy and atherosclerosis. The accumulation of CML in long-lived tissue such as skin collagen reflects oxidative stress over an extended period of the life-span, and has been shown to be greater in patients with diabetic complications than those without complications.

Host / Isotype: Mouse / IgG1

Recommended Isotype Controls: SM10P (for use in human samples), AM03095PU-N

Clone: CML26

Immunogen: Carboxy Methyl Lysine (CML)-KLH

Format:
State: Liquid 0.2 µm filtered Ig fraction
Purification: Protein G Chromatography
Buffer System: PBS
Preservatives: 0.02% Sodium Azide
Stabilizers: 0.1% BSA

Applications:
Immunohistochemistry on Frozen Sections: The typical starting working dilution is 1/50.
Immunohistochemistry on Paraffin Sections: Fixation in 4% Formalin; cardiac tissue sections (4 mm) deparaffinised for 10 min in Xylene at room temperature, dehydrated by decreasing Ethanol. Sections stained with haematoxylin and eosin. Blocking endogenous peroxidase activity with 0.3% Hydrogen peroxide in Methanol for 30 min. No heating to prevent artificial induction of CML *(Ref.1)*.
The typical starting working dilution is 1/50.
Immunoassays.
Immunofluorescence: After fixation in 2% Phosphate-Buffered Glutaraldehyde solution the heart tissue was post-fixed in 1% Osmium Tetroxide. The tissue was dehydrated through a graded series of Ethanol. 0.5–3.0-mm-thick sections were cut with a glass knife *(Ref.1)*.
Western Blot.
Positive Control: Intramyocardial arteries.

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: The monoclonal antibody CML26 recognizes Human Carboxymethyl-lysine (CML).

Species Reactivity: **Tested:** Human, Multispecies cross reactant.

Add. Information: Mouse IgG1 predominantly, other isotypes maybe present.

Storage: Store undiluted at 2-8°C.
DO NOT FREEZE!
Shelf life: one year from despatch.

General Readings:

1. Bruynzeel AM, Abou El Hassan MA, Schalkwijk C, Berkhof J, Bast A, Niessen HW, et al. Anti-inflammatory agents and monoHER protect against DOX-induced cardiotoxicity and accumulation of CML in mice. Br J Cancer. 2007 Mar 26;96(6):937-43. Epub 2007 Feb 27. PubMed PMID: 17325706.
2. Ciapaite J, Bakker SJ, Van Eikenhorst G, Wagner MJ, Teerlink T, Schalkwijk CG, et al. Functioning of oxidative phosphorylation in liver mitochondria of high-fat diet fed rats. Biochim Biophys Acta. 2007 Mar;1772(3):307-16. Epub 2006 Nov 10. PubMed PMID: 17184976.
3. Baidoshvili A, Krijnen PA, Kupreishvili K, Ciurana C, Bleeker W, Nijmeijer R, et al. N(epsilon)-(carboxymethyl)lysine depositions in intramyocardial blood vessels in human and rat acute myocardial infarction: a predictor or reflection of infarction? Arterioscler Thromb Vasc Biol. 2006 Nov;26(11):2497-503. Epub 2006 Sep 14. PubMed PMID: 16973974.
4. Lieuw-a-Fa ML, Schalkwijk CG, Engelse M, van Hinsbergh VW. Interaction of Nepsilon(carboxymethyl)lysine- and methylglyoxal-modified albumin with endothelial cells and macrophages. Splice variants of RAGE may limit the responsiveness of human endothelial cells to AGEs. Thromb Haemost. 2006 Feb;95(2):320-8. PubMed PMID: 16493495.
5. van Heijst JW, Niessen HW, Musters RJ, van Hinsbergh VW, Hoekman K, Schalkwijk CG. Argpyrimidine-modified Heat shock protein 27 in human non-small cell lung cancer: a possible mechanism for evasion of apoptosis. Cancer Lett. 2006 Sep 28;241(2):309-19. Epub 2005 Dec 6. PubMed PMID: 16337338.
6. Sommeijer DW, Beganovic A, Schalkwijk CG, Ploegmakers H, van der Loos CM, van Aken BE, et al. More fibrosis and thrombotic complications but similar expression patterns of markers for coagulation and inflammation in symptomatic plaques from DM2 patients. J Histochem Cytochem. 2004 Sep;52(9):1141-9. PubMed PMID: 15314081.
7. Schalkwijk CG, Baidoshvili A, Stehouwer CD, van Hinsbergh VW, Niessen HW. Increased accumulation of the glycoxidation product Nepsilon-(carboxymethyl)lysine in hearts of diabetic patients: generation and characterisation of a monoclonal anti-CML antibody. Biochim Biophys Acta. 2004 Mar 22;1636(2-3):82-9. PubMed PMID: 15164755.
8. Baidoshvili A, Niessen HW, Stooker W, Huybregts RA, Hack CE, Rauwerda JA, et al. N(omega)-(carboxymethyl)lysine depositions in human aortic heart valves: similarities with atherosclerotic blood vessels. Atherosclerosis. 2004 Jun;174(2):287-92. PubMed PMID: 15136058.