Datasheet for ABIN6657492

anti-8-OHDG antibody

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Overview

Quantity:	100 µg
Target:	8-OHDG
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This 8-OHDG antibody is un-conjugated
Application:	ELISA, Immunohistochemistry (IHC), Immunoprecipitation (IP), Flow Cytometry (FACS), Fluorescence Microscopy (FM)

Product Details

Immunogen:	Immunogen: This Protein G purified monoclonal antibody was prepared using conventional hybridoma technology after repeated immunizations with 8-hydroxy-guanosine-BSA and casein conjugates. Immunogen Type: Native Protein
Clone:	15A3
Isotype:	IgG2b
Cross-Reactivity:	Human, Mouse (Murine), Rat (Rattus)
Purification:	This Protein G purified Anti-8-Hydroxy Guanine monoclonal antibody recognizes markers of oxidative damage to DNA (8-hydroxy-2'-deoxyguanosine, 8-hydroxyguanine and 8-hydroxyguanosine).

Target Details

Target:	8-OHDG
Alternative Name:	8-Hydroxy Guanine (8-OHDG Products)
Target Type:	Chemical
Background:	Synonyms: 8 hydroxy 2' deoxyguanosine antibody, 8 hydroxyguanine antibody, 8 hydroxyguanosine antibody, 8 OHG antibody, 8-OHG antibody, 8OG antibody, 8OHdG antibody, 8OHG antibody, 8-Hydroxy Guanine Antibody, 8-OH-dG Antibody, DNA/RNA Damage Antibody Background: DNA or RNA damage is due to environmental factors and normal metabolic processes inside the cell, that then hinder the ability of the cell to carry out its functions. There are four main types of DNA damage due to endogenous cellular processes: oxidation, alkylation, hydrolysis and mismatch of the bases. During the oxidation of bases, highly reactive chemical entities collectively known as RONS may develop. RONS stands for reactive oxygen and nitrogen species and includes nitric oxide, superoxide, hydroxyl radical, hydrogen peroxide and peroxynitrite. Numerous studies have shown that RONS cause a variety of other issues in addition to DNA damage. 8-hydroxyguanine, 8-hydroxy-2'-deoxyguanosine and 8-hydroxyguanosine are all RNA and DNA markers of oxidative damage. 8-hydroxy-2'-guanosine is produced by reactive oxygen and nitrogen species including hydroxyl radical and peroxynitrite. Specifically its high biological relevance is due to its ability to induce G to T transversions, which is one of the most frequent somatic mutations (2). 8-hydroxy-guanine has been the most frequently studied type of DNA base damage, with studies in diabetes, and cancer. Base modifications of this type arise from radical-induced hydroxylation and cleavage reactions of the purine ring. Finally, 8-hydroxy-guanosine, like 8-hydroxy-2'-guanosine, induces a mutagenic transversion of G to T in DNA. Its role has been tested specifically in the development of diabetes, hypertension and strokes.

Application Details

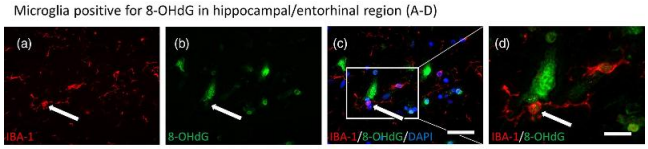
Application Notes:	Immunohistochemistry Dilution: 1:1000 Application Note: This Protein G purified antibody has been tested for use in immunohistochemistry, ICC/IF, Dot Blot, IP, Flow Cytometry, and ELISA. Specific conditions for reactivity should be optimized by the end user. Immunoprecipitation Dilution: User Optimized ELISA Dilution: User Optimized Flow Cytometry Dilution: User Optimized IF Microscopy Dilution: User Optimized
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	Buffer: 0.01 M Sodium Phosphate, 0.15 M Sodium Chloride, pH 7.2 Stabilizer: 50 % (v/v) Glycerol 0.1 % (w/v) Sodium Azide
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	RT,4 °C,-20 °C
Storage Comment:	Store Anti-8-Hydroxy Guanine antibody at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

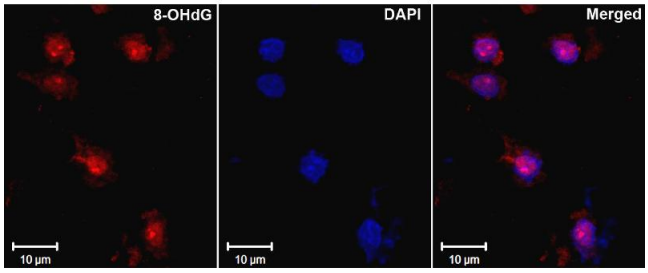
Publications

Product cited in:	Neumann, Lenz, Streit, Bechmann: "Is microglial dystrophy a form of cellular senescence? An analysis of senescence markers in the aged human brain." in: **Glia**, Vol. 71, Issue 2, pp. 377-390, (2022) (PubMed). Jabir, Hopkins, Ritchie, Ullah, Bayes, Li, Tourlomousis, Lupton, Puleston, Simon, Bryant, Evans: " Mitochondrial damage contributes to Pseudomonas aeruginosa activation of the inflammasome and is downregulated by autophagy." in: **Autophagy**, Vol. 11, Issue 1, pp. 166-82, (2015) (PubMed).



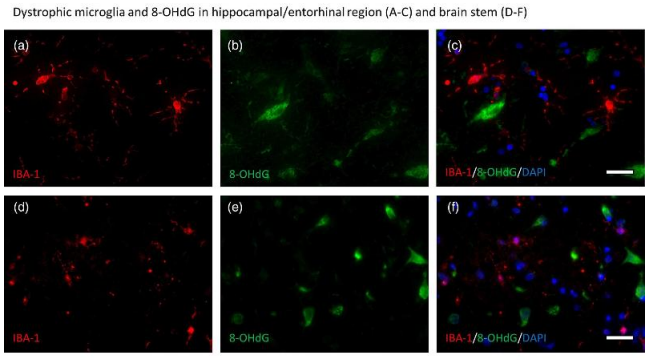
Immunofluorescence

Image 1. Very few IBA-1 positive dystrophic as well as ramified microglia (a), contained 8-OHdG (b) immune positive granules in their nuclei (hippocampal/entorhinal regions c, d). The pictures were taken from the gray matter of the temporal cortex of case 3 (a–d). (a–c) Scale bar = 50 µm. (d) Scale bar = 25 µm Source: PMID36286188



Immunofluorescence

Image 2. 8-hydroxy-guanine Immunofluorescence of mouse monoclonal anti-8-hydroxy-guanine antibody Tissue: Ischemic rat brain Fixation: formalin fixed paraffin embedded Antigen retrieval: not required Primary antibody: 8 hydroxy guanine antibody Localization: nuclear Staining: antibody as red signal with a DAPI blue nuclear counterstain.



Immunofluorescence

Image 3. Aged human brain tissue samples of individuals with morphologically dystrophic (a–f) and microglia were stained with an anti-IBA-1 antibody (red: a, d), anti-8-OHdG antibody (green: b, e), and DAPI (blue). Hippocampal regions with adjoining entorhinal cortex (a–c) and brain stem regions near the substantia nigra or locus coeruleus (d–f) were investigated. The majority of IBA-1 immune positive dystrophic was not positive for 8-OHdG (c, f). The pictures of hippocampal and entorhinal regions were taken from the gray matter of case 4 (a–c). Pictures of the brain stem were taken from case 11 at the level of locus coeruleus (d–f). Scale bar = 50 µm Source: PMID36286188