Anti-DNA/RNA Damage antibody [15A3] ab62623

Overview

Product name
Anti-DNA/RNA Damage antibody [15A3]

Description
Mouse monoclonal [15A3] to DNA/RNA Damage

Host species
Mouse

Tested applications
Suitable for: IHC-P, ELISA, ICC/IF, IHC-Fr, IHC-FoFr

Species reactivity
Reacts with: Species independent

Immunogen
Chemical/ Small Molecule corresponding to DNA/RNA Damage. 8-hydroxy-guanosine-BSA and -casein conjugates.

Positive control
IHC-P: Mouse inflamed colon and backskin tissues.

General notes
Please see the protocol booklet link below for recommended IHC and ICC staining procedure

Properties

Form
Liquid

Storage instructions

Storage buffer
Preservative: 0.09% Sodium azide
Constituents: PBS, 50% Glycerol

Purity
Protein G purified

Clonality
Monoclonal

Clone number
15A3

Isotype
IgG2b

Light chain type
kappa

Applications

Our Abpromise guarantee covers the use of ab62623 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
### Relevance

In intact animals, lesions (adducts) excised from DNA are transported from the cell through the circulation and excreted in urine. In bacteria, DNA adducts are excreted directly into the medium. In either case, the adducts can be assayed as a measure of oxidative damage to DNA. In particular, Oxo-8-dG (8-Oxo-7,8-dihydro-2'-deoxyguanosine) serves as an excellent marker for DNA damage produced by oxidants because it represents one of the major products generated by a wide array of treatments associated with oxidant damage such as that produced by irradiation and various carcinogens and because it is implicated in spontaneous transversion mutagenesis. Oxo-8-Gua (8-oxo-7,8-dihydroguanine) is one of the most common DNA lesions resulting from reactive oxygen species and can result in a mismatched pairing with adenine resulting in G to T and C to A substitutions in the genome. In humans, it is primarily repaired by DNA glycosylase OGG1. It can be caused by ionizing radiation, in connection with oxidative metabolism. Oxo-8-G (8-oxo-7,8-dihydroguanosine) is classified as an oxidized ribonucleotide, and is primarily used in studies of oxidative RNA damage and associated RNA repair and RNA turnover mechanisms within the cell. In the cell, Oxo-8-G RNA lesions are formed by reaction with reactive oxygen species (ROS) generated either via normal oxidative metabolic processes, UV ionizing radiation, or exposure to oxidative agents. Oxidative RNA damage can lead to defects in protein synthesis, for example, decreased rates of protein synthesis and production of aggregated or truncated peptides, with important implications in aging and neurodegenerative disorders and atherosclerosis.

### Images

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHC-P</td>
<td>⭐⭐⭐⭐⭐</td>
<td>Use a concentration of 1 - 10 µg/ml. Dilute antibody in PBS containing 0.3% Triton X-100, 0.08% sodium azide and 2% normal goat serum.</td>
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<td>ELISA</td>
<td>⭐⭐⭐⭐⭐</td>
<td>Use at an assay dependent concentration.</td>
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<tr>
<td>AP</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td>⭐⭐⭐⭐⭐</td>
<td>1/500 - 1/1000. PubMed 25479606</td>
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<tr>
<td>IHC-Fr</td>
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<td>Use at an assay dependent concentration.</td>
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<tr>
<td>IHC-FoFr</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 21824519</td>
</tr>
</tbody>
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Mouse hepatocytes stained for DNA/RNA Damage (green) using ab62623 at 1/500 dilution in ICC/IF, followed by Alexa Fluor 488® conjugated Goat Anti-Mouse IgG (H+L).

Immunohistochemical analysis of murine brain tissue 24 hours after recirculation following ischemia. Staining using ab62623 at 1/1000 dilution. An AlexaFluor®488-conjugated anti-mouse IgG (1/500) was used as the secondary antibody.
Immunohistochemistry (Frozen sections) - Anti-DNA/RNA Damage antibody [15A3] (ab62623)

Left panel: ab62623 staining in ischemic rat brain tissue
Centre panel: DAPI staining
Right panel: merged

Immunohistochemical analysis of PFA-fixed paraffin-embedded rat femoral tissue, labelling with ab62623 at a dilution of 1/50 incubated for 13 hours at 4°C in 1% BSA in TBS. Heat mediated antigen retrieval was performed via Tris-EDTA pH 9.0. Blocking was via ab93695 ABC kit incubated at 1% for 20 minutes at room temperature. A secondary was not used, but ab93695 detection kit was used for signal amplification.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DNA/RNA Damage antibody [15A3] (ab62623)
Image is courtesy of an AbReview submitted by Mr. Helder Fonseca.

ab62623 staining in rat liver tissue section by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue underwent formaldehyde fixation before enzymatic antigen retrieval with Proteinase K solution and then blocking for 20 minutes at 37°C was performed. The primary antibody was diluted 1/4000 and incubated with sample for 2 hours at 37°C. A Biotin conjugated rabbit polyclonal to mouse IgG was used as secondary antibody at 1/200 dilution.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DNA/RNA Damage antibody [15A3] (ab62623)
This image is a courtesy of Anonymous Abreview.
Paraffin-embedded mouse inflamed colon tissue stained for DNA/RNA Damage using ab62623 at 1/1000000 dilution in immunohistochemical analysis.

Secondary Antibody: Biotin Goat Anti-Mouse at 1:2000 for 1 hour at RT. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain at 200 µl for 2 minutes at RT.

Bouin's Fixative, paraffin-embedded mouse backskin tissue stained for DNA/RNA Damage using ab62623 at 1/100 dilution in immunohistochemical analysis.

Secondary Antibody: FITC Goat Anti-Mouse (green) at 1/50 for 1 hour at RT.

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