

## DESCRIPTION

<b>Specificity</b>	Detects 4-Hydroxynonenal adducts of histidine residues. No cross-reactivity with nitrotyrosine, formaldehyde, glutaraldehyde, or 4-hydroxy hexenaldehyde adducts is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 198960
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	KLH-coupled 4-Hydroxynonenal
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

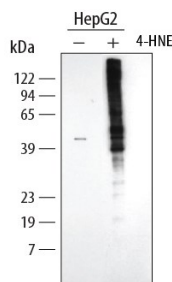
## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1 µg/mL	See Below
<b>Immunohistochemistry</b>	0.1-25 µg/mL	See Below
<b>Simple Western</b>	5 µg/mL	See Below

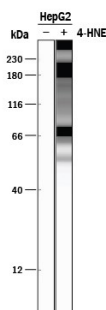
## DATA

### Western Blot



**Detection of Human 4-Hydroxynonenal by Western Blot.** Western blot shows lysates of HepG2 human hepatocellular carcinoma cell line untreated (-) or treated (+) with 4-Hydroxynonenal (4-HNE). PVDF membrane was probed with 1 µg/mL of Mouse Anti-4-Hydroxynonenal Monoclonal Antibody (Catalog # MAB3249) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Specific bands were detected for 4-Hydroxynonenal at adducts of histidine residues (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

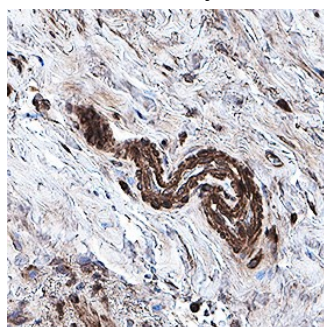
### Simple Western



**Detection of Human 4-Hydroxynonenal by Simple Western™.** Simple Western lane view shows lysates of HepG2 human hepatocellular carcinoma cell line untreated (-) or treated (+) with 4-Hydroxynonenal (4-HNE), loaded at 0.2 mg/mL. Specific bands were detected for 4-Hydroxynonenal at adducts of histidine residues kDa (as indicated) using 5 µg/mL of Mouse Anti-4-Hydroxynonenal Monoclonal Antibody (Catalog # MAB3249). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

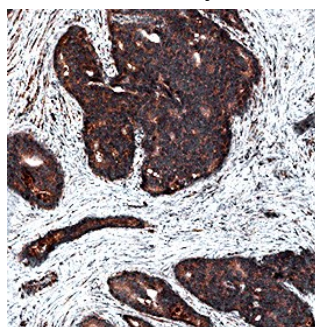


### Immunohistochemistry



**4-Hydroxynonenal in Human Prostate.** 4-Hydroxynonenal was detected in immersion fixed paraffin-embedded sections of human prostate using Mouse Anti-4-Hydroxynonenal Monoclonal Antibody (Catalog # MAB3249) at 0.1 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm. View our protocol for [IHC Staining with VisUCyte HRP Polymer Detection Reagents](#).

### Immunohistochemistry



**4-Hydroxynonenal in Human Prostate Cancer Tissue.** 4-Hydroxynonenal was detected in immersion fixed paraffin-embedded sections of human prostate cancer tissue using Mouse Anti-4-Hydroxynonenal Monoclonal Antibody (Catalog # MAB3249) at 0.5 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm. View our protocol for [IHC Staining with VisUCyte HRP Polymer Detection Reagents](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

4-hydroxy-2-nonenal (4-hydroxynonenal, 4-HNE) is a highly reactive aldehyde generated by the exposure of polyunsaturated fatty acids to peroxides and reactive oxygen species (ROS). It non-enzymatically forms stable protein adducts with histidine, lysine, and cysteine side chains that have been used as biomarkers for oxidative damage in cells. Conditions where 4-HNE immunoreactivity has been observed include include inflammation, neurodegenerative diseases, and ischemic damage to the heart and brain.