ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

4-Hydroxy-2-nonenal (HNE)

Cat # HNE51-1	**SIZE**: 1 mg	**FORM:** Soln in ethanol
Cat # HNE51-5	**SIZE**: 5 mg	**FORM:** Soln in ethanol
Cat # HNE51-10	**SIZE**: 10 mg	**FORM:** Soln in ethanol

HNE is a major product of endogenous lipid peroxidation. The w-6-family (linoleic and arachidonic acids) of polyunsaturated fatty acids may produce HNE as a result of free radical attack. HNE is a highly reactive compound and it can react with several functional groups on biological material, particularly sulfydryl groups to form thioester adduct and then hemiacetals. HNE may also react with histidine and lysine residues of proteins to form stable Michael addition-type of adducts. HNE-modified proteins may display an altered biological functions. Antibodies to HNE will help to visualize the HNE-adducts.

Source

Synonyms 4-HNE
CAS Number 18286-49-2
Molecular Formula C9H16O2
Formula Weight 156.2
Purity >98%
λmax 221 nm
Concn: 10 mg/ml
Stability 6 months at –80oC
Storage -80℃
Shipping Dry ice

Suggested usage:

4-HNE is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of 4-HNE in these solvents is at least 50 mg/ml. 4-HNE is stable for at least three months in these solvents if stored at -80℃. Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of 4-HNE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 4-HNE in PBS (pH 7.2) is at least 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

General References: (1) Yoritaka, A et al (1996) Proc. Natl. Acad. Sci. 93, 2696-2701; Uchida, K. (1995) Arch Biochem. Biophys 324, 241-248; Quinn, MT et al (1995) J. Leukocyte Biol. 57, 415-421; Okamoto, K. (1994) Int. J. Cancer 58, 825-829; Uchida K et al (1993) Proc. Natl. Acad. Sci. 90, 8742-8746.

Citations of ADI's HNE antibodies (see complete list at the web site).

Carter JE 2002 Involvement of redox events in caspase activation in zinc-depleted airway epithelial cells **BBRC 297, 1062-1070** IF/human and sheep lung cells/tissues

McKim SE 2002 Cocoa extract protects against early alcohol-induced liver injury in the rat **Arch. Biochem. Biiophys. 406, 40-46** IHC

Tsuneyama M eat al 2002 Damaged interlobular bile ducts in primary biliary cirrhosis show reduced expression of glutathione-S-transferase-pi and aberrant expression of 4-hydroxynonenal **Journal of Hepatology 37, 176-183** IHC

Ishigami A, 2003 Immunohistochemical study of myoglobin and oxidative injury-related markers in the kidney of methamphetamine abusers, **Legal Medicine in press 1-7 pages**, IHC

Tsuneyama K et al 2002 Damaged interlobular bile ducts in primary biliary cirrhosis show reduced expression of glutathione-S-transferase-pi and aberrant expression of 4-hydroxynonenal **J Hepatology 37, 176-183** IHC

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Kono, Hiroshi 2001 Development of an animal model of chronic alcohol-induced pancreatitis in the rat **Am J Physiol Gastrointest Liver Physiol 280: G1178-G1186,** IHC,

Kono H et al 2001 Ebselen prevents early alcohol-induced liver injury in rats **Free Radical Biology and Medicine, Volume 30, , Pages 403-411**, IHC,

Tuder RM2003 OXIDATIVE STRESS AND APOPTOSIS INTERACT AND CAUSE EMPHYSEMA DUE TO VEGF RECEPTOR BLOCKADE **Am. J. Respir. Cell Mol. Biol., Jan 2003**; in press IHC

Nyhlin N et al 2002 Reduction of free radical activity in amyloid deposits following liver transplantation for familial amyloidotic polyneuropathy **J Intern Med 2002; 251: 136-141** IHC,

Tokunaga I 2003 Toluene inhalation induced 8-hydroxy-2'-deoxyguanosine formation as the peroxidative degeneration in rat organs **Legal Medicine in press 1-8 pages** IHC

All products are for in vitro research use only.

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