

Study on senescent product as a biomarker

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Trans-2-nonenal is an unsaturated aldehyde with an unpleasant greasy and grassy odor endogenously generated during the peroxidation of polyunsaturated fatty acids. 2-Nonenal covalently modified human serum albumin through a reaction in which the aldehyde preferentially reacted with the lysine residues. Using high performance liquid chromatography with on-line electrospray ionization tandem mass spectrometry (LC/ESI/MS/MS), we established a highly sensitive method for detection of a 2-nonenal-histidine adduct and confirmed that the adduct was indeed formed during the lipid peroxidation-mediated modification of protein *in vitro*.