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# Gamma-hydroxy-1,N(2)-propanodeoxyguanosine

National Cancer Institute

## Source

National Cancer Institute. *Gamma-hydroxy-1,N(2)-propanodeoxyguanosine*. NCI Thesaurus. Code C133745.

A mutagenic and carcinogenic cyclic 1,N2-propanodeoxy (Pd) DNA adduct derived from the reaction of deoxyguanosine (dG) in DNA with the environmentally widely available or endogenously produced mutagenic and carcinogenic unsaturated aldehyde acrolein (Acr) that can potentially be used as a biomarker for exposure to Acr, the formation of certain forms of cancer and the presence of oxidative stress. The formation of gamma-hydroxy-1,N(2)-propanodeoxyguanosine (g-OH-PdG) damages DNA and stimulates the formation of tumors. Also, as Acr is formed due to oxidation of certain polyunsaturated fatty acids (PUFAs), mostly omega-3-PUFA, the lipid peroxidation-derived DNA adduct g-OH-PdG can potentially be used as a biomarker to assess the presence of oxidized PUFAs, the level of oxidative stress and the extent of oxidative DNA damage.