

Guanine

Guanine is one of the four main [nucleobases](#) found in the nucleic acids DNA and RNA, the others being adenine, cytosine, and thymine (uracil in RNA). In DNA, guanine is paired with cytosine. The guanine nucleoside is called guanosine.

With the formula $C_5H_5N_5O$, guanine is a derivative of purine, consisting of a fused pyrimidine-imidazole ring system with conjugated double bonds. Being unsaturated, the bicyclic molecule is planar.

The mutagenic/cytotoxic effect of MTIC is associated with [alkylation](#) (adding an alkyl group, the smallest of which is a methyl group) to DNA at various sites primarily at the O6 and N7 positions on [guanine](#).

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Last update: **2024/06/07 02:51**

