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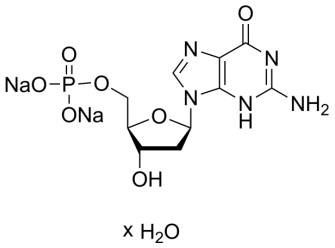
2'-Deoxyguanosine 5'-monophosphate disodium hydrate

Cat. No.:	HY-145538
CAS No.:	146877-98-7
Molecular Formula:	$C_{10}H_{14}N_5O_7.H_2O.2Na$
Target:	DNA/RNA Synthesis
Pathway:	Cell Cycle/DNA Damage
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



x H_2O

BIOLOGICAL ACTIVITY

Description

2'-Deoxyguanosine 5'-monophosphate (5'-Deoxyguanylic acid; dGMP) disodium hydrate is an oxidizable target of the photosensitizer pterin (PT) and can be used to evaluate the photosensitizing properties of biopterins (such as Bip, Fop and Cap) . Pterin causes a photosensitive reaction of dGMP under UV-A radiation, causing damage to DNA molecules. There are two main mechanisms for the photosensitive oxidation of purine nucleotides by pterin in vitro: one is the hydrogen abstraction reaction of electron transfer from dGMP to the triplet excited state of pterin (type I mechanism), and the other is the interaction between dGMP and pterin. The reaction produces singlet molecular oxygen (1O2) (Type II mechanism)[1][2].

REFERENCES

[1]. Petroselli G, Dántola M L, Cabrerizo F M, et al. Oxidation of 2 '-Deoxyguanosine 5 '-Monophosphate Photoinduced by Pterin: Type I versus Type II Mechanism[J]. Journal of the American Chemical Society, 2008, 130(10): 3001-3011.

[2]. Song B, Sigel H. Metal Ion-Coordinating Properties of 2 '-Deoxyguanosine 5 '-Monophosphate (dGMP2-) 1 in Aqueous Solution. Quantification of Macrochelate Formation[J]. Inorganic Chemistry, 1998, 37(8): 2066-2069.

Caution: Product has not been fully validated for medical applications. For research use only.

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