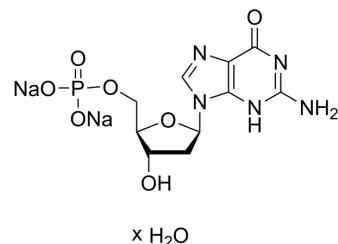


## 2'-Deoxyguanosine 5'-monophosphate disodium hydrate

Cat. No.:	HY-145538
CAS No.:	146877-98-7
Molecular Formula:	C <sub>10</sub> H <sub>14</sub> N <sub>5</sub> O <sub>7</sub> ·H <sub>2</sub> O·2Na
Target:	DNA/RNA Synthesis
Pathway:	Cell Cycle/DNA Damage
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### 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 ( $^1O_2$ ) (Type II mechanism)<sup>[1][2]</sup>.

### 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 (dGMP<sup>2-</sup>)<sup>-1</sup> 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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