

# PRODUCT INFORMATION



## 2'-Deoxyadenosine-5'-O-triphosphate (sodium salt hydrate)

Item No. 32566

**Formal Name:** ((2R,3S,5R)-5-(6-amino-9H-purin-9-yl)-3-hydroxytetrahydrofuran-2-yl)methyl hydrogen triphosphate, trisodium salt, hydrate

**Synonym:** dATP

**MF:** C<sub>10</sub>H<sub>13</sub>N<sub>5</sub>O<sub>12</sub>P<sub>3</sub> • 3Na [XH<sub>2</sub>O]

**FW:** 557.1

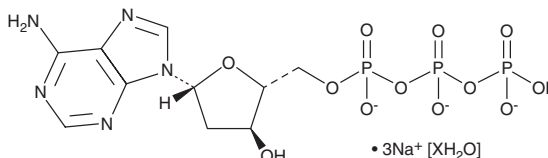
**Purity:** ≥95%

**UV/Vis.:** λ<sub>max</sub>: 259 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

2'-Deoxyadenosine-5'-O-triphosphate (dATP) (sodium salt hydrate) is supplied as a crystalline solid. Aqueous solutions of dATP (sodium salt hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of dATP (sodium salt hydrate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

dATP is a purine nucleotide and derivative of the nucleic acid adenosine 5'-triphosphate (Item No. 14498).<sup>1</sup> dATP is a substrate for DNA polymerase in the synthesis of DNA.<sup>2</sup> It is a noncompetitive inhibitor of ribonucleotide reductases, which provides feedback inhibition during DNA synthesis.<sup>1</sup> dATP has commonly been used in DNA synthesis, sequencing, and labeling in research applications.<sup>3,4</sup> dATP accumulates in adenosine deaminase deficiency, a disorder characterized by mutations in the gene for adenosine deaminase, the enzyme that catalyzes the deamination of adenosine and deoxyadenosine.<sup>5</sup>

### References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. Key steps in nucleotide biosynthesis are regulated by feedback inhibition. *Biochemistry*. 5<sup>th</sup> edition, W.H. Freeman (2002).
2. Berg, J.M., Tymoczko, J.L., and Stryer, L. DNA is replicated by polymerases that take instructions from templates. *Biochemistry*. 5<sup>th</sup> edition, W.H. Freeman (2002).
3. Cadwell, R.C. and Joyce, G.F. Randomization of genes by PCR mutagenesis. *PCR Methods Appl.* **2(1)**, 28-33 (1992).
4. Steffens, D.L., Jang, G.Y., Sutter, S.L., et al. An infrared fluorescent dATP for labeling DNA. *Genome Res.* **5(4)**, 393-399 (1995).
5. Flinn, A.M. and Gennery, A.R. Adenosine deaminase deficiency: A review. *Orphanet J. Rare Dis.* **13(1)**, 65 (2018).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM