Cambridge Isotope Laboratories, Inc.
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Fluorine-Labeled Nucleotide 5'-Triphosphates

The fluorine nucleus is extremely sensitive to the local chemical environment, which leads to a wide chemical shift range, thus making it an excellent probe for secondary structure, especially where the chemical shift dispersion is limited, such as in RNA. Although researchers have used ^{19}F-NMR to study nucleic acids for decades, only recently has a larger RNA been uniformly labeled with fluorine and investigated using ^{19}F-NMR.[1]

CIL is pleased to offer new fluorinated nucleotide 5'-triphosphates for use in studying structure and dynamics of RNA using ^{19}F-NMR.

Products of Interest

Catalog No.	Description	Size*
ULM-10696-CA	5-Fluorouridine 5'-Triphosphate (5F-UTP)	0.1 mmole
ULM-10697-CA	5-Fluorocytidine 5'-Triphosphate (5F-CTP)	0.1 mmole
ULM-10698-CA	2-Fluoroadenosine 5'-Triphosphate (2F-ATP)	0.1 mmole

*1 mL of a 100 mM solution in H_2O, pH 7.5

Reference

1. Sochor, F.; Silvers, R.; Muller, D.; Richter, C.; Furtig, B.; Schwalbe, H. **2016**. ^{19}F-labeling of the adenine H2-site to study large RNAs by NMR spectroscopy. *J Biomol NMR, 64,* 63-74.

Custom Synthesis Capabilities!

Please inquire if you are interested in other fluorine-containing molecules.

Cassia, LLC was founded in 2005 by Dr. Jamie Williamson and Dr. Lincoln Scott. CIL and Cassia have a special relationship that makes use of CIL's isotopic material production and marketing and Cassia's special knowledge of RNA and DNA biosynthesis. Since 2005, CIL and Cassia have developed the most extensive product line of stable isotope-labeled RNA and DNA triphosphates, DNA phosphoramidites, and other related compounds.

Continued ➤

Exclusively distributed by: **Cambridge Isotope Laboratories, Inc.**
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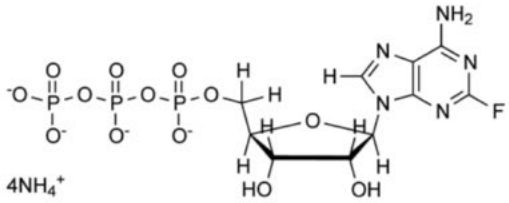
Certificate of Analysis



Product:	2-Fluoroadenosine 5′-Triphosphate
Isotope:	(Non-Isotopic Labeled Material)*
Salt Form:	Ammonium
Catalog#:	ULM-10698-CA
Lot#:	20180523 (Retest: Every 5 Years)
CAS#:	1492-62-2 (Natural Abundance)‡
M.W.:	593.30
Formula:	$C_{10}H_{27}FN_9O_{13}P_3$
Unit:	0.1 mmole (100 mM)† in H_2O, pH 7.5
Storage:	≤ -20 °C, Avoid Repeated Freeze-Thaw Cycles

Certification

Cassia, L.L.C. guarantees that this material meets or exceeds the specifications stated. Absolute identity; as well as, chemical, and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible.

Approved by: *Lincoln G. Scott*

Lincoln G. Scott, CSO 08 June 2018

Quality Control Test	Specification	Result
Appearance of Solid	White Powder	Conforms
Solubility (100 mM in Water, pH 7.5)	Clear; Colorless to Pale Yellow	Conforms
UV-VIS for Concentration (in 10 mM PBS, pH 7.5)†	100.0 mM	100.0 mM ± 0.5
pH Analysis	7.50	7.50 ± 0.10
HPLC for Chemical Purity	≥ 90%	97.08% ± 2.16
^{1}H-NMR for Identification and Chemical Purity	rATP Standard	Conforms
ESI-HRMS for Identification (Mono-Isotopic)	523.9790 $[C_{10}H_{15}FN_5O_{13}P_3 - H]^-$	523.9788 (Δ -0.4 ppm)
In vitro Transcription Test	$R^2 \geq 0.9600$	$R^2 = 0.9909 \pm 0.0084$

* Isotope position(s) in figure; † ε_{260} (M^{-1}•cm^{-1}, pH 7.5) 14,200; ‡ Free acid basis; § Starting material(s)

This Product is for Laboratory Use Only. Cassia, LLC. manufactures highly pure research compounds which are for research applications only – not for diagnostic purposes. Persons intending to use these products for other applications do so at their own responsibility and must comply with all appropriate regulations.

CASSIA, LLC
Nucleotides for the masses...