

# Non-hydrolyzable ATP Test Kit

Screening Kit for ATP-binding proteins

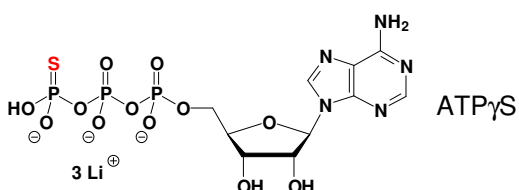
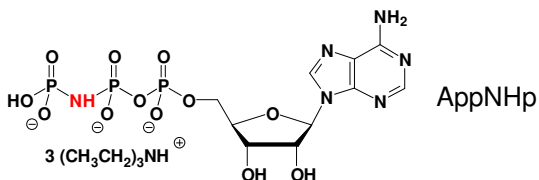
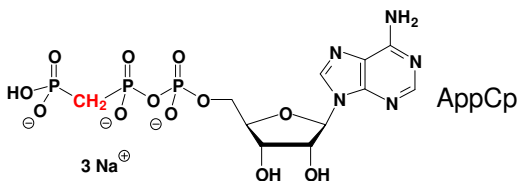
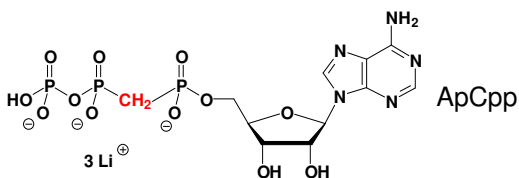
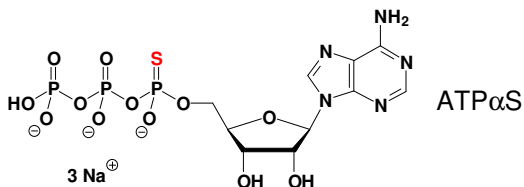
Cat.No.: NK-101

## Kit Contents

Non-hydrolyzable Adenosine Nucleotide	Cat-No.	Amount
ATP $\alpha$ S	NU-408	100 Units
ApCpp	NU-421	100 Units
AppCp	NU-422	100 Units
AppNHp	NU-407	100 Units
ATP $\gamma$ S	NU-406	5 mg

1 Unit = 1  $\mu$ l of a 10 mM solution

## Structures



## Introduction

The enzymes involved in hydrolysis of nucleoside triphosphates are a major focus of biochemical research, targeting the understanding and treatment of cellular processes involved in diseases such as cancer, viral infections, cardiovascular and motional disorders. To elucidate the mechanisms of action of these enzymes, it is often desirable to trap the enzymes in their triphosphate-bound state. Since natural nucleotides are hydrolyzed at rates usually preventing such studies, nucleotide analogs are used that are hydrolyzed at much smaller rates or that are even completely resistant to hydrolysis.

## Kit Description

The Non-hydrolyzable ATP Test Kit contains a set of 5 typical non-hydrolyzable Adenosine-5'-triphosphate analogs.

The position of the modification within the triphosphate exerts influence on its binding affinity to a particular enzyme and its hydrolysis rate.

This Kit is designed to identify the most suitable non-hydrolyzable ATP derivative for your application.

## Selected References:

OsumiDavis *et al.* (1996) Effect of alpha-Thio-ATP on the steady-state kinetics of nucleotide incorporation catalyzed by the wildtype and active-site mutant T7 RNA polymerases. *Biophys. J.* **70** (2):SU480, Part 2.

Bivalacqua *et al.* (2002) Comparative responses to alpha,beta-methylene-ATP in cat pulmonary, mesenteric, and hindquarter vascular beds. *Appl. Physiol.* **93** (4):1287.

Toyoshima *et al.* (2004) Crystal structure of the calcium pump with a bound ATP analogue. *Nature* **430**:529.

Shi *et al.* (1999) EDC cross-linking of actin and myosin S1. II. AMPPNP induces an allosteric transition from pre-hydrolysis state to posthydrolysis state. *Biophys. J.* **76** (1):A163.

Yengo *et al.* (2001) Myosin V is weakly bound to actin in the presence of ATPgammas. *Biophys. J.* **80** (1):2609, Part 2.

## Storage and Stability

Short term exposure (up to 1 week cumulative) to ambient temperature is possible. Long term storage is recommended at < -20°C. If properly stored, Jena Bioscience guarantees optimal performance of the nucleotides for 12 months after date of delivery.