

Non-hydrolyzable GTP Test Kit

Screening Kit for GTP-binding proteins

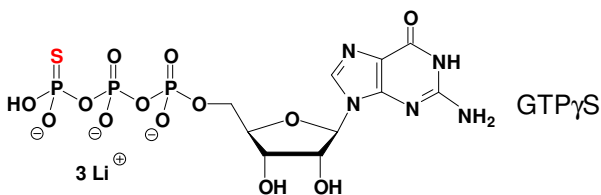
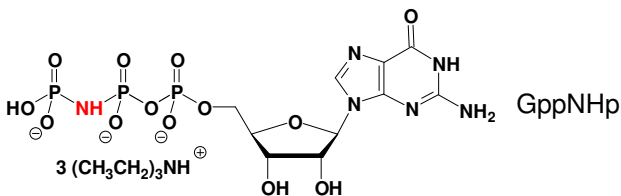
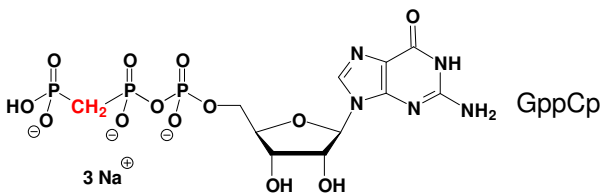
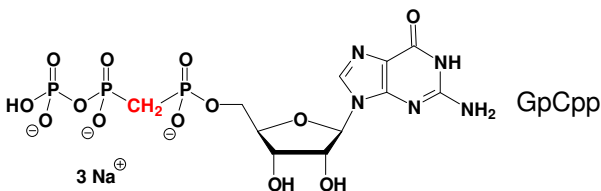
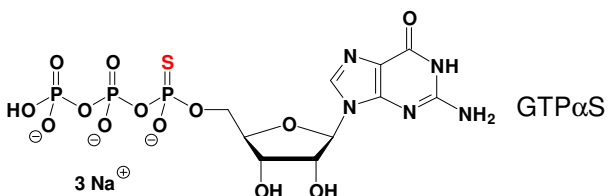
Cat.No.: NK-102

Kit Contents

Non-hydrolyzable Guanosine Nucleotide	Cat-No.	Amount
GTP α S	NU-409	100 Units
GpCpp	NU-405	100 Units
GppCp	NU-402	100 Units
GppNHp	NU-401	100 Units
GTP γ S	NU-412	5 mg

1 Unit = 1 μ 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 GTP Test Kit contains a set of 5 typical non-hydrolyzable Guanosine-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 GTP derivative for your application.

Selected References:

Ryder *et al.* (1999) Nucleotide analog interference mapping. *Methods* **18** (1):38.

Muller-Reichert *et al.* (1998) Structural changes at microtubule ends accompanying GTP hydrolysis: information from a slowly hydrolyzable analogue of GTP, guanylyl(alpha,beta) methylenediphosphonate. *Proc. Natl. Acad. Sci. USA* **95** (7):3661.

Dye *et al.* (1996) Assembly of microtubules from tubulin bearing the nonhydrolyzable guanosine triphosphate analogue GMPPCP [Guanylyl 5'-(beta,gamma-methylenediphosphonate)]: Variability of growth rates and the hydrolysis of GTP. *Biochemistry-US* **35** (45):14331.

Esters *et al.* (2001) High-resolution crystal structure of *S. cerevisiae* Ypt51(Delta C15)-GppNHp, a small GTP-binding protein involved in regulation of endocytosis. *J. Mol. Biol.* **298** (1):111.

Shiba *et al.* (2002) Hypocretin stimulates [(35)]GTP gamma S binding in Hcrt2-transfected cell lines and in brain homogenate. *Biochem. Biophys. Res. Co.* **294** (3):615.

Storage and Stability

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