

## NADP+/NADPH assay kit

NADP+/NADPH Assay Kit

CATALOG #  
AAA44639

### PRODUCT SYNONYMS

NADP+/NADPH; NADP+/NADPH Assay Kit; NADP+/NADPH assay kit

### PRODUCT SPECIFICATIONS

#### Preparation and Storage

Upon receipt, store the NADP Cycling Enzyme and NADP+ Standard at -80 degree C. Store the Colorimetric Probe at -20 degree C. Store the remaining components at 4 degree C.

### ADDITIONAL INFORMATION

#### Related Product Information for NADP+/NADPH assay kit

**Principle of the Assay:** NADP+ /NADPH Assay Kit is a convenient quantitative tool that measures NADP+ and NADPH within biological samples. The assay is based on an enzymatic cycling reaction in which NADP+ is reduced to NADPH. NADPH reacts with a colorimetric probe that produces a colored product which can be measured at 450 nm. The intensity of the product color is proportional to the NADP+ and NADPH within a sample. A simple acid or base treatment will differentiate NADPH from NADP+ within a sample. Samples and standards are incubated for 1-4 hours and then read with a standard 96-well colorimetric plate reader (Figure 1). Samples are compared to a known concentration of NADP+ standard within the 96-well microtiter plate format.

**Background/Introduction:** Nicotinamide adenine dinucleotide phosphate (NADP+) is an enzymatic cofactor involved in metabolic redox and cell signaling reactions. Its main function in animal metabolism is to shift electrons from one redox reaction to another. During these reactions, the coenzyme cycles between the electron donating reduced form (NADPH) and the electron accepting oxidized form (NADP+). The major source of NADPH produced in animal cells is the oxidative branch of the pentose phosphate pathway (PPP). NADPH is involved with macromolecule biosynthesis by providing reducing power. These characteristics have made NADPH an important molecule in cancer cell proliferation and metabolism. NADPH is also involved in the accumulation of Reactive Oxygen Species (ROS) and protecting against its toxicity. It is also involved in anabolic pathways, such as fatty acid elongation and lipid and cholesterol synthesis. Understanding the metabolism of these cofactors has become important to developing new therapeutic methods against pathological disease states. NADP+/NADPH Assay Kit is a simple colorimetric assay that can measure both NADP+ and NADPH present in biological samples such as cell lysates or tissue extracts in a 96-well microtiter plate format. The kit is specific for NADP+, NADPH, and their ratio. The kit will not detect NAD or NADH. Each kit provides sufficient reagents to perform up to 100 assays, including blanks, NADP+ standards and unknown samples. The total NADP+/NADPH concentrations of unknown samples are determined by comparison with a known NADP+ standard. Determination of both NADP+ and NADPH requires two separate samples for quantification. NADP+ and NADPH do not need to be purified from samples, but rather can be extracted individually with a simple acid or base treatment prior to performing the assay. The kit has a detection sensitivity limit of approximately 4 nM NADP+.

#### Product Categories/Family for NADP+/NADPH assay kit

Metabolism Research; Cellular Metabolism; NADP+/NADPH Assay

**For Research Use Only.** Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.