

## Glutamine Assay Kit

Glutamine Assay Kit (Fluorometric)

CATALOG #

**AAA44696**

### PRODUCT SYNONYMS

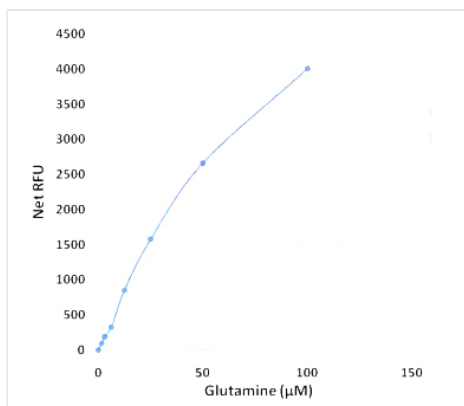
Glutamine; Glutamine Assay Kit (Fluorometric); Glutamine assay kit

### PRODUCT SPECIFICATIONS

Detection Method

Fluorometric

### IMAGES



Standard Curve (Sample)

## ADDITIONAL INFORMATION

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| <b>Related Product Information for<br/>Glutamine assay kit</b> | <p>Background: Glutamine is a conditionally essential amino acid (needed from the diet under stress conditions) that is used in protein biosynthesis. The glutamine side chain is almost identical to glutamic acid, except the carboxylic acid group on the side chain is replaced by an amide group. Glutamine is the most abundant free amino acid in human blood. Many food sources are rich in glutamine including proteinrich foods such as dairy products, eggs, fish, chicken, beef, as well as vegetables like beans, beets, cabbage, spinach, and carrots. In addition to protein synthesis/function, glutamine plays a role in acidbase balance in the kidney by producing ammonium, as a source of cellular energy next to glucose, and as a nitrogen donator for many anabolic processes such as the synthesis of purine. Cancer cells rely on glutamine as a nitrogen and carbon source. The importance of glutamine in certain tumors has been demonstrated. For example, blocking glutamine metabolism was shown to inhibit growth of several tumors such as breast, liver, kidney and T-cell lymphoblastic leukemia. The Glutamine Assay Kit is a simple assay for measuring glutamine levels in biological samples without any need for pretreatment. The kit has a detection sensitivity limit of 1.56 uM glutamine. Each kit provides sufficient reagents to perform up to 200 assays*, including standard curve and unknown samples.</p> <p>Principle of the Assay: The Glutamine Assay Kit is a sensitive quantitative fluorometric assay for glutamate. Glutaminase converts glutamine and H<sub>2</sub>O to glutamate and NH<sub>3</sub>. Glutamate oxidase converts glutamate to alpha-ketoglutarate and NH<sub>3</sub> as well as H<sub>2</sub>O<sub>2</sub>. L-alanine and glutamate-pyruvate transaminase are also added to the reaction in order to regenerate glutamate and H<sub>2</sub>O<sub>2</sub>. As a result, multiple rounds of the reaction occur which results in significant amplification of H<sub>2</sub>O<sub>2</sub> production. In the presence of HRP, the Fluorometric Probe reacts with H<sub>2</sub>O<sub>2</sub> in a 1:1 stoichiometry to produce highly fluorescent Resorufin. The Resorufin product can be easily read by a fluorescence microplate reader with an excitation of 530-560 nm and an emission of 590 nm (Figure 1). Fluorescence values are proportional to the glutamine levels within the samples. The glutamine content in unknown samples is determined by comparison with a standard curve.</p> |
| <b>Product Categories/Family for<br/>Glutamine assay kit</b>   | <b>Metabolism Research; Amino Acid Metabolism; Glutamine Assay Kit (Fluorometric)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**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.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | [contact@aaabiotech.com](mailto:contact@aaabiotech.com)  
Online datasheet: <https://stage.aaabiotech.com/assay-kits/glutamine/44696>