immusmol

L-Asparagine ELISA Kit

IS-I-1600R

In order to provide an accurate and easy-to-implement tool to evaluate L-Asparagine (Asn) functions, we developed and validated a novel ELISA kit (#IS-I-1600R) for Asn quantitation in plasma samples. The assay requires a sample volume as low as 20µL and is characterized by a 2.3µM sensitivity.

SCIENTIFIC BACKGROUND

L-Asparagine (Asn) is a conditionally non-essential amino acid that can be produced in our body. However, Asn is essential for the growth of highly proliferative cells such as cancers and it must be provided by the environment. Targeting Asn using recombinant Asparaginase – as to deprive tumor cells of an important energetic source – thus represents an attractive target and has been for instance approved for the treatment of Acute Lymphoblastic Leukemia **(1)**.

Also, while targeting Asn metabolism figures as an attractive therapeutic avenue, Asn level constitutes a valuable biomarker. Indeed, among other evidence, it has been shown that quantification of Asn nicely discriminates healthy subjects from patients with Epithelial Ovarian Cancer **(2)**. More recently, increased Asn level has been linked to poor survival in female patients with colorectal cancer **(3)**.

Altogether, this set of information motivated our interest in establishing a robust immuno-assay to accurately quantify Asn in biological fluids.

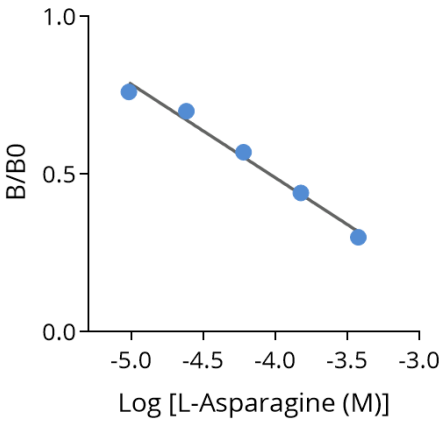
(1) https://pubmed.ncbi.nlm.nih.gov/35205650/; **(2)** https://pubmed.ncbi.nlm.nih.gov/33746017/; **(3)** https://www.mdpi.com/2218-1989/12/2/164

ASSAY SPECIFICATIONS

Format	96-well kit
Species Reactivity	Any species
Samples	Plasma
Sample volume	20µL
Sensitivity	2.3µM (0.30µg/mL)
Assay range	4.4 - 375µM (0.6 – 49.5µg/mL)
Assay time	Sample preparation: 3h ELISA overnight

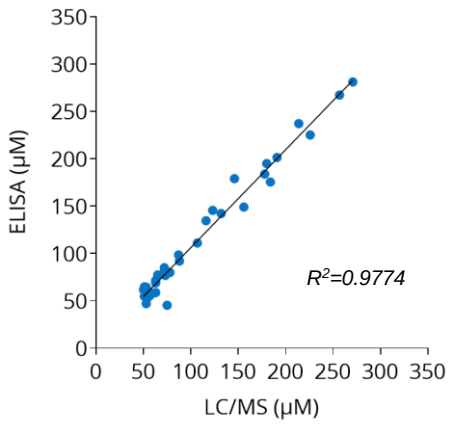
STANDARD CURVE

Standard curve obtained with the L-Asparagine ELISA kit. In this competitive enzyme Immunoassay, optical density is inversely correlated with L-Asn levels within a linear range of 4.4 - 375µM.



METHOD VALIDATION

L-Asn was quantified in human EDTA plasma samples from 40 subjects using IS-I-1600R ELISA kit or by LC/MS. Correlation between both methods gave a R-squared value above 0.97, thereby confirming the accuracy of the immunoassay.



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