CITRULLINE ELISA

SERUM, PLASMA, URINE AND OTHER BIOLOGICAL FLUIDS

ADVANTAGES

- → Speed and ease of use
- → Use with various samples
- → Small sample volumes
- → High sample dilution during sample preparation: possibility of using any biological fluid
- → Easy sample clean up by use of an extraction plate
- → High sensitivity
- → No known interferences by structurally similar substances
- → No column purification or extra consumables needed
- → Wide standard range with ready to use standards
- → Excellent validation data for the use of serum, plasma and urine
- → Customer Service! – We use the kits we sell and we always offer a 24 hour turn-around time on almost all technical questions

SPECIFICITY

SUBSTANCE	CROSS REACTIVITY (%)
L-Arginine	<0.001
L-Glutamine	<0.001
L-Ornithin	<0.001

ASSAY PRINCIPLE

First, the samples are cleaned up by an extraction procedure. After derivatization Citrulline is quantitatively determined by ELISA. The competitive ELISA uses the microtiter plate format. The antigen is bound to the solid phase of the microtiter plate. The derivatized standards, controls and samples and the solid phase bound analyte compete for a fixed number of antiserum binding sites. When the system is in equilibrium, free antigen and free antigen-antiserum complexes are removed by washing. The antibody bound to the solid phase is detected by an anti-rabbit IgG-peroxidase conjugate using TMB as a substrate. The reaction is monitored at 450 nm.
Quantification of unknown samples is achieved by comparing their absorbance with a reference curve prepared with known standards.

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CITRULLINE

ESSENTIAL INFORMATION

Citrulline is a non-essential amino acid that is not incorporated into protein, and is present as a free amino acid in most biological fluids such as plasma, urine and cerebrospinal fluid. It is a byproduct of the enzymatic production of nitric oxide from the amino acid arginine, catalyzed by nitric oxide synthase. That means the conversion of L-arginine to L-citrulline and thus elevated levels of citrulline in urine, plasma and serum can be used as a surrogate marker for the NO synthesis. Elevated NO synthesis plays a significant role in inflammatory processes and has been implaced in several autoimmune disorders.

The metabolism of citrulline is mainly divided between the intestine (synthesis) and the kidneys (degradation). Because of this specificity, citrulline can act as a reliable functional marker for these two organs. Severe renal failure (especially of the proximal tubules) is characterized by hypercitrullinaemia. Citrulline is an efficient marker of the active small bowel mass. Furthermore citrulline is released especially in macrophages, neural cells and endothelial cells during the synthesis of NO by NO-synthase from arginine.

LDN has developed an Enzyme-Linked Immunosorbent Assay (ELISA) which is useful for measuring Citrulline levels under different healthy and pathological conditions. The assay characteristics were established for the use of serum, plasma, urine and many other different kinds of biological samples.

CITRULLINE ELISA

Enzyme-linked immunoassay for the quantitative determination of Citrulline in plasma and serum.

Easy sample preparation. Derivatization in liquid phase. 96 wells per kit. 6 standards (do not change from lot to lot), 2 controls, ready for use.

Time: sample preparation 2.5 h and ELISA overnight.

Plasma, serum, urine and various other biological fluids.

KIT DETAILS CITRULLINE ELISA – TECHNICAL DATA

CAT NO.	SAMPLE SIZE	STANDARDS	SENSIVITY	FORMAT
BA E-2800	50 µl	0/0.6 - 60 µg/ml	0.23 µg/ml	96 wells

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