Quinaldic Acid-BSA ELISA Coated Plate

*Cat.No: DEIACP6*

Lot. No. (See product label)

**Size**

96T

**Intended use**

Quinaldic Acid-BSA Coated 96-Well Plates are designed for indirect ELISA-based quantitative determination of immunoglobulins to conjugated Quinaldic Acid, in biological liquids.

Plates are activated to 200µl and supplied pre-blocked with Gemac blocking buffer.

The 96-well plates are supplied ready to use. It is not necessary to rinse the plate prior to add reagents.

**General Description**

The main route of catabolic tryptophan degradation is through kynurenine pathway (KP) (Beadle et al., 1947). Three enzymes with different features have been implicated in the first step of tryptophan degradation along the kynurenine pathway (KP): Tryptophan-2, 3- dioxygenase (TDO), indoleamine 2, 3- dioxygenase 1 (IDO1) and indoleamine 2, 3-dioxygenase 2 (IDO2) (Van Baren and Van den Eynde, 2015). TDO is strongly expressed constitutively in the liver, where it is believed to be responsible for maintaining systemic TRP levels, and – albeit at lower levels – in neurons (Platten et al., 2015). IDO1, whose expression is inducible in most tissues, plays a key role in immunoregulation and the retrocontrol of immune responses (Van Baren and Van den Eynde, 2015). However, recent preclinical studies propose an alternative route of TRP degradation to IDO1 in tumors, via TDO. Indeed, tumor cells and possibly specialized myeloid cells may express and catabolise TRP via TDO instead of or in addition to IDO1 (Platten et al., 2015). Less is known about the role of IDO2, the third enzyme of the pathway (Van Baren and Van den Eynde, 2015). Indeed, IDO2 is not as widely expressed as IDO1. That may be due to common genetic polymorphisms in IDO2 compromising or abolishing enzymatic activity. A cross-talk or cooperation between the functions of IDO1 and IDO2 may contribute in immune regulation (Metz et al., 2007).

Tryptophan catabolism achieved through the action of IDO(s) and TDO along the KP results in local accumulation of tryptophan catabolites, including kynurenine and its derivatives, depending on the presence of downstream enzymes in the KP. Although IDO(s) and TDO are located in the cytosol, the metabolic modifications they induce extend to the extracellular microenvironment because tryptophan and kynurenine derivatives readily cross the plasma membrane through specific transporters (Van Baren and Van den Eynde, 2015). Now, the immune system maintains the organism's integrity and participates in homeostasis. This system responds to all disorders through the activation of specialized cells and through antibody production. Accordingly, quantification of defined circulating antibodies is an indirect way of screening and monitoring the evolution of diseases (Geffard et al., 2010a).

Quinaldic Acid being among the major TRP metabolites via the KP activation (Duleu et al., 2008), the quantification of circulating antibodies directed against conjugated Quinaldic Acid should be therefore performed in patients that may present either neurotoxic or immunomodulatory activities due to immune activation (Geffard et al., 2010a). For example, after parasitic and other infections, in neurological conditions (Badawy, 2013), in cancer, autoimmunity, transplant and allergy (Platten et al., 2015), where IDO(s) -and/or TDO- activity can be dramatically elevated to levels exerting a major controlling influence on TRP degradation throughout the body (Badawy, 2013). Thus, statistically significant (p≤0.01) abnormal high levels of IgA directed against conjugated Quinaldic Acid were found in Amyotrophic Lateral Sclerosis (ALS), Parkinson's disease (PD), Remitting Relapsing Multiple Sclerosis (RR-MS) and secondary progressive multiple sclerosis (SP-MS) (Duleu et al., 2008). Accordingly, the quantitative determination in biological liquids of immunoglobulins directed against conjugated Quinaldic Acid is
an easy and reliable tool:
For indirectly quantifying Quinaldic Acid
When it comes to developing multi-biomarker disease activity (MBDA) tests, 1) for monitoring the evolution of chronic diseases such as mentioned above and 2) for evaluating the general effectiveness of combination poly-therapies used in the disease treatment.

Principle Of The Test

Reagents And Materials Provided

96-flat-bottom-well clear polystyrene microplate coated with 480 µg Quinaldic Acid conjugated with BSA via 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide (EDC) (5 µg/well)

Storage

Plates are packed and sealed in a pouch with desiccant. They are shipped at ambient temperature. Upon receipt, store plates between +2 and +8°C in unopened pouches. See expiry date on packaging label.

Precautions

For research use only. Not for use in diagnostic procedures. Respect usual handling precautions in laboratory. Dispose of waste observing all local, state, provincial or national regulations.

References