OPEN ACCESS Freely available online

ISSN: 2167-7956
Journal of Biomolecular Research & Therapeutics

Commentary

Importance of Enzyme-Linked Immunosorbent Assay in Biomolecules

Amina Berradia*

Department of Biotechnology, University of Oran, Oran, Algeria

DESCRIPTION

The acronym ELISA stands for Enzyme-Linked Immunosorbent Assay. It is a common laboratory test used to identify antibodies in blood. An antibody is a protein that the body's immune system generates whenever it detects toxic toxins known as antigens soluble receptors in cell supernatant or serum are a few examples. ELISA tests are usually performed in 96 well plates, allowing for the measurement of multiple samples in a controlled trial. These panels must be special super absorbent plates (e.g., NUNC Immuno plates). Each ELISA tests for a specific antigen and kits for a wide range of antigens are widely available.

The sample (e.g., urine, serum or cell supernatant) is then added. Any allergen that is present in the specimen will connect to the primary antibodies already on the plate. To ensure that samples fall within the sensing levels of the assay they are typically added in duplicate or duplicate (to allow for data analysis) and at varying concentrations. Any remaining sample is washed from the plate. This antibody is labeled with an enzyme, typically peroxidase or alkaline phosphatase. The aim antigen that is already bound to the plate is identified by the detection antibody. Finally the plate is protected with a substrate. ELISA assays are typically chromogenic, utilizing a reaction that converts the substrate into a coloured product that can be measured using a plate reader.

It requires the creation of a standard curve using sampling interval of antigen. The optical density can then be used to calculate the antigen concentration in a sample. The Enzyme-Linked Immunosorbent Assay (ELISA) is the holy grail in immunoassays. This extremely sensitive immunological test is used to detect and accurately measure substances such as antibodies, proteins, glycoproteins and hormone levels. These products are detected by combining antibodies and antigens to produce a measurable result. This same immune system generates antibodies which are enzymes.

An antigen is a protein that can come from anywhere, when bound to an antibody causes a chain reaction in the body's immune system. This interaction is used in ELISA testing and allows for the identification of specific protein antibodies and antigens using only small amounts of a test sample. ELISA checking is used to diagnose HIV/Aids in addition to pregnancy tests and blood typing. In this it also explains the fundamental principles, procedures and clinical significance of the ELISA. ELISAs have a wide range of applications including rapid antibody screening tests for the influenza virus detection of other pathogens, microbes, microorganisms, immune disorders, food allergens, blood typing and also the presence of the pregnancy hormone hCG, laboratory and clinical research, forensic toxicology and many other diagnostic settings. The medical professionals is required for proper specimen collection, testing, interpretation, diagnosis and effective patient education and treatment planning. ELISA technologies still are going to evolve and have a significant function in clinical research allowing for the development of more diagnostic and screening tests. The continued evolution of ELISA testing is promising for the future of medicine, allowing for the improvement of early HIV diagnosis and pregnancy detection.

Correspondence to: Amina Berradia, Department of Biotechnology, University of Oran, Oran, Algeria, E-mail: berradia@gmail.com

Received: 02-Jan-2023, Manuscript No. BOM-23-20344; **Editor assigned:** 05-Jan-2023, Pre QC No. BOM-23-20344(PQ); **Reviewed:** 20-Jan-2023, QC No. BOM-23-20344; **Revised:** 26-Jan-2023, Manuscript No. BOM-23-20344 (R); **Published:** 03-Feb-2023, DOI: 10.35248/2167-7956.23.12.257.

Citation: Berradia A (2023) Importance of Enzyme-Linked Immunosorbent Assay in Biomolecules. J Biol Res Ther. 12:257.