Molecular and conventional analysis techniques

Molecular analysis techniques

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Real-Time Polymerase Chain Reaction (PCR-RT).

Enzyme-Linked Fluorescence Assay (ELFA).

Highly sensitive, specific and rapid techniques, which allow the detection of a fragment of genetic material of a microorganism present in a food.

Pulsed Field Gel Electrophoresis (PFGE), a highly discriminatory, stable and reproducible technique, considered the method of choice in the molecular epidemiology of pathogenic bacteria; It determines the molecular subtyping (genetic fingerprint of the pathogen), through the complete analysis of the Nucleic Acid of the bacterium with the use of restriction enzymes that digest the DNA in specific segments and sizes, generating a unique and exclusive pattern of the bacterium, which is compared with the database of PulseNet of the CDC (Control Disease Center) to determine the origin and worldwide distribution of the pathogen.

Conventional Analysis Techniques.

Methodologies used for the isolation and identification of pathogenic organisms, in which selective and differential nutrition media are used for the isolation of the bacteria of interest.

Additionally, the presence of Clenbuterol is determined through the Enzyme-Linked Immunosorbent Assay (ELISA), a methodology aligned with the one used by the Ministry of Health, in which serum and urine samples of cattle from production units enrolled in the Reliable Supplier Program, a program established by SENASICA, are analyzed, to prevent the use of this substance as part of livestock feed, as well as in support of the operations carried out with the Ministry of Health, through COFEPRIS, the Attorney General's Office (FGR) and State Governments.

All methodologies used in the Biological Contaminants Analysis Department are previously validated to ensure the reliability of the results.