

Editorial on Clinical chemistry

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Clinical chemistry (also referred to as chemical pathology, clinical biochemistry, or medical biochemistry) is a branch of chemistry that deals with the study of bodily fluids for diagnostic and therapeutic purposes. It is a form of biochemistry that is used in practice (not to be confused with medicinal chemistry, which involves basic research for drug development). The field started in the late 1800s with the use of basic chemical reaction tests for different blood and urine components. Other methods, such as the use and measurement of enzyme activities, spectrophotometry, electrophoresis, and immunoassay, have been developed over the decades as science and technology have progressed. Many blood tests and clinical urine tests are now available with comprehensive diagnostic capabilities. To handle the high workload typical of a hospital laboratory, most modern laboratories are now highly automated. The tests are meticulously supervised and quality-controlled.

Chemical pathology includes all biochemical studies. These tests can be done on any sort of bodily fluid, but serum and plasma are the most common. Serum is the yellow, watery portion of blood that remains after all blood cells have been removed and the blood has clotted.

Centrifugation, which loads the denser blood cells and platelets to the bottom of the centrifuge tube, leaving the liquid serum fraction resting above the packed cells, is the simplest way to do this. Instruments that work on the "integrated framework" concept have recently added this preliminary phase before study.

Plasma is similar to serum in that it is produced by centrifuging blood without clotting it. Until clotting, plasma is collected by centrifugation. The type of sample used is determined by the type of test required. A broad medical laboratory can accept samples for more than 700 different tests. Only the largest laboratories are unable to conduct all of these experiments in-house, and others must be referred to other laboratories.

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