



BIO CHEMISTRY ANALYZER

- The biochemistry analyzer is an instrument that measures a specific chemical composition in body fluids based on the principle of photoelectric colorimetry.
- It uses the steps of sampling, adding reagents, removing interferences, mixing, heat preservation, colorimetry, result calculation, and cleaning in biochemical analysis.
- There are many types of biochemistry analyzers. According to the degree of automation, they are divided into semi-automatic and fully automatic biochemical analyzers.
- Fully automatic biochemical analyzers are optical-mechanical integrated clinical biochemical and pathological testing equipment, which are fast, simple, sensitive, accurate, standardized.
- **The principle of biochemistry analyzer**
- The biochemistry analyzer adopts the spectrophotometric method, and its basic measurement principle is based on Beer's law.
- Lambert-Beer law is the basic law of spectrophotometry, which describes the strength of a substance's absorption of light at a certain wavelength and light-absorbing substances. The relationship between the concentration and the thickness of the liquid layer.
- The analyzer typically works in the following steps:
 1. **Sample preparation:** To facilitate the chemical reactions, the biological sample is first processed by centrifuging it to remove any cells or debris. It is then diluted or treated with particular reagents.
 2. **Sample analysis:** The prepared sample is put into the analyzer, which has several cuvettes or channels inside of it. A distinct signal is produced by the reaction of particular reagents and enzymes with the material in each channel, which is typically a change in color, absorbance, or fluorescence.

3. **Detection And Measurement:** To learn the concentration of the target analyte in the sample, the analyzer examines the signal generated by each channel and compares it with a calibration curve. Analyzing known analyte concentrations in comparable environments yields the calibration curve.
4. **Data Analysis:** Each analysis's findings, including the analyte's concentration and any relevant reference ranges or interpretations, are reported by the analyzer.