

## Circular Dichroism Spectrophotometer (J-1500, Jasco, Japan)



### Circular Dichroism (CD) Spectroscopy

Circular Dichroism (CD) spectroscopy is an essential analytical technique used to analyze chirality in molecules through their optical activity. CD can be applied to a wide variety of molecular structures but has found favor in the scientific community for the elucidation of macromolecular structure, especially proteins and nucleic acids.

► **Technical specifications:** Wavelength range: 163 – 950 nm; equipped with a Peltier thermostat; temperature range: 0–100 °C; temperature sensitivity: 0.02–10 °C; selectable scan speed: 1 – 5000 nm/min; wavelength accuracy:  $\pm 0.1$  nm from 163 to 250 nm,  $\pm 0.2$  nm from 250 to 500 nm,  $\pm 0.5$  nm from 500 to 800 nm,  $\pm 1.5$  nm from 800 to 1200 nm; absorbance, CD, and LD measurements; xenon lamp for wavelength accuracy control; standard detector: photomultiplier tube (PMT); automatic accessory recognition system; secondary structure estimation by PCR or PLS; control software: Spectra Manager (JASCO).

#### ► **Types of Measurements:**

Recording of CD, LD, and absorbance spectra of chemical compounds in solution or solid samples

Quantitative analysis based on calibration curves

Simple kinetic measurements

Time-course measurements at a single wavelength

Recording CD spectra at different temperatures

► **Total value:** 386.750 lei

► **Acquisition year:** 2024

► **Applicability:**

Determination of the secondary structure of proteins

Study of protein conformational changes

Analysis of nucleic acids (DNA/RNA)

Monitoring of biomolecular interactions

Determination of optical purity and enantiomeric composition

Characterization of chiral nanoparticles

Studies of chiral molecular assemblies on surfaces

► **Availability for Access and Use**

Contact person:

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Available for a pre-evaluation of the complexity of the samples and estimation of the working time, in the **9:30 - 17:30 interval**, based on a preliminary email or phone appointment. The system is permanently functional, during the working hours of the operators, being available for internal/external UBB services on a scheduled basis.

**Usage conditions:** exclusively by the personnel responsible for the mentioned specialty

**Analysis price - extern UBB:** Preliminary evaluation – free of charge; 400 lei/sample

**Analysis price - intern UBB:** free of charge