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# Spectroscopy, Circular Dichroism

National Cancer Institute

## Source

National Cancer Institute. *Spectroscopy, Circular Dichroism*. NCI Thesaurus. Code C19041.

Circular dichroism (CD), optical rotatory dispersion (ORD). Linearly polarized light can be thought of as a combination of right and left-handed circularly polarized light of equal phase and amplitude. ORD is the phenomenon observed when a substance exhibits a difference in the index of refraction of the right vs. left circularly polarized components, resulting in a change in the plane of polarization. When an optically active substance contains a chromophore that absorbs in the optically active region of the spectrum, CD is observed, which involves the preferential absorbance of right or left-handed circular polarized light. Both ORD and CD depend on the wavelength of the radiation and the structure of the molecule. Structural elements of proteins that exhibit differences in CD/ORD include the alpha helix, the beta sheet, and random coil segments.