

# An SRCD Journey from Brazil involving the CEDRO Beamline

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The dissemination of Synchrotron Radiation Circular Dichroism (SRCD) spectroscopy has significantly expanded the repertoire of structural biophysical methodologies available to the biomolecular community in South America. By overcoming key limitations of the conventional CD method, offering enhanced signal-to-noise ratios, providing access to the vacuum ultraviolet region, and improving the characterization of complex and low-structured systems, SRCD has become a powerful technique for probing protein secondary and tertiary structures.

In Brazil, activities in the SRCD field have mainly started in 2012 [1], following specialized training and a strong scientific collaboration with Prof. Bonnie Wallace (Birkbeck College, University of London), a leading figure in the field. This partnership enabled the transfer of expertise and laid the foundation for synchrotron-based structural spectroscopy in the country. Since then, SRCD studies in Brazil have addressed fundamental questions in protein folding, conformational stability, mechanisms of antimicrobial peptides, protein–ligand interactions, and protein incorporation into nanostructured systems, thereby strengthening national research in structural biology and biophysics. The consolidation of this expertise fostered new collaborations and helped establish a national community focused on advanced synchrotron-based spectroscopic methods. These efforts culminated in the proposal and development of a SRCD beamline at the Sirius synchrotron in Brazil. Designed to deliver high-brilliance measurements in the ultraviolet and vacuum ultraviolet regions, CEDRO enables experiments with improved spectral quality and expanded experimental capabilities. Its implementation represents a strategic milestone for structural biology in Brazil and Latin America, integrating international expertise, national scientific demand, and state-of-the-art synchrotron technology to expand research capacity and drive innovation in biomolecular science.

## REFERENCES

1. J.L.S. Lopes, D. Orcia, A.P.U. Araujo, R. DeMarco, and B.A. Wallace, *Folding factors and Partners for the intrinsically disordered proteins micro-exon gene 14 (MEG-14)*, Biophysical Journal, 2013, v. 104, pp. 2512-2520.