

STRUCTURAL ANALYSES OF *BLASTOCLADIELLA EMERSONII* CENTRIN
(BeCen1)

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Centrin is an EF-Hand calcium binding protein, usually located at microtubule-organizing centers (MTOCs), such as basal bodies, spindle pole bodies (SBPs), or centrosomes. Two divergent subfamilies were found in the aquatic fungi *Blastocladiella emersonii*, one related to *Chlamydomonas reinhardtii* centrin, CrCenp, and other represented by *Saccharomyces cerevisiae*, ScCdc31p. In fungi, only genes encoding proteins similar to ScCdc31p were described until now. BeCen1, a centrin similar to CrCenp, was previously cloned and expressed as a fusion with maltose binding protein. To explore the structure and function of this centrin it was overexpressed in pET28a vector. After purification on nickel-affinity chromatography, BeCen1 was characterized by spectroscopies methods. Analyses of the Circular Dichroism spectrum showed minima at 207 and 222 nm, which is typical of alpha helix predominant structures. When an external fluorescence probe (ANS) was used, in Ca²⁺ presence, increase of BeCen1 fluorescence emission and a blue shift from 508 nm to 472 nm was observed. This result reflects the exposition of a hydrophobic region probably leading to conformational changes in BeCen1 due to Ca²⁺ binding activity, as found in calcium sensor proteins.

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