

EPN BAG report
RSC complex
30 Sept - 2 Oct 2022
14-16 June 2023

RSC complex (30 Sept - 2 Oct 2022; 14-16 June 2023)

The RSC complex is a chromatin remodeling complex conserved across fungi that mediates transcriptional regulation, DNA repair, and chromosome cohesion/segregation by sliding nucleosomes or ejecting them from chromatin. The cryo-EM structure of the RSC complex from *S. cerevisiae* is known and reveals 16 subunits that define a four-lobed assembly of mass >1 MDa. This project aims to structurally characterize the RSC complex from the fungal pathogen *Candida albicans* and identify molecular approaches to interfere with its function for possible translational development. The RSC complex from *C. albicans* lacks four of the *S. cerevisiae* subunits and contains two unique subunits that *S. cerevisiae* lacks. Data collected at CM01 in the fall of 2022 yielded 28,000 micrographs from 2 sample grids of the cross-linked RSC complex, leading to a 3D reconstruction of resolution between 3.15 and 3.6 Å based on 230,000 particles. This map allowed us to build a 2490-residue model comprising the majority of residues within the three most ordered lobes and revealing the position and structural role of one of the unique subunits. Several regions of the map are still too poor to model reliably. Data collected on the cross-linked RSC complex bound to a nucleosome at CM01 in June of this year yielded 25,000 micrographs from 2 grids. We hope that these data, which are currently undergoing processing, will clarify the ambiguous regions of our previous map and reveal the structural basis for nucleosome recognition by the *C. albicans* RSC complex.