P043 Division plane definition in fission yeast: identification of novel medial cortex targeting sites in Mid1p

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Proper positioning of the division plane perpendicular to the mitotic spindle axis is a critical step during cell division as an abnormal orientation of the division plane can lead to chromosome segregation defects and induce abnormal cell morphology. In *S. pombe* the position of the division plane is defined by the anillin-like protein mid1p. Mid1p associates with the medial cortex, where it recruits contractile ring components at the onset of mitosis, thereby initiating contractile ring assembly in the cell middle. Strickingly, isolated N- and C-terminal fragments of mid1p anchor to the medial cortex independently of each other. C-terminus anchoring depends on an amphipathic helix which directly interacts with the plasma membrane. How the N-terminal domain binds to the medial cortex remains completely unknown. Using successive deletions along mid1p N-terminus, we have identified 2 sites required for cortical anchoring. One also functions as a contractile ring targeting sequence. These sites are essential for the function of mid1p N-terminus but not of full length mid1p that contains an independent cortex anchoring site in C-terminus. We also delineate a region required for nuclear targeting of mid1p N-terminus. Finally, the region containing the nuclear export sequence is the only N-terminal site necessary for mid1p function.