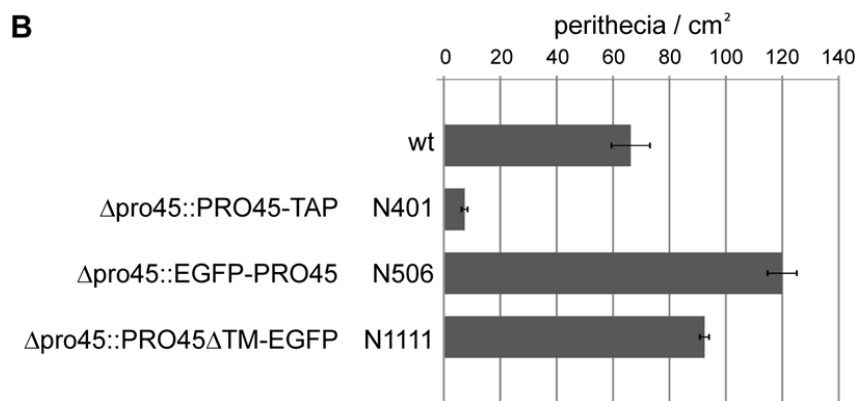
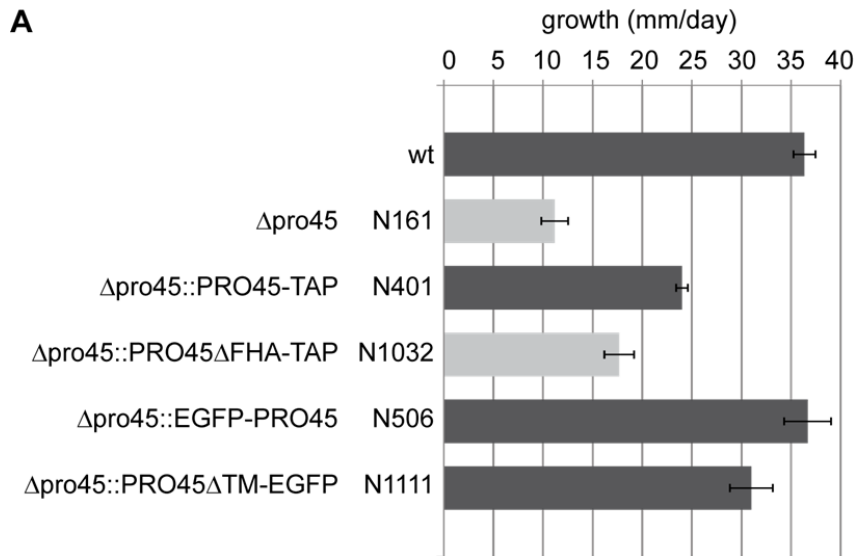
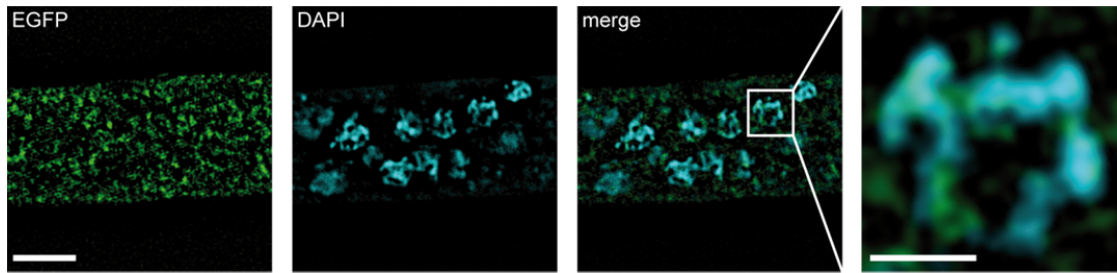


**Fig. S1:** Southern hybridization of *pro45* deletion strains. (A) Physical map of the *pro45* locus in wild type and *pro45* deletion strains. (B) and (C) Genomic DNA was isolated from five candidate strains and the recipient strain  $\Delta ku70$  and hydrolyzed with *EcoRI*. Hybridizations were performed either with a probe for *pro45* (B) or *hph* (C). Expected fragment sizes for the  $\Delta ku70$  strain and  $\Delta pro45$  are illustrated in (A).



**Fig. S2:** Quantification of vegetative growth and perithecia formation in  $\Delta$ pro45 strains carrying tagged versions of PRO45. (A) Vegetative growth was measured on plates with synthetic SWG medium. Fertile and sterile strains are indicated by dark and light gray bars, respectively. (B) Quantification of perithecia formation. Perithecia were counted after seven days of growth on BMM fructification medium.



**Fig. S3: Appearance of cytoplasmic GFP in SIM.** Hyphae of S106172, carrying an ectopically integrated pDS23 (EGFP), were stained with DAPI to determine the appearance of cytosolic fluorescence of free EGFP by SIM. Scale bar is 5  $\mu\text{m}$ ; scale bar for the inset is 1  $\mu\text{m}$ .