

P020 Regulation of *MOT1* by SUMO modification and *SLX5/SLX8* in *Saccharomyces cerevisiae*.

Zheng Wang and Greg Prelich

Department of Molecular Genetics, Albert Einstein College of Medicine, Bronx, NY 10461

MOT1 encodes for a conserved and essential ATPase that functions as a general transcription regulator by modulating TATA-Binding Protein (TBP) DNA-binding activity. Although *MOT1* was originally identified both biochemically and in several genetic screens as a transcriptional repressor, subsequent work suggested that *MOT1* might have an additional role as a transcriptional activator. To better understand the role(s) of *MOT1* *in vivo*, we selected for genomic suppressors of a *mot1* temperature-sensitive mutation. This selection identified mutations in *SPT15* (TBP) and *BUR6*, both of which are clearly linked with *MOT1* at the functional level. The vast majority of the suppressor mutations, however, unexpectedly occurred in six genes that encode known components of the SUMO pathway and in two other genes with unknown function, *SLX5* and *SLX8*. Our previous results, including extensive synthetic lethality observed between *slx5Δ* and *slx8Δ* and SUMO pathway mutations, suggest that *SLX5* and *SLX8* are new components of the pathway. We now report that Mot1 is the relevant substrate of SUMO modification for the suppression phenotype *in vivo*. Our recent results and a model for the role of *SLX5* and *SLX8* in the SUMO pathway will be presented.