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Yeast 2-Hybrid Screen for T. Brucei TIN2- and RAP1- Intracting Proteins

Miao Wang
Cleveland State University, M.WANG3@csuohio.edu

Fan Wu
Cleveland State University, F.WU101@csuohio.edu

YEAST 2-HYBRID SCREEN FOR *T. BRUCEI* TIN2- AND RAP1-INTRACTING PROTEINS

College of Sciences and Health Professions

Department of Biological, Geological, and Environmental Sciences

Student Researcher: Miao Wang; Fan Wu

Faculty Advisor: Bibo Li, Ph.D.

Abstract

Telomeres are DNA-protein complexes located at the ends of linear chromosomes. Acting like a cap, they protect chromosome ends from degradation and rearrangement, maintaining genomic stability. *Trypanosoma brucei* is a protozoan parasite, causing sleeping sickness in humans and nagana in cattle. To evade host's immune response, *T. brucei* cells switch their major surface antigen, Variant Surface Glycoprotein (VSG) regularly. *VSG*s are expressed exclusively from *VSG* expression sites, which are found at sub-telomeric regions. Hence, understanding the *VSG* regulation by the telomere complex would help in developing means to eliminate this parasite.

Our lab has identified several *T. brucei* telomere proteins, including TRF (TTAGGG Repeat-binding Factor), TIN2 (TRF1-interacting Nulcear Protein 2) and RAP1 (Repressor Activator Protein 1) homologs. We have previously shown that TbRAP1 is required for subtelomeric VSG expression regulation, and our preliminary data also indicate that both TbTRF and TbTIN2 play important role in regulation of VSG switching frequency. To better understand the functions of telomeres in antigenic variation, we intend to identify factors that interact with TbTIN2 or TbRAP1 through yeast 2-hybrid screens. In this study, using TbTIN2 or TbRAP1 as bait, we screened a normalized *T. brucei* cDNA library. In both screens, several promising candidates have been identified. We are currently verifying the interactions between the new candidates and TbTIN2 or TbRAP1.