P011 Interaction between the *Tomato Golden Mosaic Virus* replicase and the plant sumoylation pathway.

Rosa Lozano-Durán, M.A. Sanchez-Duran, M.B. Dallas[(2)], L. Hanley-Bowdoin[(2)], E.R. Bejarano

Departamento de Genética, Facultad de Ciencias, Campus Teatinos s/n, 29071, Malaga, Spain. [(2)] Department of Molecular and Structural Biochemistry, North Carolina State University, Raleigh, NC 27695-7622, USA.

It has been described that the protein Rep of *Tomato Yellow Leaf Curl Sardinia Virus* (TYLCSV) and the functional AL1 homologue of *Tomato Golden Mosaic Virus* (TGMV) interact with the *SUMO conjugating enzyme* from *Nicotiana benthamiana* (SCE1).
By deletion analysis, we have determined that a fragment of TGMV AL1 encompassing residues 56 to 114 and containing three lysines (K96, K102 and K107) is able to interact with SCE1.
The lysines residues K68, K96 and K102 were replaced by alanine to generate single and double point mutants. All of the single AL1 mutants showed a weaker interaction with SCE1, which was even weaker for the double mutants.
AL1 mutants were used to produce TGMV replicons and infect *N. benthamiana* plants. In most cases, the infection was impaired or hindered.
In order to determine if the interaction between AL1 and SCE1 is important for viral replication or for viral movement, *N. benthamiana* protoplasts were transformed with TGMV (mutants and controls).
The results obtained from the plant infections and the protoplasts transformations showed that the AL1 lysine 68 residue is necessary for its interaction with SCE1 during the TGMV infection, and that this interaction is important for viral replication.