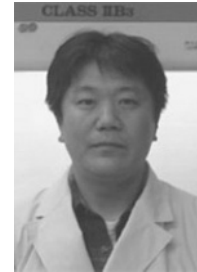


Human polyomavirus agnoprotein disrupts the interaction between HP1 α and LBR



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The nuclear envelope is a major obstacle to the translocation of macromolecules larger than the diameter of nuclear pores. Human polyomavirus late auxiliary protein, named agnoprotein, was found to bind to heterochromatin protein 1 α (HP1 α) and to induce dissociation of HP1 α from the lamin B receptor (LBR), resulting in destabilization of the nuclear envelope. Fluorescence recovery after photobleaching revealed that the protein increased the lateral mobility of LBR in the inner nuclear membrane. Biochemical and immunocytofluorescence analyses demonstrated that the protein is targeted to the endoplasmic reticulum and inner nuclear membrane, and facilitated the nuclear egress of the virions by iodexanol density gradient experiments and micro injection of virions into the agnoprotein inducible cell lines. These results demonstrate the mechanism of the nuclear egress of polyomavirus virions by inducing structural and functional perturbations of the nuclear envelope.