Abstract

PML nuclear bodies are protein structures in the cell nucleus that regulate many important cellular processes and are also implicated in antiviral defense. The permanent components of these nuclear bodies include PML, Sp100 and Daxx proteins, many other proteins are transiently associated with PML bodies. PML body components can be SUMOylated, this posttranslational modification is important for the formation of PML bodies and regulation of their function. Components of PML bodies such as PML, Sp100 and Daxx can act as restriction factors limiting the replication of many DNA and RNA viruses. Defense mechanisms mediated by PML bodies are suppressed by viral proteins that inactivate individual components or disrupt the structure of PML bodies. This thesis focuses on the role of PML bodies as restriction factors during infection by DNA viruses of the *Herpesviridae* family and describes the interactions of PML bodies and viral proteins, using herpes simplex virus 1, human cytomegalovirus and Epstein-Barr virus as examples.

Keywords: PML nuclear bodies, restriction factor, antiviral defense, innate immunity, herpesviruses