

Abstract

Mason-Pfizer monkey virus (M-PMV) belongs to the morphogenetic type D retroviruses which produce viral particles in the cytoplasm. This process is temporally and spatially separated from the cytoplasmic membrane budding and therefore M-PMV is a suitable model organism for studying the life cycle of retroviruses. Matrix protein, which is N-terminal portion of Gag polyprotein precursor, plays a central role in this life cycle. One of the key areas of the protein is its myristoylated N-terminus which is particularly important for binding to the cytoplasmic membrane during budding from host cells. A hydrogen bond exists between serine 6 and glutamate 9 of the wild-type protein. We have studied its influence on the structure and molecular mechanics of the corresponding area of the protein by means of disruption of this interaction by replacing serine 6 with alanine. This thesis describes the preparation of recombinant mutant of the M-PMV matrix protein, resonance assignment of its backbone atoms with nuclear magnetic resonance spectroscopy and compares observed secondary structure with that of other mutants and the wild type.