



## Sequence analysis of the gliding protein Gli349 in Mycoplasma mobile

<http://www.firstlight.cn> 2005-05-25

The motile mechanism of Mycoplasma mobile remains unknown but is believed to differ from any previously identified mechanism in bacteria. Gli349 of M. mobile is known to be responsible for both adhesion to glass surfaces and mobility. We therefore carried out sequence analyses of Gli349 and its homolog MYP2110 from M. pulmonis to decipher their structures. We found that the motif "YxxxxxGF" appears 11 times in Gli349 and 16 times in MYP2110. Further analysis of the sequences revealed that Gli349 contains 18 repeats of about 100 amino acid residues each, and MYP2110 contains 22. No sequence homologous to any of the repeats was found in the NCBI RefSeq non-redundant sequence database, and no compatible fold structure was found among known protein structures, suggesting that the repeat found in Gli349 and MYP2110 is novel and takes a new fold structure. Proteolysis of Gli349 using chymotrypsin revealed that cleavage positions were often located between the repeats, implying that regions connecting repeats are unstructured, flexible and exposed to the solvent. Assuming that each repeat folds into a structural domain, we constructed a model of Gli349 that fits well the shape and size of images obtained with electron microscopy.

[存档文本](#)