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Mapping of the surface of papaya mosaic virus

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Virus like particles (VLPs) made of the coat protein (CP) of papaya mosaic virus (PapMV) has been showed to be a powerful adjuvant that can be used for the development of innovative vaccines. It was suggested that the VLPS are recognized as a Pathogen-Associated Molecular Pattern (PAMP). Therefore, the surface regions of PapMV VLPs are relevant to understand the contact between the VLPs and the immune cells. By using several chemical and immunologic techniques, we succeeded to map the surface regions of the VLPs. In brief, protein microarray chips labelled with peptides from PapMV and incubate with mice sera combine with mass spectrometry with chemically modified PapMV confirmed surface exposed regions of the molecule. The regions found to be at the surface were confirmed by immunoprecipitation and ELISA with antibodies targeting those regions. One major region is thought to be relevant and could be considered as a good candidate for the interaction between the virus and the immune system. Target mutations in that region have been done to evaluate the effects on the adjuvant properties of the protein.

Biography

M. Rioux holds a Bacc degree in microbiology and he is currently making a master degree in microbiology-immunology in Dr Leclerc's laboratory located in Quebec City.