

Our laboratory is interested in various viral and cellular proteins involved in the synthesis and maturation of RNA. The proposed summer research project will aim at better understanding an intriguing viral protein that we recently started characterizing. This protein, from vaccinia virus, is responsible for the degradation of specific viral and cellular mRNAs. This is the first viral protein ever identified that harbors this type of enzymatic activity (RNA decapping). It should be noted that vaccinia virus is a powerful model to analyze the role of various proteins involved in viral replication cycle. In addition, this virus, related to smallpox virus is the subject of numerous studies because of the risks of bioterrorism associated with the use of smallpox as a weapon of destruction.

We are looking for a motivated summer student to continue the characterization of this important protein in order to learn more about its exact role. Using conventional biochemical techniques (expression/purification of proteins, enzymatic assays, RNA synthesis, cell culture, etc.) and innovative (fluorescence spectroscopy, fluorescence microscopy, molecular modeling, etc.), the project will allow the student to participate directly in this research project in order to discover the exact role of this protein.

The summer student will therefore have its own research project and will be guided by graduate students, research assistants, as well as the principal investigator (the Head of the Biochemistry Department) who will provide all the technical and conceptual help which he (she) will need. Our laboratory uses a multidisciplinary approach to better understand the enzymatic reactions, structural modifications, and the thermodynamics of different processes leading to the synthesis / maturation of viral and cellular RNA. Improved knowledge of the biochemical properties of these proteins should eventually lead to the development of effective antiviral strategies.

We are therefore looking for a curious, dynamic and highly motivated student that is potentially interested in pursuing higher education. You can contact me directly via email to postulate for this position ([Martin.Bisailon@USherbrooke.ca](mailto:Martin.Bisailon@USherbrooke.ca)). Any undergraduate student interested in science is encouraged to postulate. This is a great opportunity to work in a lab for the summer.