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I am a research biologist specializing in the study of hepatitis E virus. I have dedicated my career to understanding the complexities of this viral infection and developing the cost effective laboratory methods to utilize in the less developed nations.

My interest in biology began at a young age, as I was fascinated by the way living organisms functioned and interacted with their environment. During my master's degree in biology of Infectious Diseases at University Paris Saclay, I was working on my thesis that involved the new rat hepatitis virus which has zoonotic potential. Then I became particularly interested in hepatitis E and the impact it had on individuals and communities as this infection is overlooked by the physicians.

After completing my medical and master's degree, I joined a leading research institute dedicated to the study the infectious diseases called Institut Pasteur du Cambodge, where I have been able to pursue my passion for hepatitis research. Over the years, I have conducted extensive research on the molecular diagnosis and genomic characterization of hepatitis E virus. One of my most notable achievements has been the development of a new duplex real-time RT-PCR assay protocol that can detect both hepatitis E virus species A (HEV-A) and species C (HEV-C) simultaneously. In addition to my research work, I am also keen on genomic, bioinformatic, and epidemiology studies as well. Overall, my career as a research biologist has been both challenging and rewarding, and I am proud to have contributed to the fight against hepatitis E virus. I look forward to continuing to make a difference in the lives of patients and their families.

Project

Developing of high throughput serological assay to improve detection of human Hepatitis E virus (HEV species A) and rodent Hepatitis E virus (HEV species C) in Cambodia

Hepatitis E virus (HEV) is a small, single-stranded RNA virus that causes acute hepatitis in humans. HEV species A is the most common cause of acute hepatitis E infections in humans globally, and it is transmitted primarily through contaminated water and food. It is a serious threat to public health in developing nations, where sanitation and hygiene standards are often inadequate. HEV species C, on the other hand, is primarily found in animals, especially rodents, and it is considered to be a zoonotic virus that can infect humans through consumption of contaminated rodent products or contact with infected animals. It is less common than HEV species A in humans, but it has been identified as a cause of sporadic cases of hepatitis E infection in China. As of 2023, there is not an available data on the circulation of HEV-C, and an out-of-date HEV-A seroprevalence in the Cambodian general population. In addition, the cross-reaction of species A and C was documented in previous serological study. Thus, there is a need to assess the true exposure of these two viruses. The purpose of my proposed project is to develop the high throughput microsphere immunoassay that allows us to detect and to distinguish the antibody against both HEV-A and HEV-C simultaneously using retrospective human samples provided by the Institut Pasteur du Cambodge (IPC). This promising method is

essential in Low Middle Income Countries (LMICs) such as Cambodia, where the burden of infectious diseases is high and timely diagnosis as well as treatment can be critical for preventing disease transmission and improving patient outcomes.