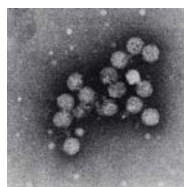


## New Epitopes for an Universal Hepatitis C Vaccine

Reference: VAL-407-HSJ

**Keywords:** Hepatitis C Vaccine, Epitopes, F Protein

### Background



It is estimated that more than 180 million people worldwide are infected by the hepatitis C virus (HCV), including 4 million Americans of whom nearly 30% are also co-infected with HIV.

There is currently no effective vaccine against HCV and standard treatment is only effective in about 50% of the cases. The infection is also the principal cause of liver transplants and a host of liver complications like fibrosis, cirrhosis, and HCC.

### Technology

This technology, discovered by Dr. Hugo Soudeyns from the Hospital Ste-Justine, is based on the HCV viral F protein, a highly conserved protein between all HCV subtypes.

From the F protein sequence, a series of synthetic peptides (15-mer) were elaborated and tested. Three particularly immunogenic peptides have been identified and are excellent candidates for vaccine design.

### Results

Briefly, results demonstrated that

- Immunisation of mice with the peptides reduced the viral load of mice infected with the HCV virus
- Both humoral & cell mediated responses are involved in this immune response.
- No toxicity was observed in murine models.

The next step is to optimize the immunogenic response through an alliance with an industrial partner with a proprietary vaccine platform.

### Competitive Advantages

1. **F protein is non-toxic.** As a safe protein, it provides an appealing alternative to other HCV viral proteins, whose levels of toxicity induce high rates of liver cancer.

2. **Novel patentable epitopes:** The structure of the F Protein expressed by the cassette is complete, containing at least three immunogenic peptides. These main active immunogenic peptides are absent from competitive structures.
3. **All HCV subtypes covered:** The F protein structure is conserved among the different HCV subtypes. This addresses the mutability of the virus and supports the potential to develop an efficient vaccine against HCV infection.
4. **Humoral crossreactive response:** The F protein is the target of humoral response in chronic HCV-infected patients. This response is crossreactive for the different subtypes.
5. **Cytotoxic response:** The F protein is the target of direct cytotoxic response in HCV-infected patients.
6. **HCV/HIV Co-infected patients:** The F protein is the target of both humoral and cellular responses in HCV/HIV co-infected patients.

### Applications

Therapeutic and prophylactic vaccines against HCV.

### Patent Status

Patent pending in Canada, US and Europe (Q4/2005).

### Business Opportunity

**For you:** Access to an antigenic protein and derived epitopes for formulation and development of a universal HCV vaccine covering all genotypes.

**For us:** Gaining access to a vaccine platform for testing Dr Soudeyns' antigens.

### Contact

**Louis Provencher, Ph.D, DESS. Adm**  
*Manager, Business Development, Life Sciences*  
**Gestion Univalor, Limited Partnership**  
Phone: +1 514-340-3243, ext. 4498  
Fax: +1 514-340-3204  
[louis.provencher@univalor.ca](mailto:louis.provencher@univalor.ca)