

**Licensing opportunity - Pasteur DI number: 2004-102**  
**Vaccine use of histone H2B against Leishmaniasis.**

### DESCRIPTION of INVENTION

Leishmaniasis proteins were able to induce a Th1 cellular immune response and we have identified one of those proteins, the histone protein H2B. The histone protein is conserved in various *Leishmania* parasites and has a role in the structural formation of the nucleosome. The invention concerns an immunogenic composition comprising: an antigenic polypeptide consisting in a fragment of the H2B histone protein of *Leishmania* and an adjuvant stimulating the immune response

### POTENTIAL APPLICATION

- Vaccine candidate (with the Nt-H2B part).
- Human and veterinary applications.

### SPECIFIC ADVANTAGE & DEVELOPMENT STAGE

- Specific Th1 (helper cells) immune response.
- High reduction of parasitic concentration in infected mice having injection of Nt-H2B with adjuvant (100 to 1000 times lower than the control mice which received only buffer (PBS) or adjuvant (CpG)).
- H2B protein was studied on mice, dogs and humans.
- Evaluation of the humoral responses induced by these proteins in patients with Mediterranean Visceral Leishmaniasis (MVL) due to *L. infantum*
- H2B and H2B-N are interesting antigens for serodiagnosis of MVL.

### PATENT STATUS

Published - [WO2006097642](#) (Composition comprising the N-terminal region of *Leishmania histone H2B*, use thereof for inducing an immune response).  
[BR PI 0609847](#) published on 4-05-2010; [MX 298180](#) delivered on 13-04-2012; [US2010119532 \(A1\)](#) [FR2883185 \(A1\)](#)

### RELATED PUBLICATION

[Vaccination with the divergent portion of the protein histone H2B of \*Leishmania\* protects susceptible BALB/c mice against a virulent challenge with \*Leishmania major\*.](#)

Chenik M, Louzir H, Ksontini H, Dilou A, Abdmouleh I, Dellagi K.  
Vaccine. 2006 Mar 24;24(14):2521-9. Epub 2005 Dec 28.

[Cellular and humoral responses induced by \*Leishmania histone H2B\* and its divergent and conserved parts in cutaneous and visceral leishmaniasis patients, respectively.](#)

Meddeb-Garnaoui A, Toumi A, Ghelis H, Mahjoub M, Louzir H, Chenik M.  
Vaccine. 2010 Feb 17;28(7):1881-6. Epub 2009 Dec 14.

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"We are working around a main topic that is based on the host-pathogenic interaction. We are doing epidemiological studies in order to better understand the disease history, characterizing parasite virulence factors, doing vaccinology's studies on *Leishmaniasis* and developing diagnostic tools".

### Commercial Status

Exclusive or non exclusive  
licenses  
and collaborative research

### Keywords

*Leishmaniasis*, protein histone  
H2B, *L. infantum*, adjuvant

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