



context

Chagas disease is an important health problem in Latin America and a challenge in non endemic countries.

Its prevalence is estimated between 8 and 10,000,000 people infected and approximately 14,000 deaths/year, representing the second highest burden of disease among Tropical Diseases in the Americas.



treatment options

Although Chagas disease has been identified and described for more than 100 years, the therapeutic alternatives are limited: benznidazole and nifurtimox are the only 2 drugs available for treatment.

Both benznidazole and nifurtimox have frequent side effects, specially in adults, requiring discontinuation in up to 10% of patients.

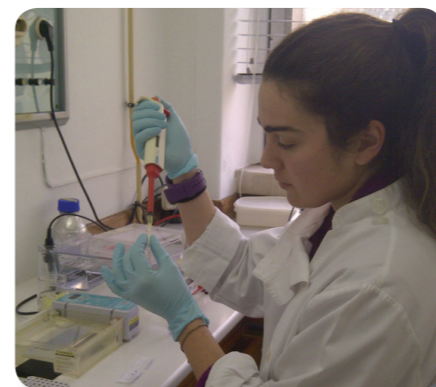
innovation on nanotechnology

The encapsulation of benznidazole using nanotechnology will generate a new drug delivery system. This new approach will allow a release of medication directly into the intracellular space, therefore increasing tissue drug concentration and avoiding side effects. A better toxic profile will be obtained because of the reduced amount of benznidazole used.



objectives

- ▶ To collect the fragmented and dispersed knowledge to serve as a basis for new developments.
- ▶ To obtain the first results of pharmacokinetics of benznidazol.
- ▶ To achieve a safer and optimized drug delivery through nanotechnologies.
- ▶ To improve the toxic profile of the main current treatment, benznidazole.
- ▶ To assess trypanocidal activity of new formulations in vitro and in vivo.
- ▶ To assess trypanocidal activity of new triazoles in humans.
- ▶ To assess trypanocidal activity of combined therapy against Chagas disease.
- ▶ To involve partners, research and industry in EU and in endemic countries.

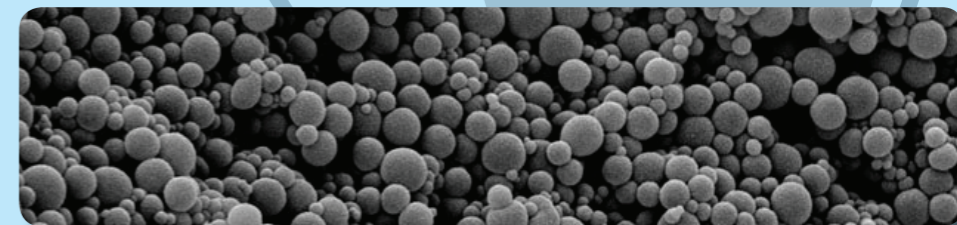


expected outcomes

BERENICE project will develop a low-cost intervention with an important cost effective impact that can be implemented during the project period and thereby have an immediate effect on the control of Chagas diseases in endemic and non endemic countries.

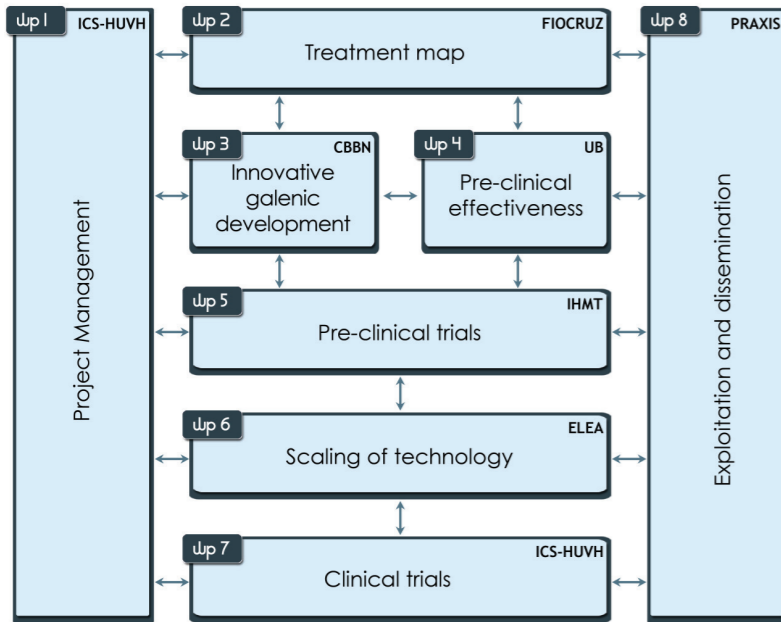
- ▶ **Scientific advancements:** better comprehension and control of the Small Unilamellar Vesicles (SUVs) and Solid Lipid Nanoparticles (SLNs) behavior as drug delivery nanodevices for specific APIs (Active Pharmaceutical Ingredient) to be conjugated.

- ▶ **Nanomedicine development:** knowledge and products developed under the scope of BERENICE will yield new and cost effective therapies for the treatment of Chagas disease.
- ▶ **Impact on Public Health:** a more effective, cheaper and safer treatment would increase the number of patients treated.
- ▶ **Impact on the SME (Small Medium Enterprises):** increased european competitiveness of the health industry.



work plan

To ensure its successful completion, **BERENICE** has been divided into 8 work packages, each dealing with specific tasks.



partners

BERENICE is a European research network (Collaborative Project) coordinated by Vall d' Hebron University Hospital and its Research Institute (ICS-HUVH, Barcelona, Spain). Our consortium brings together 8 European and Latin American partners. Starting in September 2012, this 5-year project is supported by the European Commission under the Health Innovation Work Programme of the 7th Framework Programme.



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www.berenice-project.eu



BERENICE (Benznidazol and Triazol REsearch group for Nanomedicine and Innovation on Chagas diseaseE)

Making possible
 the treatment of
 Chagas disease

A new hope for Chagas disease

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Acercando la innovación a la enfermedad de Chagas