

What Motivated Us

Part of the high biodiversity of Latin American fauna consists of the sparsely studied poisonous species that in some cases may represent a health problem. This biodiversity is an important reservoir of bioactive molecules, in particular toxins. Such biomolecules may serve as tools for pharmacological studies and for the development of novel therapeutics; however, a few research results have led to products to achieve significant social impact on human health.

The Ibero-american Network CYTED BIOTOX (Red Biotox 212RT0467) includes eight different countries in Latin American region with experience in research areas related to:

1. Production and characterization of venoms and antivenoms of terrestrial species important for health (Brazil, Costa Rica, Venezuela).
2. Proteomic analysis of different terrestrial poisonous animals and their implications for the effective use of antivenoms (Brazil, Costa Rica, Spain, Venezuela) or evolutionary level (Spain).
3. Characterization of venoms of marine species of interest for health and biomedicine (Brazil, Cuba, Spain, Venezuela,).
4. Study of structure-function relationship of toxins (Argentina, Brazil, Chile, Cuba, Venezuela)
5. Development of toxin-based products with high added value for human health impact (Cuba)

Promoting the exchange of experiences and technologies, the dissemination of information as well as high-standard training of human resources would contribute to the development of common strategies at a regional level on the most pressing issues of relevance for the treatment of various diseases and for the economy of the countries involved.

Our purposes

The overall goal of the Network Biotox is to exchange experiences and technologies for the molecular and functional study of toxins of biomedical interest in order to develop common strategies, and enhance regional capacity associated with its application in the treatment of various diseases.

Therefore, integration around BIOTOX on collaborative and integrationist basis gathering countries with different perspectives, problems, developmental level, and complementarity in their tools and approaches, around the topic of interest: Toxins of interest for Biomedicine, will result in work strengthening which in turn will contribute favourably to:

1. Training of specialists working in the field.
2. The health of population especially those most vulnerable groups to the action of venoms and toxins.
3. Development of novel products with potential partnerships that would benefit the region and eventually the national economies

Snakebites and scorpion envenoming are causing a huge negative socioeconomic impact in Central and South America therefore it becomes indispensable to join forces to revert this situation, especially with the impending impact of events associated with climate change, with unpredictable effects on native or invasive wildlife, which can intensify this situation especially in the most vulnerable groups: agricultural workers and children. The network will enable an exchange and a multidimensional preparation in the approaches and research instruments to increase training of researchers to face their problems.

For four years, eight leading countries in their respective research fields involved in these studies in the Ibero-American region will have financial means and ways to interact, share experiences and incorporate other researchers, teachers and people in general, with its considerations and recommendations contributing to the development of means to open other / new perspectives for solving problems related to animal venoms and toxins of biomedical interest.

At the end of every year, each country member of BIOTOX will have updated information on each of the topics studied and will encourage the participation of other teams in future research projects. The foreseen benefits are not only limited to the highly specialized personnel but include other social actors who want to be more prepared via the online course that will be offered.

BIOTOX will promote a space for discussion and will facilitate decision-making on the priorities that will include research subjects in a joint effort to solve immediate problems in the Ibero-American region in the field of envenomations and toxins of animal origin

