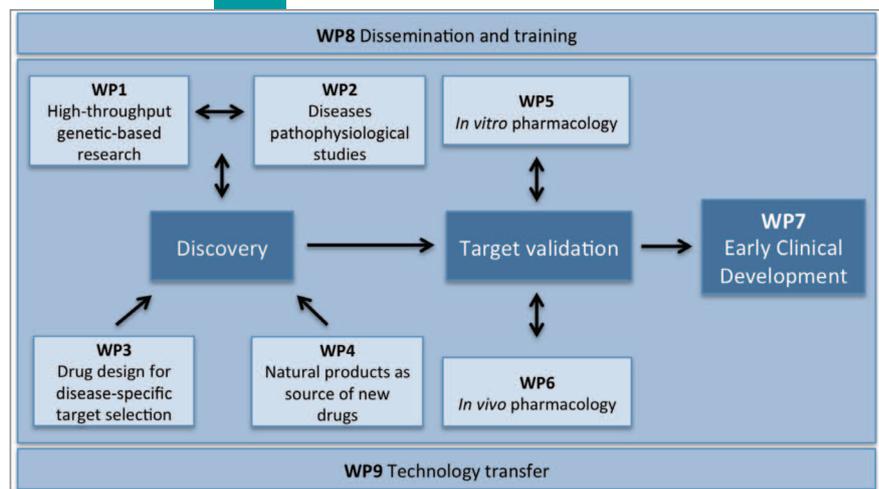


Inflammatory diseases are a complex and heterogeneous group of diseases that affect more than 10% of the world population. The current options for the treatment of inflammatory diseases are still limited and in some cases, ineffective due to limited understanding of the mechanisms underlying these diseases. The development of translational research by a center that can generate scientific knowledge and identify new therapeutic targets for inflammatory diseases is imperative. The Center for Research on Inflammatory Diseases (CPDI) will be created to fulfill this goal. The Center relies on the expertise of researchers from various biomedical fields, integrating basic (geneticists, molecular and cell biologists, immunologists, pharmacologists, pathologists), and clinical (rheumatologists, clinical immunologists, infectologists, dermatologists) researchers, as well as investigators from the fields of computational medicinal chemistry, chemical synthesis and bioinformatics. The general objective of the CPDI will be to perform integrative and translational research to identify, validate and target known and novel biological pathways involved in the induction and resolution of inflammation. As a result, we expect the development of innovative therapeutic strategies and drugs that effectively target inflammatory diseases. The project will involve high-throughput genetic screening, *in vivo* and *in vitro* models of diseases, modeling and chemical synthesis, as well as the discovery of new natural molecules from plants and arthropod saliva. After selecting the potential drugs and bio-drugs, the CPDI will protect its intellectual property and, after partnerships with private companies, coordinate pre-clinical toxicological studies and early clinical trials. The specific goal of the CPDI will be to advance the understanding of the physiopathology of inflammatory diseases (infectious, autoimmune and vascular atherosclerotic) to accomplish the



following: 1) recognize and understand the mechanisms involved, such as molecular (genetic and intracellular signaling), immunological (innate and specific responses), pathological and pharmacological (experimental models) mechanisms; 2) identify new biological targets to develop pharmacological (synthetic and from natural source) and immune (antibody) therapy tools; 3) search for possible diagnostic markers and prognostic clues; and 4) apply this new knowledge to design and synthesize new molecules to treat inflammatory diseases. The new molecules will be tested for their efficacy in experimental models and submitted to conceptual tests in samples from human beings. In the case of potential therapeutic use, we intend to seek patents and perform stability, pharmacokinetic and pre-clinical toxicology trials and coordinate possible early clinical trials. Development of potential drugs will be performed in partnership with public and private companies, which have already expressed interest in partnerships. The Center will also dedicate intense efforts to promotion of knowledge by sharing greater public awareness, transparency and education by letting people know what is being done in the science of inflammatory diseases. Fulfilling these societal objectives of spreading education and generating enthusiasm for science, the plan is to reach the public at large using all available tools. Dissemination actions will be implemented for the scientific community, for the public in general and for patients with inflammatory diseases. The goal of disseminated knowledge will also be met by the coordination of training activities.

## Host Institution

University of São Paulo (USP, campus Ribeirão Preto)

## Principal Investigator

Fernando de Queiroz Cunha, USP

## Education and Knowledge Diffusion Coordinators

Paulo Louzada Junior, USP  
Sérgio Henrique Ferreira, USP

## Technology Transfer Coordinators

Carlos Henrique Tomich de Paula da Silva, USP

## Co-Principal Investigators

Carlos Henrique Tomich de Paula da Silva, USP  
João Santana da Silva, USP  
Paulo Louzada Junior, USP  
Rita de Cassia Aleixo Tostes Passaglia, USP  
Sérgio Henrique Ferreira, USP

## Associated Researchers

Ana Maria Ferreira Roselino, USP  
Ana Paula de Carvalho Panzeri Carlotti, USP  
Anibal Basile Filho  
Antonio Pazin Filho, USP  
Cacilda da Silva Souza, USP  
Dario Simões Zamboni, USP  
Eduardo Antonio Donadi, USP  
Flavio da Silva Emery, USP  
Geraldo Aleixo da Silva Passos Júnior, USP  
José Carlos Farias Alves Filho, USP  
Marcos Antonio Rossi, USP  
Renê Donizeti Ribeiro de Oliveira, USP  
Sandra Yasuyo Fukada Alves, USP  
Thiago Mattar Cunha, USP  
Vânia Luiza Deperon Bonato, USP  
Virginia Paes Leme Ferriani, USP