



HBIGS Lecture

by

Prof. Fernando B. Da Costa
(University of São Paulo, Brazil)

„Chemical and Biological Potential of South American Asteraceae“

Date: Monday, 18 Feb 2013

Start of Lecture: 13:00 s.t.

Venue: INF 306, Lecture Hall 2

Abstract:

Plant species of the family Asteraceae (daisy or sunflower family) are widespread worldwide and have taxonomic, ecological, economic as well as medicinal interest. The most investigated classes of secondary metabolites from this family are the phenolics and terpenoids, e.g. flavonoids, caffeoylquinic acid derivatives, sesqui- and diterpenoids. The *AsterBioChem* research group has been studying South American Asteraceae for 15 years, especially those from the Brazilian *cerrado* (bush savannah) biome. Many species have been chemically investigated and almost two hundred substances from different chemical classes have been isolated, including those from medicinal plants. Further derivatives were obtained by semi-synthesis as well as biotransformation of natural compounds. Several pure compounds have been tested using different models, e.g. animals, tissue or organ preparations, insects, parasites, cells and enzymes, and showed interesting biological activities. A pure compound library and an *in-house* database comprising their chemical structures have been built to help extract dereplication. More recently, our chemical and biological studies of Asteraceae were combined with other methodologies, such as LC-DADMS and NMR-based metabolome analysis, chemoinformatics tools and enzymatic assays with the aim to carry out targeted isolation of bioactive constituents. Advances and future perspectives in the study of South American Asteraceae are expected in different fields of research and therefore we wish to better exploit its huge chemical and biological potential.