**TITLE:** **ACTIVITY STUDIES OF CHARACTERIZED, STANDARDIZED AND HIGHLY PURIFIED PROPOLIS EXTRACT**

Propolis is a resinous substance collected and transformed by honeybees from various plant sources. It is rich in polyphenols compounds that vary depending on geographical and botanical origin. The new patented productive process, called M.E.D.® (Dynamic Multi Extraction), is able to extract the completeness of polyphenolic fractions present that are: phenolic acids, bioflavonoids (aglycons and glycosylated forms) in a specific blend of brown propolis, coming from selected areas. Thanks to M.E.D. ® process it is possible to obtain the first standardized and highly purified polyphenols extract from propolis. The standardization is based on the content of the functional compounds such as total polyphenols in which six of them (Apigenin, Pinocembrine, Pinobanskine, Chrysin, Galangine, Qquercetine) represent more than 25%, signifying a quality indicator of extraction method.

The characterization is performed with HPLC-UV-ESI-MS and tandem mass to give us a qualitative and quantitative profile of purified polyphenols extract and its derivatives.

Based on this standardized and purified polyphenols complex, we have been performed *in vitro* studies to test its antimicrobial activity against a large panel of microorganisms, in particular against *Staphylococcus aureus spp.*  and *Staphylococcus aureus Methicillin- Resistant spp; Streptococci spp.*

Authors:

Crimaldi Laura, Zaccaria Vincenzo, Falco Mattia, Galeotti Fabio, Fachini Alfredo, Volpi Nicola