

Mistletoe - From mythology to evidence-based medicine

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This is the time of the *precision medicine*, as President Barak Obama addressed the Nation on January 20, 2015 in a State of the Union Address: *Tonight, I'm launching a new Precision Medicine Initiative to bring us closer to curing diseases like cancer and diabetes — and to give all of us access to the personalized information we need to keep ourselves and our families healthier* (Francis S. Collins and Harold Varmus, A New Initiative on Precision Medicine; N Engl J Med 2015;372:793-795). This new field already show several actors, not only the NIH but also private company like APPLE, MICROSOFT and others, investing a lot of money: all together already several billions, dollars or euro doesn't matter, a fact that testify how hot is becoming this new biomedical perspective.

A perspective which constitutes an emerging approach for disease treatment and pre-

vention since it takes into account the individual lifestyle thus including for each person genomic and epigenomic data. Till today, significant advances in precision medicine have been made for select cancers, the new initiative should widen the therapeutic opportunities to a wide variety of diseases since it will untangle the deep biological mechanisms of several diseases. Having said that, the readers will understand how much I was surprised and quite interested in reading, while going through the Karger titles, that actually a very old chinese phyto drug is facing evidence based medicine in cancer therapy! This is the case of the *mistletoe*, the plant (*Viscum album* L.) that since ancient times has been used for healing diseases. Well, reading this fascinating book the reader will discover that today *mistletoe extract therapy is among the most thoroughly studied complementary treatments in Europe. Several studies and meta-analyses have shown it to be beneficial for cancer patients in terms of survival, improved quality of life and minimized side effects of cancer chemotherapy* as the foreword and the preface are stressing. There are eight chapters, all together giving an overview of the research on mistletoe therapy from antiquity to the present, and thus highlighting topics as different as the cultural and medical history of mistletoe from one side to the diversity of the plant's molecular constituents (and their anticancer activities due to cytotoxicity

and immunomodulation) to the other side. The chemical constituents and their activities (related to the major components that are polyphenolic in nature) are well illustrated and the randomized trials presented to overcome skepticism. Particular attention is given to the application of mistletoe extracts as a supportive treatment in glioblastoma.

Generally speaking, the reader will be acquainted with the fact that these phyto molecules drugs have several advantages that are complementary to, and possibly synergistic with, biologic approaches for anticancer therapies. Thus, harnessing the tools that oncologists hold to widen the strategies to increase the anticancer therapies effectiveness. I think that cyto- and histochemists not only pharmacologists interested in phytomedicine and medical historians, will be delighted in reading this book: at the end, they are a special case of scientists, those much more inquiring and with an intrinsic proneness to dissect the molecular bases of any biological phenomenon!

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