

# *Tripterygium wilfordii* promotes selective cell death via a novel Na/K ATP-ase pathway

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**T**here has been an enormous interest in the literature that phyto-compounds have therapeutic and beneficial effects in various diseases including inflammatory associated arthritis, diabetes, hypertension, parasitic infections, and cancer. A natural extract isolated from leaf and root of the Chinese herb called *Tripterygium wilfordii* Hook. f. shown to have anti-cancer effects by promoting cancer cell death. The precise target of action for this plant-base anti-cancer agent has not characterized yet. Importantly, studies performed with *Tripterygium wilfordii* have not indicated whether these anti-cancer plant-base agents have any toxic effects on normal cells. In the present study we show that *Tripterygium* extract exposed to different cancer cell lines including HeLa, pancreatic, prostate, breast and laryngocarcinoma caused cell death in a dose-dependent manner, with 85% death in cancer cells at a dose of 1 mg/ml. Importantly, *Tripterygium* extract did not have cell death effects on normal cells (PBMC's, MCF12F and MCF10A). An *in silico* approach on the most abundant molecules found in *Tripterygium wilfordii* indicated a possible association with the Na<sup>+</sup>/K<sup>+</sup> ATPase and this was confirmed with specific *in vitro* studies. Thus, these results strongly indicated that *Tripterygium wilfordii* has selective death-promoting activity in cancer cells.

## Biography

Patrikios Ioannis received his BSc degree in Pre-Medical studies/Biochemistry from the City College of the City University of NY. He completed his PhD studies in 1994, specialized on Immunology and Lipids/Lipidomics and Post-doctoral studies specialization in Medical Biochemistry at the City College of NY, next to the world-known Professor C S Russell. He went through several different fellowships including research specializations/collaborations with different high reputation institutions including, Mount Sinai NY and was awarded advanced immunology specialization courses at Scuola Superiore d'Immunologia Ruggero Ceppellini, Italy. He served and continues to serve as a Research Scientific Consultant for industry and higher education. His broad research interests include studies of new therapeutic approaches of chronic diseases by the use of systems medicine, through systems biology and nutritional systems biology; lipid hemagglutinins, lectins, immunology and the use of novel interventions against metastatic tumor cells.

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