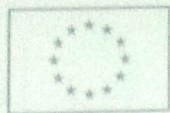
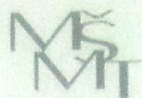




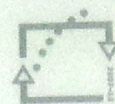
evropský  
sociální  
fond v ČR



EVROPSKÁ UNIE



MINISTERSTVO ŠKOLSTVÍ,  
MLÁDEŽE A TĚLOVÝCHOVY



OP Vzdělávání  
pro konkurenceschopnost



## INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Propojení výzkumu a vzdělávání v oblasti medicínální chemie  
reg. číslo: CZ.1.07/2.3.00/30.0060

### Závěrečná zpráva ze zahraniční stáže/ Report from foreign intership

Účel cesty/Aim of travel: *Research associated to the internship plan*

Účastník/Participant: *Cosimo Walter D'Acunto*

Doba trvání cesty/Duration of travel: *60days*

Místo/Location: *Tel Aviv, Israel*

#### Zpráva/Report:

The internship/collaboration has been organized in partnership with the professor Shahar Lev-Ari, director of research at the Integrative Medicine (The Tel Aviv Sourasky Medical Center), Tel Aviv – Israel. The internship was performed in the laboratory of medicinal herbs and cancer research, Oncology division, led by prof. Lev Ari.

The collaboration has been settled for two months, starting from the 13<sup>th</sup> of November till the 12<sup>th</sup> of January.

The aim of the collaboration was to investigate about the use of the natural compound boswellic acid (extracted from *boswellia serrata*) on several types of cancer cell lines.

The goal was to estimate the effects of the boswellic acid alone and in combination with radiotherapy as an adjuvant in order to sensitize cell lines to apoptosis and improve the effect of radiotherapy.

In particular the project has been focused on four different glioblastoma cell lines, as so far there is not a treatment for glioblastoma and this specific tumor results not affected by radiotherapy.

The techniques used for this part of the project were: proliferation assay WST1, FACS assay to evaluate the incorporation of propidium iodide (apoptosis assay), wound healing and Western Blot. All the techniques were performed after exposure of the used cell lines with 4gy radiation with and without boswellic acid.

The results obtained showed that boswellic acid has a synergic effect with radiation in two of the four cell lines used, leading to the 50% of cell growth arrest.

The boswellic acid alone is able to inhibit slightly the cell growth and the mechanism of action has been investigated. The FACS assay determined that the growth arrest is not due to cell cycle arrest. The Western Blot analysis excluded also apoptotic pathway (caspase dependent or independent).

Taken together the results are promising and leading to future studies in order to properly understand the mechanism by which the boswellic acid sensitize glioblastoma cells to radiotherapy starting the synergism. Further experiment need to be carried in order to complete the project.

*V Praze/Olomouci dne*

*In Prague/Olomouc, date: ... 10/2/2014 ...*

*Jméno, podpis/*

*Name, signature ..... Cosimo Walter D'Acunto .....*

*Fotodokumentace/Photos:*

*Tento projekt je spolufinancován Evropským sociálním fondem a státním rozpočtem České republiky.*