FACULTY OF BIOLOGY

YOUTH SCIENTIFIC CONFERENCE

"KLIMENT'S DAYS"

16th–17th NOVEMBER 2017

A B S T R A C T S



Sofia University St. Kliment Ohridski – Faculty of Biology
Union of Scientists in Bulgaria
National Science Fund of
Ministry of Education and Science of Bulgaria

YOUTH SCIENTIFIC CONFERENCE

"KLIMENT'S DAYS"

16th–17th NOVEMBER 2017

A B S T R A C T S

SOFIA 2017

SCIENTIFIC COMMITTEE:
Chairman:
Assoc. Prof. STOYAN SHISHKOV, PhD Dean of Faculty of Biology

Prof. Roumen Pankov, D.Sc.
Prof. Diana Petkova, D.Sc. (Union of Scientists in Bulgaria)
Prof. Yana Topalova, D.Sc
Prof. Spasimir Tonkov, D.Sc
Prof. Svetla Petrova, PhD
Prof Hrysto Gagov, PhD
Prof. Penka Moncheva, PhD
Prof. Plamen Mitov, PhD
Assoc. Prof. Vyara Mamatarkova,PhD
Assoc. Prof. Genoveva Nacheva, PhD (Union of Scientists in Bulgaria)
Assoc. Prof. Anely Nedelcheva, PhD
Assoc. Prof. Ganka Chaneva, PhD
Assoc. Prof. Valentina Ganeva, PhD
Assoc. Prof. Svetoslav Dimov, PhD
Assoc. Prof. Anelya Kenarova, PhD
Assoc. Prof. Petia Hristova, PhD
Assoc. Prof. Elena Tasheva, PhD
Assoc. Prof. Nadezhda Raycheva, PhD

ORGANIZING COMMITTEE:
Chairman:
Prof. Mariela Odjakova, PhD

Assoc. Prof. Dilyana Nikolova, PhD
Assoc. Prof. Ivan Traykov, PhD
Assoc. Prof. Asya Asenova, PhD
Assoc. Prof. Anita Tosheva, PhD
Assoc. Prof. Yana Evstatieva, PhD
Assoc. Prof. Luben Zagortchev, PhD
Assist. Prof. Atanas Grozdanov, PhD
Assist. Prof. Daniel Todorov, PhD
Assist. Prof. Denitsa Teofanova, PhD
Assist. Prof. Kamelya Yotovska, PhD
PhD student Teodora Georgieva
BSc degree student Nikola Atanassov
Secretary: Mrs Mariana Modreva
Webmaster: Mr Dimitar Milanov

http://www.biofac.info/

Funded by:
Project 2017 NSF, Ministry of Education and Science;
Project № 101/2017 Sofia University;
Project № 3022/2017 Scientific Research Department, Sofia University

ISSN: 1314–4960

M47

COMPARATIVE ANALYSIS OF EFFECTS OF LACTONES AND POLYPHENOLS FROM INULA OCULUS-CRISTI ON NORMAL AND CANCER CELLS

R. VELEVA[1]*, M. BORISOVA[1], M. MILEV[1], A. KOSTADINOVA[2], B. MRAVKOV[1], A. TRENDAFILOVA[3], M. TODOROVA[3], J. DOUMANOV[1], V. MOSKOVA-DOUMANOVA[1], T. TOPOUZOVA-HRISTOVA[1]

1-Biological faculty, Sofia University "St. Kliment Ohridski", Sofia, Bulgaria
2-Institute of Biophysics and biomedical engineering, BAS, Sofia, Bulgaria
3-Institute of Organic chemistry with centre of phytochemistry, BAS, Sofia, Bulgaria
**Corresponding author: a._k.c@abv.bg*

Plant extracts are widely used in traditional medicine for centuries. Experimental research findings indicate the anti-tumor effect of certain components of extracts, from some herbs from genus Inula.

Our previous investigations revealed different effects of total extracts from Inula oculus-cristi on cancer and non-cancer cells. Recent efforts of our group are to determine those of the extracts' components, responsible for observed differences.

The aim of the present study was to establish the effects of extracts with high concentration of lactones or polyphenols (phenolic acids and flavonoids). As a model systems we used non-cancer MDCKII cell line and cancer A549 cell line.

Cytotoxicity was measured spectrophotometrically by crystal violet assay and the IC50 (inhibition concentration) for both extracts on both cell lines was determined. Brightfield microscopy was used to observe changes in cell morphology.

Our results indicate stronger impacts of studied extracts on cancer cells. For non-cancer cells IC50 was higher and the observed morphological changes after treatment were milder, in comparison to cancer cells. The extract enriched with lactones showed stronger cytotoxic effect.

M48

THE EFFECT OF POLYPHENOLS ON ACTIN CYTOSKELETON OF EPITHELIAL CELLS

RALITSA VELEVA[1]*, TANYA TOPOUZOVA-HRISTOVA[1], ANELIYA KOSTADINOVA[2], ANTOANETA TRENDAFILOVA[3], JORDAN DOUMANOV[1], VESELINA MOSKOVA-DOUMANOVA[1]

1-Faculty of Biology, Sofia University "St. Kliment Ohridski", Sofia, Bulgaria
2-Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences, Sofia, Bulgaria
3-Institute of Organic Chemistry with Centre of Phytochemystry, Bulgarian Academy of Sciences, Sofia. Bulgaria
**Corresponding author: a._k.c@abv.bg*

Keywords: actin cytoskeleton, phenolic acids, flavonoid glycosides, *Inula oculus-christy*

Actin cytoskeleton is essential for various functional activities of cells, such as migration, adhesion and others, that are fundamental for the survival and proliferation of cancer cells. The regulation of these parameters is an approach in the development of new anti-cancer strategies for treatment and is of pharmacological interest. Besides cytostatic treatment, in order to prevent metastasis, cell migration should be suppressed.

We compared the activity of extract from *Inula oculus-christy*, enriched with phenolic acids and another in combination with flavonoid glycosides on actin cytoskeleton.

The present study aimed to explore how extracts affect actin cytoskeleton in cancer (A549) and non-cancer (MDCK) cells. We performed TRITC-phalloidin staining to visualize polymeric actin (F actin).

We found that both extracts affect differently cancer and non cancer cells.