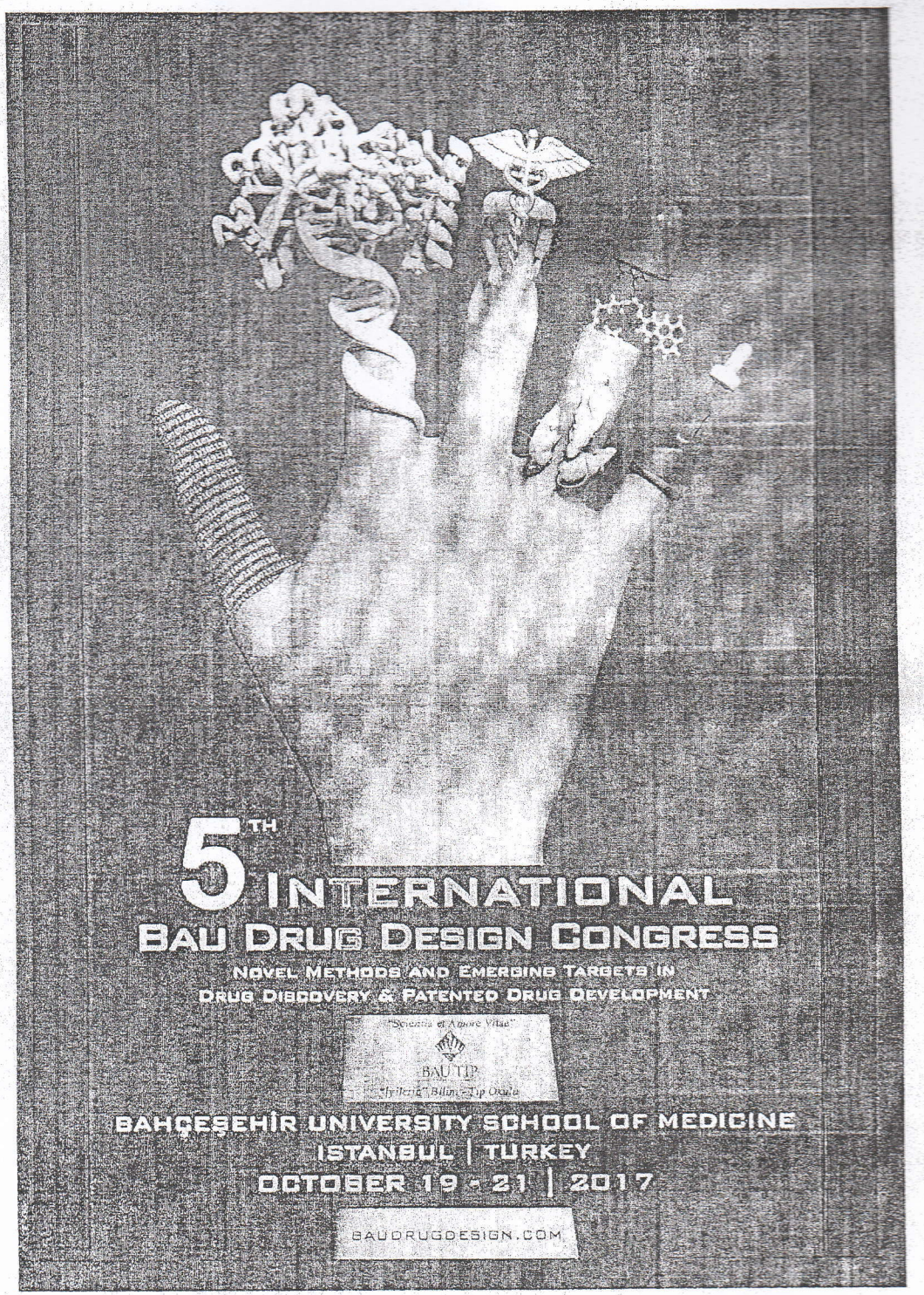
5TH
INTERNATIONAL
BAU DRUG DESIGN CONGRESS
NOVEL METHODS AND EMERGING TARGETS IN
DRUG DISCOVERY & PATENTED DRUG DEVELOPMENT
"Scientia et Amore Vitae"
BAU TIP
BAHÇEŞEHİR UNIVERSITY SCHOOL OF MEDICINE
ISTANBUL | TURKEY
OCTOBER 19 - 21 | 2017
BAUDRUGDESIGN.COM

SCIENTIFIC ORGANISING COMMITTEE

Prof. Dr. Canan ATILGAN
Sabanci University, Faculty of Engineering
and Natural Sciences

Prof. Dr. Özlem Tastan BISHOP
Director of Research Unit in Bioinformatics (RUBi)
Department of Biochemistry and Microbiology
Rhodes University - South Africa

Prof. Dr. Henry J. DUFF
University of Calgary, Faculty of Medicine
Libin Cardiovascular Institute of Alberta, Calgary, Canada

Prof. Dr. Yavuz ERGUN
Dokuz Eylul University,
Department of Chemistry

Prof. Dr. Burak ERMAN
Koc University, Department of Chemical
and Biological Engineering

Prof. Dr. Thomas MAVROMOUSTAKOS
University of Athens,
Department of Chemistry

Prof. Dr. Sergei NOSKOV
Centre for Molecular Simulation
Department of Biological Sciences
University of Calgary, Canada

Prof. Dr. Manthos G. PAPADOPOULOS
National Hellenic Research Foundation
Athens, Greece

Prof. Dr. Philip SEEMAN
Toronto University
Pharmacology and Psychiatry Depts.

Prof. Dr. Claudiu SUPRAN
University of Florence, Italy

Prof. Dr. Aykut UREN
Georgetown University Medical Center
Lombardi Comprehensive Cancer Center
Department of Oncology Department of Biochemistry and
Molecular & Cellular Biology

Prof. Dr. Esin Akı YALCIN
Ankara University,
Faculty of Pharmacy

Prof. Dr. Ismail YALCIN
Ankara University,
Faculty of Pharmacy

Assoc. Prof. Dr. Gulay BULUT
Bahcesehir University (BAU),
Department of Molecular Biology and Genetics

Assoc. Prof. Dr. Serdar DURDAGI
Bahcesehir University (BAU),
School of Medicine

Assoc. Prof. Dr. Erol OZKIRIMLI
Bogazici University,
Department of Chemistry

Assoc. Prof. Dr. Cenk SESAL
Marmara University,
Department of Biology

Assist. Prof. Dr. Umut AKBEY
Aarhus University, Denmark,
Aarhus Institute of Advanced Studies (AIAS)

Assist. Prof. Dr. Abdullah ECE
Biruni University,
Faculty of Pharmacy

Assist. Prof. Dr. Mustafa GUZEL
Medipol University, School of Medicine, International School of
Medicine, Department of Medical Pharmacology

PP-65

Comparative effects of monotherapy and polytherapy with CAPE and Cisplatin on SKBR3 Breast cancer cell line

Onur EROGLU[a] ,Esin GÜVENİR ÇELİK[a], Hacer KAYA[a], Kübra ERDOĞAN[a], Büşra SEVİM[a], Merve BAŞOL[a]

[a]Bilecik Şeyh Edebali University, Faculty of Science and Letters, Department of Molecular Biology and Genetics, Bilecik/Turkey

E-mail: onur.eroglu@bilecik.edu.tr

Background: Cancer treatment includes many strategies and chemotherapy still plays a central role. Cisplatin(Cis) is a widely used chemotherapeutic agent. It has been used for treatment of numerous human cancers including bladder, head and neck, lung, ovarian, and testicular cancers. (1) Cisplatin kills cancer cells by binding to DNA and interfering with its repair mechanism. Combination therapy of cisplatin with other cancer drugs have been applied as novel therapeutic strategies for many human cancers. Caffeic acid phenethyl ester (2-phenylethyl (2E)-3-(3, 4-dihydroxyphenyl) acrylate; CAPE) is a polyphenolic compound present in honey and propolis of honeybee hives. CAPE is known to possess various pharmacologic activities such as antioxidant, antiviral, immunomodulatory, anti-inflammatory and anticancer effects(2). The aim of the present study was to investigate the effects of monoteraphy and polyterapy of CAPE and cisplatin on SKBR3 breast cancer cell line.

Methods: SKBR-3 cells were cultured in DMEM supplemented with 10% fetal bovine serum (FBS) in a humidified atmosphere of 5% CO2 at 37 °C respectively. Cell viability was determined by MTT assay that assess the relative percentage of metabolically active cells compared to untreated cells. For MTT assay the dosage range of cisplatin is 30-90 µM and CAPE 30-75 µM and different dosage of two drugs .The IC50 (concentration that inhibits 50% of cell growth) was calculated for any drugs and combination with CAPE and Cisplatin. To determine cytotoxic effect of drugs a combination was used for survival assay for 24 h, 48 h and 72h.

Results: We compared the effect of monotherapy and polytherapy of drugs on breast cancer cell line with the control group.We observered the amount of cell viabilties after drug treatment were 54,86% for 90µM CAPE, 53,98% for 40µM Cisplatin and 77% for 20 µM CAPE+10 µM Cisplatin combine treatment. CAPE and Cis single therapy was shown decrease in viable cells at 24 h.We found in this study, a decrease of metabolic activity of the cell line with treatment CAPE and Cisplatin. We detected that the cytotoxic effect of these drugs with combine treatment(CAPE+Cis) are less than a single treatment on growth assay.

Conclusions: These results show that polytherapy is more effective than monotherapy because cancer cells may less to have resistance to multiple drugs treatment and this approach increases the chance of effective treatment.

Keywords: CAPE, cisplatin, breast cancer,polytherapy

References: 1. Cornara L.,Biagi M.,Xiao J.,Burlando B.Therapeutic Properties of Bioactive Compounds from Different Honeybee Products(2017) Front. Pharmacol.Vol.8 2.Dasari S, Bernard Tchounwou P. Cisplatin in cancer therapy: Molecular mechanisms of action. (2014), European Journal of Pharmacology. Vol. 740. p. 364–78. 3. Mokhtari RB, Homayouni TS, Baluch N, Morgatskaya E, Kumar S, Das B, et al. Combination therapy in combating cancer. (2015)Oncotarget.;8(23):38022–43.

PP-64

Investigation of the Effects of 5-Fluoruracil and Temozolomide Combinations on Cell Survival in SKBR3 Human Breast Cancer Cell Line

Onur EROGLU[a], Esin GUVENİR CELIK[a], Hacer KAYA[a], Kubra ERDOGAN[a], Busra SEVIM[a], Merve BASOL[a]

[a] Bilecik Şeyh Edebali University, Faculty of Science and Letters, Department of Molecular Biology and Genetics, Bilecik/Turkey

E-mail: onur.eroglu@bilecik.edu.tr

Background: Breast cancer is a malignant tumor that begins in breast cells. This malignant tumor can invade different tissues in different regions of the body. Breast cancer is one of the most common types of cancer worldwide [1]. Temozolomide (TMZ) is widely used in Glioblastoma multiforme therapy because it can easily pass through the blood barrier due to it's small structure. 5-Fluoruracil (5-FU) is a water-soluble, acidic, hydrophilic drug and is frequently used in the treatment of brain tumors [2]. The aim of this study is to investigate the cytotoxicity effects and cell proliferation of using single drug and a combination of 5- Fluoruracil and Temozolomide in SKBR3 breast cancer cell line.

Methods: SKBR3 breast cancer cell line was cultured in Dulbecco's Modified Eagle'sMedium (DMEM) containing Fetal Bovine Serum (FBS) 10% (v/v) and penisillinstreptomisin 1% (v/v) and incubated at 37°C in a humidified 5% CO2 incubator. Drug doses were determined by MTT assay. For cell viability,cells were treated with IC50 (concentration resulting in 50% inhibition of control growth) value for 24 h, 48 h and 72h of incubation.

Results: Only 5-FU produced an IC50 of 50 µM, whereas only TMZ resulted in an IC50 of 80 µM in the SKBR3 cell line. Especially, concentration of combination group 50 µM for 5FU- 80 µM for TMZ. 5-FU and TMZ combination therapy is more effective than single therapy of these drugs. 5-FU and TMZ single therapy was showed decrease in viable cells at time dependently. We observed that the cytotoxic effects of these drugs are decreased significantly with 5-FU and TMZ combined treatment at 48 hours.

Conclusions: These results indicated that cell viability decreased treatment with 5-FU and TMZ together compared to single using 5-FU and TMZ treatment in SKBR3 breast cancer cell. The findings are highly important in terms of annihilation of the cytotoxic effects through combined therapy and the fight against cancer.

Keywords: Breast cancer, SKBR3, 5-fluoruracil, Temozolomide

References: 1. Vibha C. A. D., Scott C. Q., Anne C. D., Jinghua H., Crystal N. H., · Stephan L., Risk of severe acute liver injury among patients with brain cancer treated with temozolomide: a nested case-control study using the healthcore integrated research database, (2017), J Neurooncol 2. Amirfallah A, Antikanser İlaçları Metabolize Eden enzimlerin Polimorfik Özellikleri. (2013) Dokuz Eylül Üniversitesi Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi