TURKISH CHEMISTS' SOCIETY

11. INTERNATIONAL DRUG CHEMISTRY CONFERENCE

MARCH 09-12, 2023 KEMER / ANTALYA

Atatürk Üniversitesi Atatürk University

GEBZE TECHNICAL UNIVERSITY

CONFERENCE PROGRAMME

..Main Sponsor..

REDOKS

..Sponsors..

ABDIIBRAHIM · ATABAY · EastPharma · aka · ANAMED & ANALİTİK GRUP · AN-KA · Anton Paar · ANT TEKNİK · AYESA · bilim · BMS KİMYA · ChromaScience · DLAB · DORUK · cryosil · ejder · HEKA · İKMİB · info · LiKrom · MERCK · MonoLab · NANOLAB · NOVAGENIX · organic communications · PARS · PQE GROUP · sem · terralab · trio · ULKAR KİMYA · VEFA İLAÇ · YGT LABORATUVAR · YILMAZ KİMYA

Not: Sponsorlar alfabetik sıralama ile yerleştirilmiştir.

..Supporters..

LabMedya · ACG publications · journal of chemical metrology · Records of Agricultural and Food Chemistry · Pharma Türkiye · medikal · LHUSTEK · SEPA

http://www.ilackongresi.org/

Dear Colleague,

The Drug Chemistry Congress, which was initiated by the Turkish Chemists Association in 2013 and has been held annually without any break, even during the pandemic, has been remarkable because it brings together pharmaceutical-related officials from academia, industry, and public institutions. Since 2019, the proportion of attendees from industrial groups at our "international" convention has surpassed 50 percent. We are working with vigor and commitment to promoting our organization, which is a marquee event among scientific conferences hosted in our country, to the worldwide community. Our organization, which we arranged as the 10th Drug Chemistry Congress in 2022, will be placed in Antalya between 9-12 March 2023 as part of the "11. Drug Chemistry Congress" alongside our country and all of our international collaborators.

The scientific program consists of invited lectures, oral presentations, short oral presentations, poster presentations, and workshops. Short oral presentations will also take place and create a platform for more people to exchange knowledge. Poster presentations are scheduled to take place for four hours in two days during the congress, and successful posters will be awarded based on the Poster Evaluation Jury's evaluation. Oral presentations may be included as "Full Text" or "Abstract Text" in the Electronic Congress Booklet, provided they have been assessed by the Scientific Committee.

The primary objective of the congress is to guarantee that scientists involved in all drug-related activities, from design to usage, actively participate and share their knowledge and experiences during the duration of the event. To conduct research and development activities more efficiently, effectively, and successfully during the congress, it is planned to host a meeting with the involvement of industrial organizations, pharmaceutical-related public institutions, and academicians. To strengthen university-industry interactions, it is also intended to build a "Project Collaboration Platform" which was begun at past congresses and will be carefully investigated at this congress.

Our Organization; Aware of the significance of the supply chain in R&D and manufacturing, the sector welcomes providers of consumables, devices, and equipment services. In this context, supplier groups will be able to sponsor our congress and provide interactive seminars to educate attendees on new technologies and approaches.

We hope to see you at the 11th International Drug Chemistry Congress, which will be held at the Antalya-Kemer Mirage Park Resort Hotel from March 9-12, 2023, and that the Congress will be helpful for all participants in pharmaceutical R&D and production, as well as our country and the international pharmaceutical industry.

CHAIR

Prof. Ramazan **ALTUNDAŞ**

VICE CHAIRS

Assoc. Prof. Serdar **BURMAOĞLU**

Dr. Y. Lütfü **ŞEN**

Scientific Coordinators

Assoc. Prof. Esen Bellur **ATICI**

Asst. Prof. İrem **KULU**

Congress Secretaries

Assoc. Prof. Derya **AKTAŞ ANIL**

Assoc. Prof. M. Fatih **POLAT**

Congress Coordinator

İkram **CENGİZ**

President of the Chemists' Society

Invited Speakers

Prof. G. J. (Frits) **PETERS**, Amsterdam University Medical Centers

Dr. Ali **ÖZÜER**, Vice President, ABDİBİO, Abdi İbrahim

Prof. Elif Damla **ARISAN**, Gebze Technical University

Prof. Engin **ULUKAYA**, İstinye University, Türkiye

Prof. Mehmet **AY**, Çanakkale Onsekiz Mart University, Türkiye

Assoc. Prof. Nurettin **MENGEŞ**, Necmettin Erbakan University, Türkiye

Dr. Eda **DEMİREL**, University of Heidelberg, Germany

Prof. Serdar **DURDAĞI**, Bahçeşehir University, Türkiye

Jesper Schufri **MEYER**, NNE, Denmark

Anders Bo **ANDERSEN**, NNE

Prof. Mehmet **İNAN**, Akdeniz University & İzmir Biomedicine and Genome Center, Türkiye

Dr. Raimund **MAIER**, Iris Biotech GmbH, Germany

Prof. Aigars **JIRGENSONS**, Latvian Institute of Organic Synthesis, Latvia

Fernanda **WAECHTER**, Lhasa Limited, England

Dr. Lance **SMALLSHAW**, UCB Pharma S.A., Belgium

Prof. Dr. Hakan **PARLAKPINAR**, İnönü University, Türkiye

Prof. Dr. Peter Langer, University of Rostock, Germany

Organizing Committee

Prof. Dr. Atilla **AKDEMİR**, Bezmialem Vakıf University

Prof. Dr. Yunus **KARA**, Atatürk University

Prof. Dr. Elif Damla **ARISAN**, Gebze Technical University

Prof. Dr. Cumhur **KIRILMIŞ**, Adıyaman University

Prof. Dr. Ahmet Ceyhan **GÖREN**, Gebze Technical University

Prof. Dr. Tuba **ÖZNÜLÜER ÖZER**, Atatürk University

Assoc. Prof. Semra **AKKAYA TURHAN**, Marmara University

Assoc. Prof. Haydar **KILIÇ**, Atatürk University

Assoc. Prof. Ufuk **ATMACA**, Atatürk University

Assoc. Prof. İsrafil **KÜÇÜK**, Gebze Technical University

Assoc. Prof. Yasin **ÇETİNKAYA**, Atatürk University

Assoc. Prof. Nurettin **MENGEŞ**, Van Yüzüncü Yıl University

Assoc. Prof. Aydan **DAĞ**, Bezmialem Vakıf University

Assoc. Prof. Bilal **NİŞANCI**, Atatürk University

Assoc. Prof. Serdar **KARAKURT**, Selçuk University

Assoc. Prof. Elif **ŞENKUYTU**, Atatürk University

Assist. Prof. Özlem **GÜNDOĞDU**, Ahi Evran University

Assoc. Prof. Şaziye Sezin **YÜCELİK**, Atatürk University

Assist. Prof. İrem **KULU**, Gebze Technical University

Assist. Prof. Mehmet H. **ÜÇIŞIK**, Yeditepe University

Assist. Prof. Bilgesu **ONUR SUCU**, Medipol University

Dr. Hasan **KOYUNCU**, Ulkar

Dr. Mustafa **ADIYAMAN**, Sanofi

Dr. Mustafa **KÖKTÜRK**, Biofarma İlaç

Dr. Büşra **ÖZTÜRK AYDIN**, Atatürk University

Dr. Ümit **DERELİ**, AİFD

Dr. Udaya Kumar **DUDE**, Abdi İbrahim

Dr. Aydan **HATİPOĞLU**, Novartis

Dr. Orçun **KALKAN**, RTA Laboratuvarları

Dr. Levent **KANDEMİR**, Polifarma

Dr. Erkan **MANKAN**, Trustlife Venture

Fatma **ALBAYRAK**, Gebze Technical University

Dr. Barış **ANIL**, Atatürk University

Nejat **ARÇELİK**, Deva

Enise Selcen **AŞKUN**, Hektaş

Birsen **CELAYIR**, Sanofi

Menekşe **ÇEBİ**, Gensenta İlaç

Fikret **DİNÇ**, Albafarma

Rüstem **EBİRİ**, Polifarma

Ömer Faruk **FIRAT**, Polifarma

Arzu **GÖBEK**, Atatürk University

Figen Onuk **GÖREN**, Pharmactive

Dr. Melike **GÜVEN**, Atatürk University

Dr. Tayfun **OLTULU**, Nepha Tıbbi Cihaz

Dr. Yusuf **ÖZLÜ**, Ulkar

Dr. O. Mutlu **TOPAL,** Emre Ecza

Dr. İrem **YENİCE**, Gensenta İlaç

Dr. Ali Osman **YILMAZ**, Deva

Dr. Emine **YURTOĞLU**, Hektaş

Beyza **HAMUR**, Gebze Technical University

Adil **KAYA**, Atabay

Berkant **KÖSEOĞLU,** Ulkar

Çağlar **KULU**, Aksuvital

Mahmut **ÖZBEK,** Worldmedicine

Ali İhsan **SEÇKİN**, Arven

Sercan **SEMİZ**, Worldmedicine

Müge **SÜRMEN**, Abdi İbrahim

Ömer **SÜRMEN**, Berko İlaç

Muhammet **TURGUT**, Polifarma

Ersin **YILDIRIM**, Santa Farma

Scientific Committee

Prof. Dr. Aigars **JIRGENSONS,** Latvian Institute of Organic Synthesis, Latvia

Prof. Dr. Peter **LANGER**, University of Rostock, Germany

Prof. Dr. G. J. (FRITS) **PETERS,** Amsterdam University Medical Centers, The Netherlands

Assoc. Prof. Raid J. **ABDEL-JALIL**, Sultan Qaboos University, Umman

Dr. Eda **DEMİREL**, University of Heidelberg, Germany

Assoc. Prof. Azim Ziyaei **HALIMEHJANI**, Kharazmi University, Iranian

Dr. Lance **SMALLSHAW,** UCB Pharma S.A., Belgium

Dr. Raimund **MAİER**, Iris Biotech GmbH, Germany

Jesper Schufri **MEYER,** NNE, Denmark

Anders Bo **ANDERSEN**, NNE, Denmark

Prof. Dr. Özlen **GÜZEL AKDEMİR,** İstanbul University

Fernanda **WAECHTER**, Lhasa Limited, England

Prof. Dr. Öztekin **ALGÜL,** Mersin University

Prof. Dr. Mehmet **İNAN**, Akdeniz University

Prof. Dr. Mehlika Dilek **ALTINTOP,** Anadolu University

Prof. Dr. Rahmi **KASIMOĞULLARI**, Dumlupınar University

Prof. Dr. Aliye **ALTUNDAŞ**, Gazi **University**

Prof. Dr. İrfan **KOCA**, Yozgat Bozok University

Prof. Dr. Elif Damla **ARISAN,** Gebze Technical University

Prof. Dr. Ahmet **ÖZDEMİR**, Anadolu University

Prof. Dr. Burhan **ATEŞ**, İnönü University

Prof. Dr. Gürkan **ÖZTÜRK**, Atatürk University

Prof. Dr. Mehmet **AY,** Çanakkale 18 Mart University

Prof. Dr. Hakan **PARLAKPINAR**, İnönü University

Prof. Dr. Mustafa **CEYLAN,** GOP University

Prof. Dr. Hasan **SEÇEN**, Atatürk University

Prof. Dr. Eşref **DEMİR,** Antalya Bilim University

Prof. Dr. Ali **DİŞLİ,** Gazi University

Prof. Dr. Ahmet **HACIMÜFTÜOĞLU**, Atatürk University

Assoc. Prof. Hülya **ÇELİK,** Ağrı İbrahim Çeçen University

Assoc. Prof. Salih **ÖZÇUBUKÇU,** ODTÜ

Assoc. Prof. Serhan **TÜRKYILMAZ,** ODTÜ

Dr. Gökçe YILDIRIM **BUHARALIOĞLU**, Ege University

Assist. Prof. Antoine **MARION,** ODTÜ

Prof. Dr. Şahabettin **SELEK**, Bezmialem Vakıf University

Prof. Dr. Ferhan **TÜMER**, Sütçü İmam University

Prof. Dr. Hasan **TÜRKEZ**, Atatürk University

Prof. Dr. Engin **ULUKAYA**, İstinye University

Assoc. Prof. Nurettin **MENGEŞ**, Necmettin Erbakan University

Assoc. Prof. Nurinisa **ÖZTÜRK**, Atatürk University

Assist. Prof. Necip **ALTUNDAŞ**, Atatürk University

Assoc. Prof. Safacan **KÖLEMEN**, Koç University

Thursday March 09, 2023	
10:00 – 14:00	Registration
Opening Ceremony	
15:00 – 15:40	Prof. Dr. Ramazan **ALTUNDAŞ**, Chair
	İkram **CENGİZ**, Chair of The Turkish Chemists` Society
	Prof. Dr. Hacı Ali **MANTAR**, Rector, Gebze Technical University
	Prof. Dr. İsmail **YÜKSEK**, Rector, Antalya Bilim University
15:40 – 16:00	Ömer Faruk **FIRAT**, Polifarma
16:00 – 16:20	Doğan **TAŞKENT**, Atabay
16:20 – 16:40	Altuğ **OĞUZ**, İKMİB
16:40 – 17:00	Dr. Asım **HOCAOĞLU**, President, TİTCK, Sağlık Bakanlığı
17:00 – 18:00	**Crystal Mortar Awards Ceremony**
Session 1	Session Chair: Dr. Mutlu TOPAL
18:00 – 18:40	Dr. Ali **ÖZÜER**, Vice President, ABDİBİO, Abdi İbrahim Future Health Technologies- Biotechnology
18:40 – 20:30	Dinner

Friday March 10, 2023	
Session 2	Session Chair: Prof. Dr. Engin ULUKAYA
09:00 – 09:40	Prof. Dr. G. J. (Frits) **PETERS**, Amsterdam University Medical Centers The European NCI initiative for drug development; role of pharmacology
09:40 – 10:10	Assoc. Prof. Nurettin **MENGEŞ**, Necmettin Erbakan University Research of a new lead compounds for Glioblastoma: Pharmacodynamic and pharmacokinetic studies on heterobicyclic compounds
10:10 – 10:30	Assoc. Prof. Raid J. **ABDEL-JALİL**, Sultan Qaboos University Benzazoles with Fluorine Appendages
10:30 – 11:10	**Coffee Break**
Session 3	Session Chair: Assoc. Prof. Esen BELLUR ATİCİ
11:00 – 11:30	Prof. Dr. Engin **ULUKAYA**, İstinye University Critical considerations on preclinical evaluation of newly synthesized compounds
11:30 – 12:00	Prof. Dr. İbrahim Halil **KAVAKLI**, Koç University Cryptochrome-mediated regulation of fasting blood glucose in diabetic mice
12:00 – 12:15	Mumin EMİNOV**, Terra Analiz** Importance of microbial identification with MALDI-TOF technology in pharma industry
12:15 – 12:30	Koray **BULUT**, FarmaPatent Importance of patent protection in Turkey

12:30 – 14:00	**Lunch**
Session 4	Session Chair: Assoc. Prof. Raid J. **ABDEL-JALİL**
14:00 – 14:40	Dr. Raimund **MAIER**, Iris Biotech GmbH Challenges and solutions in solid phase peptide API synthesis (SPPS)
14:40 – 15:10	Dr. Eda **DEMİREL**, University of Heidelberg Current methods in basic protein biochemistry research
15:10 – 15:30	Assoc. Prof. Azim Ziyaei **HALİMEHJANİ**, Sharif University of Technology Recent Advances in the Synthesis and Application of Dithiocarbamates
15:30 – 16:00	**Coffee Break**
Session 5	Session Chair: Assoc. Prof. Salih ÖZÇUBUKÇU
16:00 – 16:30	Prof. Dr. Mehmet **AY**, Çanakkale Onsekiz Mart University Prodrugs for nitroreductase based cancer therapy
16:30 – 16:45	Dr. Richard LADD, SEM The power of vacuum UV detection in gas chromatography in the pharmaceutical industry
16:45 – 17:00	Assoc. Prof. Serpil **DEMİRCİ**, Giresun University Synthesis of propofol derivative new generation Schiff bases and analyzation of their in silico anesthetic properties
17:00 – 17:15	Bengisu **SARAÇLAR**, Gazi University Evaluation of cleaning validation of oral tablet formulation
17:15 – 17:30	Sündüs **ERBAŞ ÇAKMAK**, Necmettin Erbakan University Regulation of cell migration and hypoxia metabolism with a novel G-Quadruplex stabilizer
Session 6	Short Oral Presentations
18:30 – 19:30	Session Chair: Prof. Yunus **KARA**, (Mirage I-II) Session Chair: Prof. İrfan **KOCA**, (Odeon) Session Chair: Assist. Prof. İrem **KULU**, (Phoenix I) Session Chair: Dr. Emine **YURTOĞLU**, (Phoenix II)
19:00 – 20:30	**Dinner**
19:30 – 21:30	**Poster Presentations, Mirage I-II**

Saturday March 11, 2023	
Session 7	Session Chair: Prof. Ahmet Ceyhan GÖREN
09:00 – 09:20	Prof. Dr. Hamdullah **KILIÇ**, Atatürk University Extractables and leachables testing of drug products
09:20 – 09:50	Prof. Dr. Serdar **DURDAĞI**, Bahçeşehir University Speeding up translation from preclinical to clinical phases: Drug Repurposing Efforts
09:50 – 10:30	Prof. Dr. Aigars **JIRGENSONS**, Latvian Institute of Organic Synthesis

	Substrate derived inhibitors of plasmodium serine protease SUB1 as antimalarial leads
10:30 – 11:10	**Coffee Break**
Session 8	Session Chair: Dr. Hasan KOYUNCU
11:00 – 11:40	Dr. Lance **SMALLSHAW**, UCB Pharma S.A. The control of impurities – Nitrosamine impurities in medicinal products and the discovery of nitrosamines drug substance related impurities (NDSRIs)
11:40 – 12:10	Prof. Dr. Mehmet **İNAN**, Akdeniz University & İzmir Biomedicine and Genome Center Development of Recombinant Vaccine and Drug Candidates in Pichia pastoris
12:10 – 12:30	Udaya Kumar **DUDE**, Abdi İbrahim Bioequivalence Challenges in the Development of Value Added Generics
12:30 – 14:00	**Lunch**
Session 9	Session Chair: Prof. Mehmet AY
14:00 – 14:20	Konstantin **VOLCHO**, Novasibirsk Institue of Organic Chemistry Inhibition of TDP1 as a promising approach to new anticancer drugs
14:20 – 14:40	Nikolai **Li-ZHULANOV**, Novasibirsk Institue of Organic Chemistry Rational design of new monoterpene-containing azoles and their antifungal activity
14:40 – 15:00	Prof. Dr. Ahmet Ceyhan **GÖREN**, Gebze Technical University Biological activities of Origanum L. (Lamiaceae)
15:00 – 15:15	Assoc. Prof. Serkan **DAYAN**, Erciyes University Design and Fabrication of Organic / Inorganic Nanomaterials for Drug Delivery Systems
15:15 – 15:30	Asst. Prof. Melek **PARLAK KHALILY**, Yozgat Bozok University Cannabidiol-loaded peptide hydrogel dressings for wound healing
15:30 – 16:00	**Coffee Break**
Session 10	Session Chair: Assist. Prof. Sefacan KÖLEMEN
16:00 – 16:40	Anders Bo **ANDERSEN**, NNE Process design of 14 production suites in a multimodal facility
16:40 – 17:20	Jesper Schufri **MEYER**, NNE How high complicated projects benefit greatly from interdisciplinary project teams
17:20 – 17:40	Dr. Saiful Azmi **JOHARI**, Forest Research Institue Malaysia (FRIM) Novel plant-based gamma-lactam compound as potential anti-MRSA agents
17:40 – 18:00	Devrim **ÇELİK SAKIZCI**, Arven Challenges in Developing a Medical Device and a Dry Powder Inhaler

18:00 – 18:15	Asst. Prof. Deniz **SEZLEV BİLECEN**, Konya Food and Agriculture University Preparation of AON nanofibers and their in situ stability
18:15 – 18:30	Dr. Neşe **ULAR ÇAĞATAY**, SEM Development of a dynamic multiple reaction monitoring LC-APCI-MS/MS method for quantification of ten nitrosamines in Ranitidine API with simple extraction approach
18:30 – 19:30	**Dinner**
19:30 – 21:30	**Poster Presentations, Mirage I-II**

Sunday March 12, 2023	
Session 11	Session Chair: Prof. Nermin ŞİMŞEK KUŞ
09:00 – 09:40	Fernanda **WAECHTER**, Lhasa Limited Assessing the concern of complex nitrosamines
09:40 – 10:10	Prof. Dr. Elif Damla **ARISAN**, Gebze Technical University Personalized medicine: New generation therapeutics
10:10 – 10:30	Assoc. Prof. Muhammad Moazzam **NASEER**, Quaid-i-Azam University Synthesis of novel hydrazide conjugates of phenoxy pendant isatins as potent alpha-glucosidase inhibitors
10:30 – 10:45	Asst. Prof. Süleyman **AKOCAK**, Adıyaman University In silico molecular docking study of 1,3,5-triazine substituted sulfonamides for SARs-CoV-2 active main protease
10:45 – 11:00	Nilesh **SHAH**, Abdi İbrahim Recent Challenges in Global Patent Filing
11:00 – 11:15	Asst. Prof. S. Betül **SOPACI**, Kırşehir Ahi Evran University Monitoring the innate immune response upon internalization of a foreign nucleic acid in human keratinocytes cell lines
11:15 – 11:30	Dr. Hande **GÜNDÜZ**, Koç University Mitochondria targeted monoamine oxidase-A activatable chemiluminescent probe for in vivo and in vitro detection of cancer cells
11:30 – 13:00	**Closing Ceremony and Poster Awards**

Phoenix I Hall		
Poster no	**Author**	**Title**
OP41	Fatih Berk BORAN	Synthesis of EUD RS30D Coated Alginate Nanoparticles
OP42	Muhammed Mehdi ÜREMİŞ	Anticancer and Anti-inflammatory Effect of Benzothiazole Derivatives Targeted NF-κB/COX-2/iNOS in Hepatocellular Carcinoma Cell Line
OP43	Özgecan ŞAVLUĞ İPEK	Synthesis and Biological Evaluation of Novel Lonidamine Derivatives as Potential Antitumor Agents
OP44	Busra ARVAS	Design and Synthesis of Novel Triazole-Tethered Piperazine Coumarin Hybrids
OP45	Elif GÖKÇAY BILICI	Fentanyl Analogs and PBA's
OP46	Sema ŞENOĞLU	Synthesis, characterization, in vitro cytotoxicity of novel metallo phthalocyanines and their efects on Caenorhabditis Elegans thermotolerance
OP47	Fatma AKSAKAL	Evaluation of Structure-Activity Relationships of Antitubercular Tryptanthrin Analogues and Their Interaction with the Enoyl-ACP Reductase
OP48	Harun NALÇAKAN	Computational Modeling of Novel Filgotinib Derivatives as Potent Janus Kinase (JAK1/JAK2) Inhibitors: A Detailed Molecular Docking and in-silico ADMET Analysis
OP49	Kamala ASGAROVA	Novel Amino and Thio Antraquinone derivatives: Design, Synthesis, Characterization, Molecular Docking and Their Activity Against Various Cancer Cell Lines
OP50	Suleyman AKOCAK	Sulfamethazine Containing 1,3-diaryltriazen Derivatives: In silico and In vitro Antibacterial Studies
OP51	Fatma YALÇIN	Evaluation of Anticancer Drug and DNA Interaction by Using High Performance Liquid Chromatography (HPLC)
OP52	Osman Nuri ASLAN	Synthesis, characterization and sensor properties of a newly synthesized sulfonyl hydrazone derivative molecule
OP53	Büşra DEMET AYDIN	A Validated RP-HPLC Method For The Determination of EDTA in the Cream Formulations Which Contains Oxymetazoline HCl, Methyl Paraben and Propyl Paraben with UV Detection By Using Derivatization Technique
OP54	Tuba TEKELI	In silico and In vitro Antibacterial Potency Evaluation of Some Azo Based 2-thioxo-pyrimidine-4,6-dione Derivatives
OP55	Burcu ÜNLÜ ENDİRLİK	Joint Toxicity Analysis of PFOA-Glyphosate Binary Mixtures
OP56	Şeyma Gülnaz YARLILAR	Anticancer Effect of Synthetic Ribose Derivative
OP57	Nurcan BİÇEN KARAKOÇ	Synthesis, Characterization and Examination of Bioactivities of Novel Analogues of a Wound-Healing Peptide
OP58	Eylem KUZU	Design and Synthesis of Novel Pyrazolopyrazinone Derivatives Targeting Lung Cancer Cells (A549)
OP59	Yağmur BİLİZ	Synthesis, Characterization and Determination of Biological Activity of Some Novel δ-Keto Hydrazide-Hydrazones

Design and Synthesis of Novel Pyrazolopyrazinone Derivatives Targeting Lung Cancer Cells (A549)

Eylem KUZU[a], Meltem Tan UYGUN[b]

[a]*Chemistry Section, Institute of Natural and Applied Sciences, Van Yuzuncu Yil University, Van, Turkey*

[b]*Pharmaceutical Chemistry Section, Faculty of Pharmacy, Van Yuzuncu Yil University, Van, Turkey*

dreylemkuzu@gmail.com

Abstract

Nitrogen-containing heterobicyclic systems are in the framework of many therapeutic agents. Among the heterobicyclic ring systems, various derivatives fused with pyrazole moiety are reported in the literature to act by inhibiting proliferation in cancer cells. It was found that the pyrazolopyrazine skeleton, which is one of the compounds formed by fusing with the pyrazole moiety, has a very high antiproliferative effect, especially in the lung cancer cell line.[1] For example, Compound **1**, causes apoptotic cell death in A549 lung cancer cell line (IC_{50}: 24.2 µM); compound **2** was able to selectively inhibit the growth of lung cancer cells (H322, IC_{50}: 28.5 µM) in a dose-dependent manner (Fig 1).[2,3]

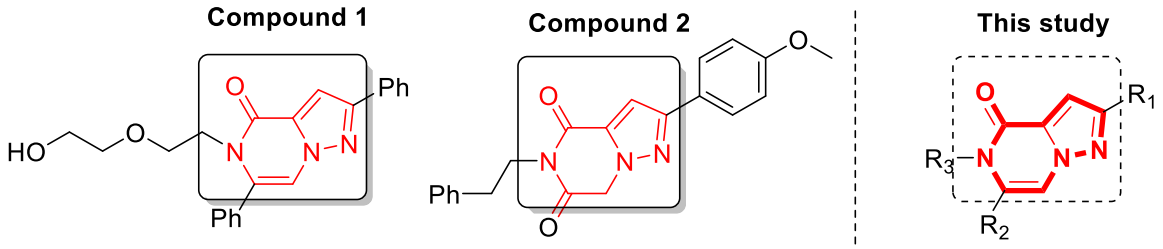


Figure 1. The structures of pyrrolopyrazine in the literature and in this study

However, there is very limited information in the literature about the synthesis of pyrazolopyrazine ring systems and their antiproliferation on lung cancer cells. In this study, based on the pyrazolopyrazine derivatives targeting lung cancer cells in the literature, a new method has been developed for the synthesis of new pyrazolopyrazine derivatives with potential antiproliferative effects. The targeted synthetic design offers a low-cost, high-yield, and easy-to-purify method for the synthesis of trisubstituted pyrazolopyrazine derivatives. Our studies on the tolerance of the method against functional groups and the cytotoxic activity of the targeted compounds on A549 cancer cell lines continue.

Keywords**:** *Synthesis, Pyrazolopyrazinon, Antiproliferation, Lung cancer*

Acknowledgment: This work was supported by Van YYU BAP (Project ID: TSG-2022-10353).

References

1. Uygun, M. T.; Amudi, K.; Turaçlı, İ. D.; Menges, N. *Mol. Divers.* **2022**, *26*(1), 113.
2. Zheng, L. W.; Zhu, J.; Zhao, B. X.; et al. *Eur. J. Med. Chem.* **2011**, 45(12), 5792.
3. Lv, H. S.; Kong, X. Q.; Ming, Q. Q.; et al. *Bioorg. Med. Chem*. **2012**, 22(2), 544.