www.instec2024.com

INSTEC-2024

International Nuclear Sciences and Technologies Conference

5-7 September 2024

Ege University Ataturk Cultural Center, IZMIR

Abstract Book



Organization Secretariat

MOTTO www.motto.tc

+90 232 446 06 10
info@motto.tc

O-35 Analysing the Relationship Between Electricity Generation and Environmental Impact of Coastal Nuclear Plants in the European Union 46

O-36 Radiologic Risk Assessment of Outdoor Gamma Dose Rate in Çorum Province, Turkey 47

O-37 Sedimentation Rate and Chronology of Çınarcık Basin, the Marmara Sea 48

O-38 Natural Radioactivity Measurements and Dose Assessment in Beach Sands Collected Along the Coastline of the Campania Region, Southern Italy 49

O-39 Investigation of the Usability of Ce and N Doped Hybrit Carbon Quantum Dots for the Removal of Neodymium Ions 50

O-40 Synthesis and Characterization Studies of CMC/NCC Nanocomposites Derived from Textile Waste for the Adsorption of Lanthanum Ions from Aqueous Solutions 51

O-41 Possible Applications of Zeolitic Rocks in the Nuclear Waste Field 52

O-42 Development, Characterization and Investigation of Sorption Properties of Graphene Oxide/alginate Based Nanobiocomposites for Strontium Removal 53

O-43 Development of a Methyl Thymol Blue-Loaded Alginate Hydrogel for the Quantitative Detection of Sr(II) Ions in Water 54

O-44 Radio Ecology in India: Strategies for Improved Understanding and Mitigation of Radiation Impact 55

O-45 Impact of Uranium on the Environment: A Machine Learning Perspective 56

POSTER ABSTRACTS 57

P-01 Clofoctol (o-CLO): Isolation from Cave Environment, Radioiodination and its Antibiofilm Effect 58

P-02 Preparation, Optimization and Stability of Dye-Loaded Protein Structured Nanocolloids as a Novel Radiopharmaceutical Candidate 59

P-03 Quantitative Imaging Characteristics of Terbium-161 60

P-04 Natural Radionuclide Concentrations in Coal and Combustion Wastes in Medium-Scale Industry 61

P-05 Complexation Behavior of Caffeic and Cinnamic Acids Towards La(III), Sm(III), Th(IV) and UO_2(II) Ions 62

P-06 Utilization of Cyanex-272 Impregnated Amberlite XAD Resins for Uranium Adsorption 63

P-07 ^{89}Zr-Labeled DFO@Durvalumab-HSA Nanoparticles: in Vitro Potential for Triple-Negative Breast Cancer 64

P-08 Investigation of Radon, Radium, pH and Conductivity Values of Drinking Water: Menemen Region 65

P-09 Synthesis of Naphthelene Diimide Derivative Targeting G-Quadruplex Structures 66

P-10 Radiolabeling and Quality Control Studies of Dexketoprofen Trometamol Loaded Chitosan Nanoparticles 67

P-11 Seagrass Active Carbon / Pectin Composite (AC-P) Formation for Strontium Adsorption 68

P-12 Fly Ash-TiO_2 Composites for Adsorption of Sr^{2+} from Aqueous Solution 69

P-13 Luminescence Properties of $BaSO_4$ Doped with Gd Synthesized by Solid State Reaction Method 70

P-14 Natural Radioactivity of Soils in Aydin-Germencik Geothermal Region 71

P-10 Radiolabeling and Quality Control Studies of Dexketoprofen Trometamol Loaded Chitosan Nanoparticles

Assoc. Prof. Meliha Ekinci[1], Assoc. Prof. A. Alper Öztürk[2], Prof. Derya İlem-Özdemir[1]
[1] Ege University, Faculty of Pharmacy, Department of Radiopharmacy
[2] Anadolu University, Faculty of Pharmacy, Department of Pharmaceutical Technology

In this study, dexketoprofen trometamol (DT) loaded chitosan-based nanoparticles were radiolabeled with technetium-99m ([^{99m}Tc]Tc), and quality control and in vitro stability studies of the radiolabeled nanoparticles were performed. First, DT loaded chitosan-based nanoparticles were prepared spray drying technique. According to obtained results, nanoparticles with zeta potential of +48.7±2.1 mV, particle size of 650.8±10.2 nm, polydispersity index of 0.437±0.052, and encapsulation efficiency of 75.1±1.5% were successfully developed. Then, nanoparticles were radiolabeled with [^{99m}Tc]Tc using the stannous tartrate method, and quality control experiments for [^{99m}Tc]Tc-DT-chitosan nanoparticles were performed using radioactive thin-layer chromatography (RTLC). In addition, stability studies of [^{99m}Tc]Tc-DT-chitosan nanoparticles in different mediums (0.9% sodium chloride solution, serum) were performed. According to the obtained results, [^{99m}Tc]Tc-DT-chitosan nanoparticles were prepared with over 95% labeling efficiency by a novel, easy, and quick direct method with a 15 min incubation time at pH 9.0. To achieve the best radiolabeling conditions, 1 mL nanoparticle formulation, 1 mg of reducing agent (stannous tartrate), 0.1 mg of antioxidant agent (ascorbic acid), and 37 MBq [^{99m}Tc]Tc were used. Stability studies indicated that [^{99m}Tc]Tc-DT-chitosan nanoparticles were stable for up to 6 h in 0.9% sodium chloride solution at room temperature, and serum at 37°C. Further studies on the biodistribution of radiolabeled nanoparticles in experimental animals for inflammation imaging are in progress.

Keywords: dexketoprofen trometamol, chitosan nanoparticles, technetium-99m, radiolabeling.

AUTHOR INDEX

A

Abdelali Aboussabek, 89, 90
Ahmet Aydın Özsaran, 35
Ahmet Bilgi, 35
Alara Çan, 70
Ali Rıza Ongun, 88
Alparslan E. Oral, 54
Alper Yolay, 44
Altinsoy N., 47
Amitansu Pattanaik, 55, 56
Ana Carolina Ruiz-Fernández, 3, 4
Arif Özulus, 23
Arzu Ege, 28
Asiye Meral ERTEM, 74
Assoc. Prof. A. Alper Öztürk, 67
Assoc. Prof. Meliha Ekinci, 67
Ayca Tuncel, 30
Ayça Tunçel, 64
Ayfer Yurt Kılçar, 35, 86
Aysun Uğur Görgün, 23
Ayşenur Özçetin, 33, 36

B

Bekir Cem Kuşdemir, 35
Bekir Özkan, 26
Benrachı Fatima, 82
Benrachi Fatima, 40
Berkant Senturk, 85
Berkant Şentürk, 50
Berkay Camgoz, 41
Berkay Camgöz, 14, 23
Bilal Kovan, 17
Bilgehan Cem Turhan, 70
Birol Engin, 31
Bouhıla Ghania, 82
Buket Gülsoy, 78
Burak Oluçay, 48, 95

C

C. Bertan Güllüdağ, 42
Caner Taşköprü, 18, 19, 25, 29, 65
Caner Yalçın, 19
Cem Gok, 51, 84
Cem Kıncal, 94
Ceren Altun, 18
Ceren Gündoğdu, 15, 29
Ceren Sezgın, 60
Ceren Sezgin, 38

Ç

Çiğdem İçhedef, 37, 62, 66, 86
Çinel Köksal Karayıldırım, 86

D

Daljeet Singh Wadhwa, 91
Derya Gülcemal, 66
Derya İlem Özdemir, 59
Derya Özel, 27, 64
Didem Goksoy, 60
Dilara Lofça, 28
Dimitar Tonev, 52
Doc. Rndr. Eva Viglašova, Phd., 81
Doc. Rndr. Eva Viglašová, Phd., 76
Doc. Rndr. Oľga Rosskopfová, Phd., 81
Doğa Buse Tellici, 43
Doğan Yaşar, 94
Doğukan Alkım Türközü, 20
Dr. Laouet Nadjet, 40

E

E. İlker Medine, 62
Elcin Ekdal Karali, 61
Elçin Ekdal Karalı, 29, 70
Elif Kemah, 36
Emın Ilker Medıne, 72
Emily Betancourt Fernández, 37
Emin Ilker Medine, 35
Emin İlker Medine, 64, 66, 77
Emine Hilal MERT, 74
Emine Nostar Aslan, 69
Emre Özgenç, 59
Emre Tabar, 18, 25, 33, 34, 36
Emre Uygur, 38, 43, 60
Ercüment Aksoy, 46
Erkan Sezgin, 41
Esra Yaşar, 43
Ezgi Tut, 87

F

Fahri Emrah Soylu, 86
Fatima Benrachi, 39
Fatma Nil Ertas, 54
Fatma Yurt, 27, 30, 41, 64
Fazilet Zumrut Biber Muftuler, 38
Fazilet Zümrüt Biber Müftüler, 43, 58
Fikriye Gul Gumuser, 38
Filiz Bostan, 77

INSTEC-2024

International

Nuclear Sciences and Technologies Conference

5-7 September 2024

Ege University Ataturk Cultural Center, IZMIR

Certificate of Participation

This certificate is presented to

MELİHA EKİNCİ

for acknowledgement as a participant in ***International Nuclear Sciences and Technologies Conference*** *which was held in Izmir-TÜRKİYE on 5-7 September 2024.*

Prof. Dr. Sabriye YUŞAN
Ege University
Institute of Nuclear Sciences