

## 3rd International Conference on

# PHARMACOLOGY AND TOXICOLOGY

&

# NANO MEDICINE AND ADVANCED DRUG DELIVERY

29-30, August 2022



## AVANI ATRIUM BANGKOK HOTEL









# Scientific Program

3<sup>rd</sup> International Conference on

**PHARMACOLOGY AND TOXICOLOGY**

**&**

**NANO MEDICINE AND ADVANCED DRUG DELIVERY**

Avani Atrium Bangkok Hotel

**MONDAY**

**August 29, 2022**

## Day -1 (August 29, 2022)

**Hall Name: Avani Atrium Bangkok Hotel**

10:00 - 10:05 **Onsite Registrations**

10:05 - 10:15 Welcome Speech & Opening Ceremony

### KEYNOTE SESSION

10:15 - 10:45 Title: 'A farewell to Phlebotomy' by Hepcidin inducer Laennec & Porcine and their application to the treatment on NASH complicating with Type2 DM  
**Dr. HAMADA YUKI**, HAMADA Clinic for Gastroenterology and Hepatology, Sapporo, Japan.

### COFFEE BREAK (10:45 - 11:00)

### SPEAKER SESSION

11:00 - 11:20 Title: Environmental enrichment protocol for diabetes induced toxic effects in animal models  
**Dr. Narendra Pamidi**, Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Malaysia.

11:20 - 11:40 Title: Ursodeoxycholic acid improves liver function via phenylalanine/tyrosine pathway and microbiome remodelling in patients with liver dysfunction  
**Prof. Da Jung Kim**, Seoul National University Hospital, South Korea.

11:40 - 12:00 Title: Bioengineered Yeast Vacuoles as Drug Delivery Carrier with Induced Proinflammatory Response after Daunorubicin Delivery  
**Mr. Wooil Choi**, Jeonbuk National University, South Korea.

12:00 - 12:20 Title: Identification of novel paraben-binding peptides using phage display  
**Mr. LEE JAEWOONG**, Jeonbuk National University, South Korea.

### LUNCH BREAK (12:20 - 13:15)

### KEYNOTE SESSION

13:30 - 14:00 Title: Design and synthesis of hybrid compounds of cyclometalated iridium(III) complexes and triptycenes with basic peptides that induce paraptosis in cancer cells  
**Prof. Shin Aoki**, Tokyo University of Science, Japan.

### SPEAKER SESSION

14:00 - 14:20 Title: Chamomile (*Matricaria recutita* L.) – Natural Substances and Their Curative Effects  
**Prof. Ivan Salamon**, University of Presov, Slovakia.

14:20 - 14:40 Title: Protocol for the Rapid Detection of Salmonella by using Antibody Functionalized Immuno-magnetic Iron Oxide Nanoparticles  
**Xinyi Zhao**, Furong Tian Technological University Dublin, Dublin, Ireland



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## COFFEE BREAK (14:40 - 15:00)

## POSTER SESSION (15:00 - 16:00)

ICPTNM P1	Title: Formulation and Evaluation of Lemongrass Hand Sanitizer <b>Dr. Yogesh Vishnupant Ushir</b> , SMBT College of Pharmacy and Institute of D. Pharmacy, SMBT Educational Campus, India
ICPTNM P2	Title: Immune-enhancing activity of Vacuole isolated from <i>S.cerevisiae</i> via TLR 2/4 mediated MAPK and NF-kB signaling pathways in Murine Macrophages <b>Miss. Su-Min Lee</b> , Jeonbuk National University, South Korea.
ICPTNM P3	Title: Screening and Identification of VDBP-Complex-Specific Binding Peptide Sequence for Administration of Optical Vitamin D Concentration in Immunoregulatory <b>Mr. Taehwan Kim</b> , Jeonbuk National University, South Korea.
ICPTNM P4	Title: Skin pigmentation treatment of lysosomal fraction modified to overexpress glutathione peroxidase <b>Mr. Gyeongchan Joen</b> , Jeonbuk National University, South Korea.

## Closing Ceremony and Certificate Distribution



# Scientific Program

3<sup>rd</sup> *International Conference on*  
**PHARMACOLOGY AND TOXICOLOGY**  
&  
**NANO MEDICINE AND ADVANCED DRUG DELIVERY**

Avani Atrium Bangkok Hotel

**TUESDAY**  
**August 30, 2022**

## DAY 2- AUGUST 30, 2022

### INTRODUCTION (10:00 - 10:10)

### VIRTUAL PRESENTATIONS

### SPEAKER SESSION

10:10 - 10:50 Title: Clinical application of antibiotics in the surgical treatment of colorectal tumors  
**Ruiqi Gao**, The Fourth Military Medical University, Shaanxi, China.

### KEYNOTE SESSION

10:50 - 11:30 Title: Use of indocyanine green fluorescence imaging in the extrahepatic biliary tract surgery  
**Prof. Orestis Ioannidis**, Aristotle University of Thessaloniki, Thessaloniki, Greece

### SPEAKER SESSION

11:30 - 12:00 Title: Management of Patients with Covid-19: Proton Pump Inhibitors Versus Histamine Receptor Antagonists  
**Prof. HARINDER JASEJA**, Vellore EEG Center, Gwalior, India.

12:00 - 12:30 Title: Pharmaceutical residues in the products of animal origin and the risks of public health  
**Dr. Sirous Sadeghian Chaleshtori**, University of Tehran, Tehran, Iran.

12:30 - 13:00 Title: Assessment of the therapeutic efficacy of both Albendazole and Nitazoxanide Drugs loaded Chitosan Nanoparticles against Echinococcus granulosus cysts (In vivo studies)  
**Dr. Naglaa Fathi Abd El-Latif**, Medical Research Institute, Alexandria University, Egypt.

13:00 - 13:30 Immunomodulatory effects of selected Alpha, Beta-unsaturated carbonyl based compounds and their most potent curcumin analogue encapsulated polylactic acid-co-glycolic acid-polyethylene glycol (plga-peg) based nanoparticles  
**Dr. Laiba Arshad**, Forman Christian College University, Lahore, Pakistan.



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**TUESDAY**

**August 30, 2022**

## POSTER SESSION

13:30 - 13:50	Title: Effect of environmental enrichment in NTG induced animal model <b>Dr. Anson S Maroky</b> , Sree Dattha Institute of Pharmacy, Telangana, India.
13:50 - 14:10	Title: Rosemary extract-induced decrease in activity of proteasome and increase in autophagy in osteogenesis imperfecta skin fibroblasts <b>Ms. Joanna Sutkowska-Skolimowska</b> , Medical University of Bialystok, Bialystok, Poland.
14:10 - 14:30	Title: Female Sex Hormones and IL-12, IFN $\gamma$ in Pregnant and Aborted Females Infected with Toxoplasma gondii <b>Dr. Naglaa Fathi Abd El-Latif</b> , Medical Research Institute, Alexandria University, Egypt

## Closing Ceremony





## Dr. Yuki HAMADA

Yuki HAMADA<sup>1</sup>, Eichirō HIRANO<sup>2</sup>

<sup>1</sup> HAMADA Clinic for Gastroenterology and Hepatology 1-1, S3, W2, SAPPORO

<sup>2</sup> Japan Bio Products Co. Ltd. Kurume Research Center bldg. 2F, Hyakunenkōen, Kurume, Fukuoka, Japan

### ‘A farewell to Phlebotomy’ by Hecpudin inducer Laennec & Porcine and their application to the treatment of NASH complicating with Type2 DM

Human hepcidin made by hepatocytes controls extracellular iron by regulating its intestinal absorption, recycling by macrophages, and release from storage spaces. Recent studies indicate that hepcidin deficiency underlies most known forms of Hereditary Hemochromatosis (H.H).

**Case H.H:** 44years-old male patient who developed Type2 diabetes mellitus (T2DM) had elevated serum ferritin (SF) level (10,191ng/ml). Liver biopsy revealed remarkable iron deposition in hepatocytes and relatively advanced fibrosis (F3). Chromosomal analysis confirmed the presence of transferrin receptor type 2 (TfR2) mutations. Infusion with Laennec has been done for 84 months as the substitute for the repeated phlebotomy. At the end of the treatment, the serum ferritin level was decreased to 428.4ng/ml (significantly lower than the started level). HbA1c also improved with the same or lower dose of insulin (8.8→6.8%). Plural liver biopsies revealed remarkable improvements in the grade of both iron deposition and fibrosis (F3→F1) of the liver tissue.

The discovery of hepcidin and its role in iron metabolism could lead to novel therapies for H.H. The placenta-derived Laennec (parenteral) and Porcine (oral) which act as the ‘hepcidin inducer’ actually improved iron overload of H.H patient without utilizing sequential phlebotomy, which suggests the possibility of not only improving the prognosis of H.H (type 1,2,3 most common) but also ameliorating the complications such as T2DM, liver fibrosis (LC) and hypogonadism (ED).

Laennec and Porcine can completely replace the continuous venesection for H.H and may also improve other iron-overloading disorders such as NASH complicating with T2DM, which showed hyperferritinemia, insulin resistance and iron deposition in the hepatocytes.

**Keywords:** Hecpudin; Hereditary Hemochromatosis; Phlebotomy; Placenta-derived Laennec; Iron metabolism; NASH; Type2 DM; Hecpudin inducer; Human placenta extract

#### Biography

1975 Graduate from School of Medicine, Hokkaido University. 1975-1977 Medical trainee at Osaka Medical Center for Cancer and Cardiovascular Disease, Osaka, Japan. 1977-1989 Lecturer, Gastroenterology and Hepatology Department, Hokkaido University. 1988-1989, 1991 Research Fellow, Faculty of Life Science (Prof.F.L.Bygrave), Australian National University. 1989-1998 Manager, Gastroenterology section, National Nishi-Sapporo hospital. 1998-Present President, HAMADA Clinic for Hepatology and Gastroenterology.





### ***Dr. Narendra Pamidi***

**Dr. Narendra Pamidi**, *Teh Rashyidah Ismail, Dr. Christina Gertrude Yap, A/P Raeksh Naidu.*

*Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Jalan Lagoon Selatan, 47500 Bandar Sunway, Selangor Darul Ehsan, Malaysia .*

### **Environmental enrichment protocol for diabetes induced toxic effects in animal models**

**B**ackground: High fat and high sucrose (HFS) diet induces obesity and type 2 diabetes (T2D). Thus, effective therapeutic strategies are imperative. This study was conducted to investigate the protective effects of environmental enrichment (EE) and metformin against HFS diet-induced obesity and T2D related alterations in a rat model.

Methods: Rats were randomly divided into four groups: C group (standard diet); D group (HFS diet); DE group (HFS diet + EE); and DM group (HFS diet + metformin). At the end of the experiment, the effects of EE and metformin on anthropometric and metabolic analyses were estimated.

Results: The anthropometric parameters, fasting blood glucose (FBG) and C-peptide levels in DE and DM groups were lower than the D group. The lipid panel analysis in DE and DM groups revealed lower levels of triglyceride (TG), total cholesterol (TC) and a higher level of high-density lipoprotein cholesterol (HDL-C) than the D group. Interestingly, the redox balance ratio of the DE group was significantly higher than the D group.

Conclusions: Our results suggest that EE and metformin significantly protect against HFS diet-induced obesity and T2D-related alterations in rats.

**Keywords:** Environmental enrichment, diabetes, high fat diet, metformin

### **Biography**

Dr Narendra Pamidi specialized in human anatomy, diabetes, and neuroscience teaching and research. He currently works at Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia. He is currently focused on medical education (anatomy education & peer mentoring), diabetes & neuroscience research. Dr Narendra has been successful in obtaining both internal and external research funding, learning & Teaching grants. He has supervised a number of research projects (PhD, Masters & Honors), and his students have won first place in a number of competitions.





***Prof. Da Jung Kim***

*Metabolomics Core Facility/Department of Transdisciplinary Research and Collaboration/Biomedical Research Institute/Seoul National University Hospital/Daehak-ro/Jongno-gu/Seoul 03082/Korea.*

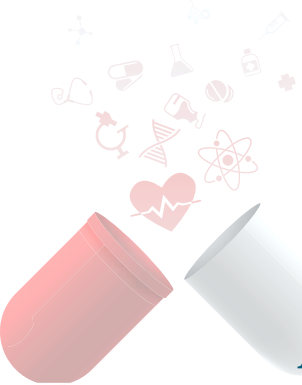
### **Ursodeoxycholic acid improves liver function via phenylalanine/tyrosine pathway and microbiome remodelling in patients with liver dysfunction**

Ursodeoxycholic acid (UDCA) is a metabolic by-product of intestinal bacteria, showing hepatoprotective effects. However, its underlying molecular mechanisms remain unclear. The purpose of this study was to elucidate the action mechanisms underlying the protective effects of UDCA and vitamin E against liver dysfunction using metabolomics and metagenomic analysis. In this study, we analysed blood and urine samples from patients with obesity and liver dysfunction. Nine patients were randomly assigned to receive UDCA (300mg twice daily), and 10 subjects received vitamin E (400 IU twice daily) for 8 weeks. UDCA significantly improved the liver function scores after 4 weeks of treatment and effectively reduced hepatic deoxycholic acid and serum microRNA-122 levels. To better understand its protective mechanism, a global metabolomics study was conducted, and we found that UDCA regulated uremic toxins (hippuric acid, p-cresol sulphate, and indole-derived metabolites), antioxidants (ascorbate sulphate and N-acetyl-L-cysteine), and the phenylalanine/tyrosine pathway. Furthermore, microbiome involvement, particularly of *Lactobacillus* and *Bifidobacterium*, was demonstrated through metagenomic analysis of bacteria-derived extracellular vesicles. Meanwhile, vitamin E treatment did not result in such alterations, except that it reduced uremic toxins and liver dysfunction. Our findings suggested that both treatments were effective in improving liver function, albeit via different mechanisms.

#### **Biography**

Research Professor, Metabolomics Core Facility, Department of Transdisciplinary Research and Collaboration, Biomedical Research Institute, Seoul National University Hospital, Korea (2020.10-Present). Research fellow, Seoul National University Medical Research Center, Korea (2020.02 – 2020.09). Researcher, Seoul National University Hospital, Korea (2015.09 – 2020.09)





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**Mr. Wooil Choi**

**Wooil Choi, Jiho Min**

*Graduate School of Semiconductor and Chemical Engineering, Jeonbuk National University, Jeonju, Republic of Korea*

**Bioengineered Yeast Vacuoles as Drug Delivery Carrier with Induced Proinflammatory Response after Daunorubicin Delivery**

Selective therapeutics is one of spotlighted field in pharmaceutical industry. This research is concerned for studying to improve efficiency of drug delivery by target selectivity, biocompatibility and immunological stimulation using drug delivery system based on yeast-derived vacuole. The budding yeast, *Saccharomyces cerevisiae*, is one of the best studied eukaryotic models. *S. cerevisiae* has prominent vacuole correspond to lysosome of mammalian cell. In this study, toll like receptor 2 (TLR2) specific binding peptide that overexpressed on HL-60 was expressed on vacuolar outer membrane. The vacuoles with targeting peptide showed enhanced efficacy to HL-60 cells and target specificity. This study demonstrates that yeast derived vacuoles with nano-sizing and targeting ability can be used potential bio-based drug delivery system for cancer therapy. Also, this vacuole system provides potential strategies and platform for disease selective treatment through simple manipulation of vacuole. After drug delivery, vacuole residue and damage associated molecular patterns (DAMPs) can induce the proinflammatory response of macrophages. In this study, we monitored the regulation of cancer proliferation by induced proinflammatory immune response. This research was supported by the Basic Science Research Program through the National Research Foundation of Korea (NRF), funded by the Ministry of Education (NRF-2021R1A2C2093580).

**Keywords:** Drug delivery, yeast vacuole, Daunorubicin, Acute Myeloid Leukemia

**Biography**

Wooil Choi majored in bio-chemical engineering at Jeonbuk National University. He have interested in research scope about application of nano-functional vesicle derived from cells, surface modification of intra-, extra- cellular vesicles, and rapid screening for disease biomarkers and target molecules for development of multi-purpose biomaterials.







**Mr. Jaewoong Lee**

**Jaewoong Lee<sup>1</sup> and Jiho Min<sup>1</sup>**

<sup>1</sup>Graduate School of Semiconductor and Chemical Engineering, Jeonbuk National University, 567 Baekje-daero, Deokjin-gu, Jeonju-si, Jeollabuk-do, 54896, Republic of Korea

### Identification of novel paraben-binding peptides using phage display

Parabens are alkyl esters of 4-hydroxybenzoic acid, which is derived from a family of synthetic esters of p-hydroxybenzoic acid. Among all the kinds of paraben, two parabens (methyl paraben, MP; and n-propyl paraben, PP) are the most generally used as preservatives in personal care products, such as cosmetics, pharmaceuticals, and food also, and are often presented together. However, these parabens have created wide discussion about their affects and safety in humans, as there have been scientific reports about their endocrine disrupting potential and their association with breast cancer and affects the water environment. This study utilized phage display to provide efficient and relatively inexpensive methods to identify peptides that bind to MP and PP, respectively, to remove in wastewater. At first, panning was performed, to discover MP and PP specific binding phages, including negative control, which could sort unspecific binding phages. Phage binding affinity tests were substituted by concentration reduction using antibody-conjugated magnetic beads, and paraben concentration was measured by HPLC.. Analysis showed that the MP concentration reduction was the highest in M4 phage, while the PP concentration reduction was the highest in P3 phage. In the concentration reduction experiment using the peptide, MP4 and PP3 showed the highest capture efficiency of MP and PP, respectively. In conclusion, the phage display technique shows applicability to the removal of parabens in water; furthermore, it also shows the possibility of the detection or removal of other chemicals. This work was supported by Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET) through Crop Viruses and Pests Response Industry Technology Development Program, funded by Ministry of Agriculture, Food and Rural Affairs (MAFRA) (321108-04).

**Keywords:** Methyl paraben; Peptide; Phage display; Propyl paraben.

### Biography

He received his bachelor's and master's degrees from the School of Chemical Engineering at Joenbuk National University, and he is in the process of a doctoral course at Molecular Bio-Technology Lab at Joenbuk National University under the guidance of Prof Jiho Min. We conducted studies targeting parabens and oral pathogens using phage display technology and organelles.





### Dr. Yogesh Vishnupant Ushir

Dr. Yogesh V. Ushir<sup>\*1</sup>, Kundan Tiwari<sup>2</sup> and Kiran A. Suryavanshi<sup>3</sup>

<sup>1</sup>Principal, SMBT College of Pharmacy and Institute of D. Pharmacy, SMBT Educational Campus, Nandi Hills, Nashik-422401, INDIA

<sup>2</sup>HOD, SMBT Institute of D. Pharmacy, SMBT Educational Campus, Nandi Hills, Nashik-422401, INDIA

<sup>3</sup>Lecturer, SMBT Institute of D. Pharmacy, SMBT Educational Campus, Nandi Hills, Nashik-422401, INDIA

#### Formulation and Evaluation of Lemongrass Hand Sanitizer

Lemongrass is very common plant in garden of Indian people, offently used with tea as a flavor. Lemongrass (Biological name- Cymbopogon citratus) is used for treating digestive tract spasms, stomachache, high blood pressure, convulsions, pain, vomiting, cough, achy joints (rheumatism), fever, the common cold, and exhaustion. It is also used to kill germs and as a mild astringent. Lemongrass (leaf, stem) was collected from institute Garden. The Phytochemical parameters for the lemongrass were studied with the aim of drawing the phytochemical standards for this species. The 5% steam-based extract of lemongrass used for preparation of hand sanitizer. 50g of fresh leaves of lemongrass extracted with 1-liter distilled water by pressure cooker till 2 whistles. After that cool it, and filter to get steam extract. As per the WHO guideline iso-propyl alcohol based hand sanitizer prepared and 5% lemongrass extract in water used instead of distilled water. The study includes phytochemical standardization of lemon grass as per Indian Pharmacopoeia, antimicrobial study. The Phytochemical Investigation revealed the presence of primary and secondary metabolites as amino acids, flavonoid, tannins, terpenoids, keto steroids, phenols and carbohydrates. The total Ash Value was found to be for lemongrass is 08.63 w/w. Antimicrobial study proves that as compare to 5% water extract of lemon grass hand sanitizer the 5% steam extract hand sanitizer of lemongrass shows enhanced anti-bacterial activity on Staphylococcus aureus, Bacillus subtallis, Escherichia Coli, Proteus vulgaris and Pseudomonas aeruginosa. The presence study includes preparation and evaluation of steam-based Lemon grass hand sanitizer first time.

**Keywords:** Cymbopogon citrates, kill germs, mild astringent, WHO guideline, anti-bacterialactivity.

#### Biography

Dr. Yogesh Ushir working as Principal at S.M.B.T College of Pharmacy and Institute of D. Pharmacy, Nandi-Hills, Nasik, MS; India. He has completed his M. Pharmacy in Pharmacognosy from the North Maharashtra University, Jalgaon and completed his Ph.D. in Pharmacy from Saurashtra University, Rajkot, Gujarat. He has published 41 research articles in reputed national and international journals. He also published 05 text books, on various subject of pharmacy field. He has presented many papers and participated as resource person in National and conferences. He has also presented paper at various international conferences held at Malaysia, Thailand, Indonesia, Singapore and Nepal. He is founder Editorial Member of International Journal of PharmaO2. He is reviewer of various international journals. He has 16 years of experience in pharmacy field. He has delivered lectures at various colleges for medical and paramedical Students. He is Life member of professional bodies like IPA, Indian Pharmacognosy Society, and APTI. He has received many grants from Government of Maharashtra for organizing National & International level Programmes. He has received travel grants from MSBTE, Mumbai for attending international conferences at Malaysia and Thailand.





*Miss. Su-Min Lee*

Su-Min Lee<sup>1</sup>, and Jiho Min<sup>1\*</sup>

<sup>1</sup> Graduate School of Semiconductor and Chemical Engineering, Jeonbuk National University,  
567 Baekje daero, deokjin-gu, Jeonju-si, 54896, Jeonbuk, South Korea.

### Immune-enhancing activity of Vacuole isolated from *S.cerevisiae* via TLR 2/4 mediated MAPK and NF- $\kappa$ B signaling pathways in Murine Macrophages

The vacuoles of the yeast *S. cerevisiae* are closely related to mammalian lysosomes and play a role in macromolecular degradation by the hydrolytic enzymes present inside. Also, the vacuoles regulate osmotic pressure and control cellular homeostasis. In previous results, vacuoles activate the immune response of macrophages by promoting the production of immune-mediated transporters NO, ROS, and pro-inflammatory cytokines. In this study, we investigated the receptors capable of recognizing vacuoles in RAW264.7 cells and the signaling pathways of their immune-enhancing effects. After treatment with TLR2/4 inhibitor, the expression of pro-inflammatory cytokines by vacuoles was significantly reduced, and inducible nitric oxide synthase (iNOS) protein was also significantly reduced. However, treatment with a TLR2 inhibitor did not reduce the production of IL-6, a pro-inflammatory cytokine. As a result of confirming the activation of TLR2/4 using western blot and Immunofluorescence (IF), TLR2/4 protein expression and fluorescence intensity increased depending on the concentration of vacuoles. In addition, as a result of confirming the expression of p38 MAPK/p65 NF- $\kappa$ B protein through Western blot, it was confirmed that the expression was upregulated in the vacuole-treated group. Thus, in RAW 264.7 cells, vacuoles increased immune mediators and phagocytosis, confirming their potential as immune enhancers, suggesting that this immune response activation is mediated through upregulation of TLR 2/4. This work was supported by Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry(IPET) through Crop Viruses and Pests Response Industry Technology Development Program, funded by Ministry of Agriculture, Food and Rural Affairs(MAFRA) (321108-04).

**Keywords:** Vacuole, Cytokine, Toll-like receptor, p38 MAPK, NF- $\kappa$ B

#### Biography

Su-Min Lee is currently attending the Doctor course at the Graduate School of Semiconductor and Chemical Engineering at Jeonbuk National University.





*Mr. Taehwan Kim*

Taehwan Kim<sup>1</sup>, and Jiho Min<sup>1</sup>

<sup>1</sup> Graduate School of Semiconductor and Chemical Engineering, Jeonbuk National University, 567 Baekje-daero, Deokjin-gu, Jeonju-si, Jeollabuk-do 54896, Republic of Korea

### Screening and Identification of VDBP-Complex-Specific Binding Peptide Sequence for Administration of Optical Vitamin D Concentration in Immunoregulatory

Vitamin D has been attracting attention as it relates to immunity enhancement. Although vitamin D is synthesized naturally through sunlight, it is easy to be deficient in modern people who are not exposed to sunlight frequently. Vitamin D detection is primarily accomplished by detecting the complex form in the blood. Vitamin D takes the form of a complex with Vitamin D Binding Protein (VDBP) rather than traveling alone in the blood. In this experiment, we tried to find a peptide sequence that can distinguish the complex from the binding protein using phage display. To select phages that selectively attach to target substances, biopanning was performed to classify phages specific to each target. And, 40 individual phages from each strain were analyzed their DNA sequences. Thus, the peptide sequence obtained from the specific binding phage was analyzed, and an affinity test was performed after confirming a prominent sequence among them. That sequence has more the binding affinity ability about 2.2 times to VDBP-Complex than the control. A protein reduction experiment was performed to confirm the binding ability of the sequence to the VDBP-Complex. As a result, by conjugating the magnetic bead and the peptide, it was confirmed that 69.72% of the VDBP-Complex was removed. This work was supported by Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry(IPET) through Crop Viruses and Pests Response Industry Technology Development Program, funded by Ministry of Agriculture, Food and Rural Affairs(MAFRA)(321108-04).

**Keywords:** Phage display, Vitamin D detection, Vitamin D, Vitamin D binding protein , Vitamin D binding protein complex

#### Biography

Taehwan Kim is currently a PhD student at the Jeonbuk National University. He received a bachelor's degree in chemical engineering and a master's degree in molecular biology from Jeonbuk National University. He is currently studying in molecular bio-technology laboratory. He is interestd in peptide and DNA screening that specifically binds to the target molecule using phage display.





***Mr. Gyeongchan Jeonand***

**Gyeongchan Jeonand , Jiho Min\***

*Graduate School of Semiconductor and Chemical Engineering, Jeonbuk National University, Jeonju, South Korea*

### **Skin pigmentation treatment of lysosomal fraction modified to overexpress glutathione peroxidase**

All eukaryotes have lysosomes that contain hydrolytic enzymes, such as protease, that degrade waste materials and cellular fragments. As a cellular organelle, lysosomes function as the digestive system of the cell, serving both to degrade material taken up from outside the cell and to digest obsolete components of the cell itself. In a previous study, melanin compounds were bleached using lysosome-related organelle extract (LOE) in which glutathione peroxidase (GPX) contributed decisively to melanin decolorization. In this study, *Saccharomyces cerevisiae* was engineered to overproduce GPX, which increases the melanin color reduction activity of LOE. In addition, the peroxidase activity of the recombinant yeast was measured for each compartment. In spite of the modification to overexpress the GPX protein, with the peroxidase activity of the lysosome fraction specifically higher, the overall peroxidase activity of the cells remained constant. The overexpression of GPX2 among the GPX present in *S. cerevisiae* increased both the melanin-decolorization activity and peroxidase activity of LOE. These results indicate that the peroxidase activity is related to the melanin decomposition and antioxidant enzymes such as GPX. In an artificial skin tissue test, the LOE extracted from the recombinant yeast was efficient in reducing the melanin. These results confirmed the enzyme's ability to penetrate corneous tissue, and they suggest the possibility of further development as a new whitening cosmetic. This work was supported by Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET) through Crop Viruses and Pests Response Industry Technology Development Program, funded by Ministry of Agriculture, Food and Rural Affairs (MAFRA) (321108-04)

**Keywords:** Melanin, Glutathione peroxidase (GPX), Lysosome, *Saccharomyces cerevisiae*, Antioxidant

#### **Biography**

He is studying on the application of useful cell organelles under the guidance of Prof. Jiho Min in the Molecular Biotechnology Lab. He has reported that lysosomal fraction improves skin health including whitening function, and has published several related papers. Currently, my goal is to develop a method that effectively regulates the amount of extracellular vesicles (EVs) secretion in various types of cells including yeast, and to apply EV to cosmetic or pharmaceutical field.



***Prof. Shin Aoki***

**Shin Aoki**, Kenta Yokoi, Kohei Yamaguchi, Azusa Kanbe, Mayuka Nii, Chandrasekar Balachadran, Masaki Kakihana,

*Tokyo University of Science, Faculty of Pharmaceutical Sciences, Research Institute for Science and Technology, and Research Institute for Biomedical Sciences, Noda, Japan*

### **Design and synthesis of hybrid compounds of cyclometalated iridium(III) complexes and triptycenes with basic peptides that induce paraptosis in cancer cells**

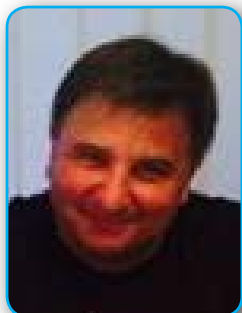
Programmed cell death (PCD) plays important roles in the formation of organs and tissues, and cell death such as apoptosis, necroptosis, and so on. It is important to develop new anticancer agents that induce not only apoptosis, which is very famous type of PCD but also other types of PCD for the effective cancer treatment. Our recent research interests include the design and synthesis of hybrid compounds of cyclometalated Ir(III) complexes such as Ir(tpy)<sub>3</sub> (tpy = 2-(4'-tolyl)pyridine) with biologically active peptides for the cancer treatment based on our finding of the post-complexation functionalization.<sup>1</sup> It was found that cell death is induced in Jurkat cells by the Ir(III) complex-peptide hybrids (IPHs) and triptycene-peptide hybrids (TPHs) containing basic (cationic at neutral pH) peptides such as GGKK(K)K-NH<sub>2</sub> sequences, which are referred to as IPH-AC and TPH-AC (AC: as amphiphilic peptide conjugate), respectively. The detailed mechanistic studies suggest that the IPH-ACs and TPH-ACs induce paraptotic cell death, which has been reported as non-apoptotic cells, by the membrane fusion or tethering between the endoplasmic reticulum (ER) and mitochondria, the direct transfer of Ca<sup>2+</sup> from the ER to mitochondria, the decrease in mitochondrial membrane potential, and vacuolization of intracellular organelles. These results will be discussed in this paper.

**Keywords:** programmed cell death, paraptosis, iridium complexes, triptycene, peptide hybrids, calcium.

**Biography**

Shin Aoki became an assistant professor at the University of Tokyo in Prof. Kenji Koga laboratory and received Ph.D in 1992. He worked with Professor C.-H. Wong as a postdoctoral fellow at the Scripps Research Institute, USA and returned to the University of Tokyo. He moved to Hiroshima University to work with Prof. Eiichi Kimura's group and was promoted to a professor at Tokyo University of Science in 2003. He is also the vice director of the Research Institute for Science and Technology, Tokyo University of Science. He is a recipient of the Pharmaceutical Society of Japan Award for Young Scientists (2002) and so on.





***Prof. Ivan Salamon***

*Department of Ecology, Faculty of Humanities and Natural Sciences, University of Presov, Presov, Slovak Republic*

### **Chamomile (*Matricaria recutita* L.) – Natural Substances and Their Curative Effects**

Chamomile, *Matricaria recutita* L. was apparently sacred to the Ancient Egyptians, according to Hippocrates who ‘dedicated it to the Sun because it cured agues’. By the seventeenth century, chamomile was well established in monastery and domestic gardens as a medicine and beauty herb – it had been taken to the New World by the Pilgrim Fathers.

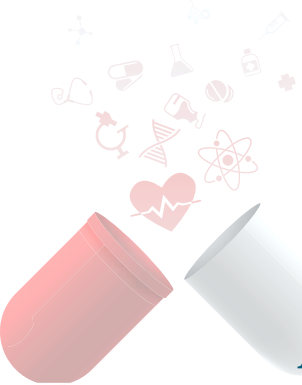
The essential oil is distilled from the freshly dried flowers (*FlosChamomillae*); the oil of chamomile is pastel dark bluish and has a very strong smell. Application fields include dermatology (Figure 1), stomatology, otolaryngology, internal medicine, in particular gastroenterology, pulmonology, pediatry, and radiotherapy.

The therapeutic effectiveness is in total due to the combined pharmacological and biochemical effects of several chamomile constituents, especially  $\alpha$ -bisabolol. Impulse for the totally new valuation of the drug production has become if the identification of four chief chemical types of chamomile different by the qualitative – quantitative composition of chemical compounds in the essential oil was carried out. Certain types of chamomile contain up to 50 %  $\alpha$ -bisabolol in the essential oil; however, in the majority of types the oxides are more abundant.

Gradually, the new chamomile variety “LIANKA” was bred at the University of Presov, Slovakia in last years (Salamon et al, 2016). The essential oils of plants were extracted by hydro-distillation and analyzed by gas (GC) and liquid (LC) chromatography. The variety is characterized by its high percentage of sesquiterpenes:  $\alpha$ -bisabolol [ $54 \pm 2$  %], chamazulene [ $18 \pm 2$  %], the low contents of  $\alpha$ -bisabololoxides A and B [ $< 3$  %] and essential oil content are from 0.65 to 0.85 %). The main characteristic constituents of chamomile flowers are flavone derivatives: apigenin-7-glucoside is contained  $0.33 \pm 0.01$  and the total quantity of apigenins  $0.48 \pm 0.02$  [% of chamomile dry flowers].

Chamomile plants are picked only in the stage of developed anthodia, using various types of harvesters (Figure 2). Sorting the chamomile biomass is performed by sorting machines. Drying is provided mostly on hot-air driers. The dry chamomile drug of the first quality is delivered directly to the processing enterprises. The remaining plant material and the waste are used to produce essential oil and extracts.





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## Images:



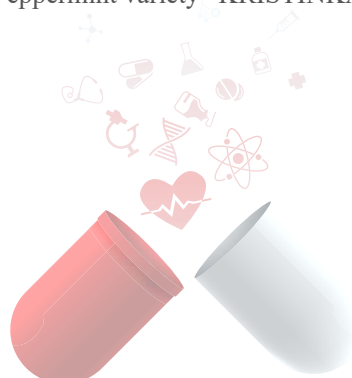
**Figure 1: Phytoterapeutical force of chamomile extracts (Shilcher, 2004).**



**Figure 2: Large-scale cultivation of Chamomile in Slovakia (Salamon, 2017).**

## Biography

Assoc. Prof. Ivan Salamon: An university teacher and scientist, is the managing investigator of several R & D projects of medicinal and aromatic plants. He is the principal author of the patent– the freeze-drying technology (lyophilization), as unique methods of anthocyanin isolation from medicinal plant small fruits, Chamomile variety “LIANKA” with the high content of  $\alpha$ -bisabolol and Peppermint variety “KRISTINKA” with the high content of menthol of essential oils.







**Xinyi Zhao**

Xinyi Zhao, Christine O'Connor, Furong Tian

Technological University Dublin, Dublin, Ireland

### Protocol for the Rapid Detection of Salmonella by using Antibody Functionalized Immuno-Magnetic Iron Oxide Nanoparticles

Rapid detection of pathogens by using functionalized nanoparticles coupled with antibodies provides advantages to detect bacterial pathogens in food and drinking water samples. The study was aimed to develop an immuno-analytical assay to detect Salmonella by using magnetic iron oxide nanoparticles (IONPs) conjugated with the mouse anti-salmonella enteritidis lipopolysaccharide antibody. The IONPs were synthesized by reducing the gold ion using sodium borohydride. The morphophysical analysis of the nanoparticles using the TEM technique revealed that the nanoparticles are spherical and exist in the size range of 10-15 nm. A Williamson-Hall plot analysis of the XRD peaks gave a crystallite size of 9.9 nm. The magnetization of IONPs was recorded as  $61 \text{ Am}^2\text{kg}^{-1}$  at 1 T by performing the vibrating-sample magnetometer analysis. Magnetic iron oxide nanoparticles were carbodiimide conjugated to mouse antibody (8209-5349) by using N-Hydroxysuccinimide (NHS) and 1-Ethyl-3-(3-dimethyl aminopropyl) carbodiimide (EDC) at room temperature. Size distribution analysis of the IONPs, EDC-NHS associated IONPs and carbodiimide antibody conjugated nanoparticles showed the gradual increase in the hydrodynamic diameter of IONPs after their conjugation with NHS, EDC, mouse antibodies, and finally with the bacterial pathogens. A magnet was used to sequester the Salmonella conjugated immuno-functionalized nanoparticles from water samples. Confocal microscopic images of Salmonella conjugated immuno-functionalized IONPs showed the association of immuno-nanoparticles with Salmonella. The findings of the current study confirm the potential of immuno-functionalized IONPs to separate and detect Salmonella successfully from contaminated samples.

**Keywords:** rapid detection; Salmonella; antibody, iron oxide nanoparticle.

#### Biography

Xinyi Zhao currently a postgraduate student in School of Food Science and Environmental health in Technological University Dublin. He received a Bachelor's degree in Materials, and has several years working experience in the industry. He has achieved high marks in laboratory sessions in molecular biology, including recombinant DNA cloning techniques, insertion of a foreign gene into an E. coli cell, and the use of PCR and gel electrophoresis. He is proficient in the use of spectroscopy and instruments including FTIR, microscopy and related techniques such as nano particle synthesis and characteristic.





## Ruiqi Gao

Ruiqi Gao, Xiaohua Li

Department of Digestive Surgery, Xi Jing Hospital, the Fourth Military Medical University, Xi'an, Shaanxi, China.

### Clinical application of antibiotics in the surgical treatment of colorectal tumors

In recent dozen years, the impact of the microbiome on human diseases such as cancer has gained increasing attention. Among all tumors, gastrointestinal malignancies are deeply influenced by gut bacteria due to their spatial proximity, and their relationship with the gut microbiome has been intensively studied. In colorectal tumor surgery, the impact of gut bacteria on patient outcome is quite evident. This effect can be divided into two parts, the short-term effect and the long-term effect. Based on these two parts, we designed two multicenter prospective studies with the aim of demonstrating that modulating the gut flora of patients with colorectal tumors by using antibiotics in such a way that they can change the prognosis of patients, improve the quality of patient survival, and prolong patient survival time. In this meeting, I would like to introduce these two clinical experiments and share our new ideas on the development of antibiotics in clinical application.

**Keywords:** microbiome, clinical , colorectal, tumor, antibiotics, protocol

### Biography

Gao Ruiqi, digestive surgeon of Xijing Hospital Affiliated to the Fourth Military Medical University, master candidate, published one SCI paper as the first author.





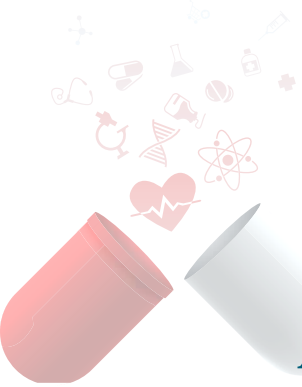
### ***Orestis Ioannidis***

*4th Department of Surgery, Medical School, Aristotle University of Thessaloniki, General Hospital "George Papanikolaou", Thessaloniki, Greece,*

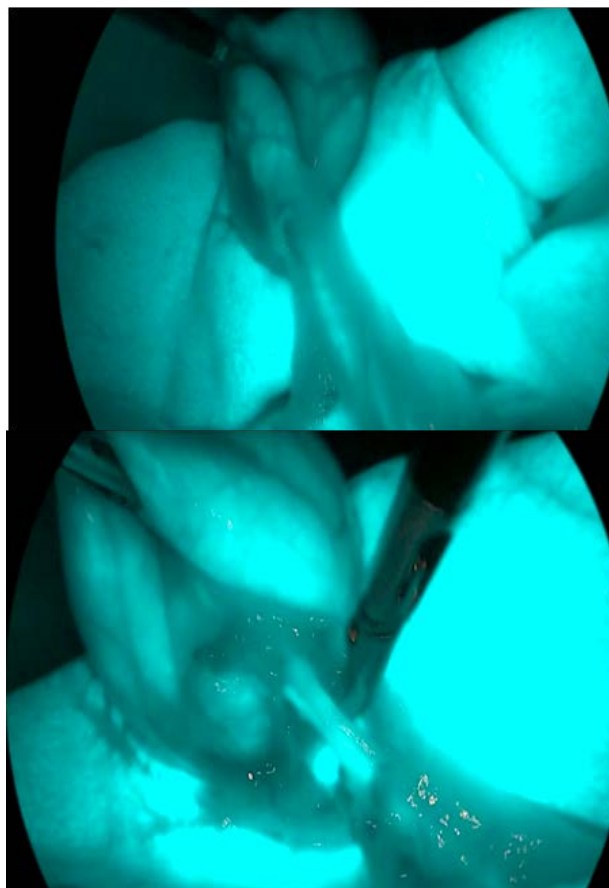
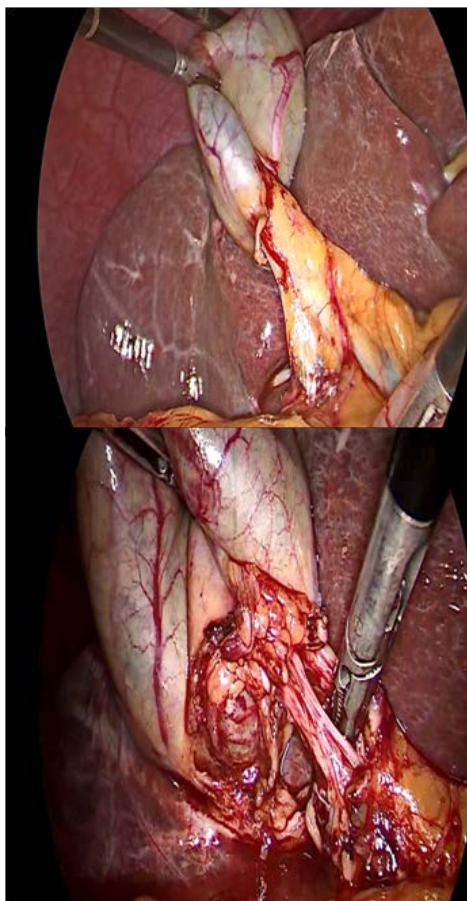
#### **Use of indocyanine green fluorescence imaging in the extrahepatic biliary tract surgery**

Cholelithiasis presents in approximately 20 % of the total population, ranging between 10% and 30 %. It presents one of the most common causes for non malignant surgical treatment. The cornerstone therapy is laparoscopic cholecystectomy, urgent or elective. Laparoscopic cholecystectomy is nowadays the gold standard surgical treatment method, however bile duct injury occurred to as high as 0.4-3% of all laparoscopic cholecystectomies. The percentage has decreased significantly to 0.26-0.7% because of increased surgical experience and advances in laparoscopic imaging the past decade which have brought to light new achievements and new methods for better intraoperative visualization such as HD and 3D imaging system. However, bile duct injury remains a significant issue and indocyanine green fluorescence imaging, mainly cholangiography but also angiography, can further enhance the safety of laparoscopic cholecystectomy as it allows the earlier recognition of the cystic and common bile duct, even in several times before dissecting the Callot triangle. Fluorescence cholangiography could be an ideal method in order to improve bile tree anatomy identification and enhance prevention of iatrogenic injuries during laparoscopic cholecystectomies and also it could be helpful in young surgeons training because it provides enhanced intraoperative safety, but however this method does not replace CVS. Finally, our ongoing current study results comparing intravenous to direct administration of ICG in the gallbladder will be presented.





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**What will audience learn from your presentation?**

- ICG fluorescence cholangiography can enhance the safety of laparoscopic cholecystectomy as it allows the earlier recognition of the cystic and common bile duct, even in several times before dissecting the Callot triangle
- The best timing and dosage of ICG administration in order to perform ICG cholangiography and angiography
- ICG fluoresce imaging doesn't replace the critical view of safety

**Biography**

Dr. Ioannidis studied medicine in the Aristotle University of Thessaloniki and graduated at 2005. He received his MSC in "Medical Research Methodology" in 2008 from Aristotle University of Thessaloniki and in "Surgery of Liver, Biliary Tree and Pancreas" from the Democritus University of Thrace in 2016. He received his PhD degree in 2014 from the Aristotle University of Thessaloniki for his thesis "The effect of combined administration of omega-3 and omega-6 fatty acids in ulcerative colitis. Experimental study in rats." He is a General Surgeon with special interest in laparoscopic surgery and surgical oncology and also in surgical infections, acute care surgery, nutrition and ERAS. He has received fellowships for EAES, ESSO, EPC, ESCP and ACS and has published more than 130 articles with more than 3000 citations and an H-index of 28.







**Prof. HARINDER JASEJA**

*Consultant, Vellore EEG Center, Gwalior, India*

### Management of Patients with Covid-19: Proton Pump Inhibitors Versus Histamine Receptor Antagonists

The seemingly unending Covid-19 still lacks a definitive and specific treatment against the corona virus; the management continues to remain largely symptomatic. In absence of standardized and specific treatment, the widely adopted current pharmacotherapy for Covid-19 almost invariably includes proton pump inhibitors (PPIs) in many countries, which in the author's opinion is not only strongly refutable and poorly justified, but also potentially harmful to the corona patients. This presentation not only discusses the adverse effects of PPIs in Covid-19 management but also presents evidence how PPIs can even be associated with enhancement and increased severity of Covid-19. In view of untoward effects due to administration of PPIs, the author justifies and recommends the replacement of PPIs with histamine receptor antagonists based on their direct and indirect control of Covid-19 and its severity along with their ability to improve prognostic and therapeutic outcome of the disease.

**Keywords:** Gut-Lung Axis; Gut Microbiota; Kidney Disease; SARS-Cov-2

#### Biography

Dr Jaseja has worked as a faculty in medical school 33 years. He has authored 100 papers and is member of several editorial boards. Dr Jaseja's main research interest has been in non-pharmacological therapy of epilepsy and has been ranked Second in Epilepsy Research in India. His current work has been on deep brain stimulation in epilepsy. In 2005, Jaseja initiated a debate on the epileptogenic potential of Meditation. Jaseja has also published new guidelines based on EEG for pharmacological treatment of patients with cerebral palsy. Recently, he has proposed an oxygen support system in patients with Covid-19.





***Dr. Sirous Sadeghian Chaleshtori***<sup>1,2</sup>

<sup>1</sup>Department of Internal Medicine, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

<sup>2</sup>Institute of Biomedical Research, University of Tehran, Tehran, Iran.

### **Pharmaceutical residues in the products of animal origin and the risks of public health**

The quality of the animal products is important for consumer health. Veterinary drugs that are used for different purposes in animals may be associated with the risks of drug residues in edible tissues. Nowadays, pharmaceutical residues are considered as a global problem and have been reported in many countries. Pharmaceutical residues will cause the various risks to public health. Therefore, it is necessary to prevent the entry of drug residues into the food chain. The responsibility to control and prevention residues is with the government, producers, veterinarians, academics and other stakeholders who should strive to provide healthy food.

The first step in this field is education, and the first indicator that veterinarians consider for this purpose is the time required for the drug withdrawal from the animal body. In some countries, the veterinarian has access to the database on avoiding drug residues in the animal products. If there is no information in this field, the treated animal should not be allowed to enter the food chain. After determining the probable timing of drug withdrawal, the accuracy of the prediction should be ensured through an appropriate rapid screening test. If drug residue is still present, more time should be allowed for drug removal until the rapid screening test is negative. If the test is not negative, the animal should not be allowed to enter the food chain.





## Laiba Arshad

Laiba Arshad <sup>1</sup>, Ibrahim Jantan<sup>2</sup>, Syed Nasir Abbas Bukhari <sup>3</sup>

<sup>1</sup> Department of Pharmacy, Forman Christian College University, Lahore, Pakistan.

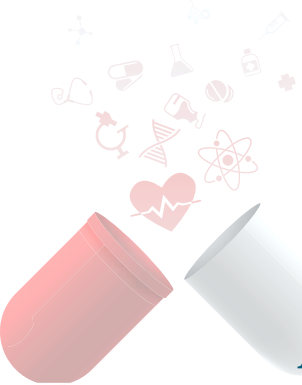
<sup>2</sup> School of Pharmacy, Faculty of Health and Medical Sciences, Taylor's University, Malaysia

<sup>3</sup> Department of Pharmaceutical Chemistry, College of Pharmacy, Al Jouf University, Saudi Arabia

### IMMUNOMODULATORY EFFECTS OF SELECTED ALPHA, BETA-UNSATURATED CARBONYL BASED COMPOUNDS AND THEIR MOST POTENT CURCUMIN ANALOGUE ENCAPSULATED POLYLACTIC ACID-CO-GLYCOLIC ACID-POLYETHYLENE GLYCOL (PLGA-PEG) BASED NANOPARTICLES

Compounds containing  $\alpha$ ,  $\beta$ -unsaturated carbonyl-based moieties such as curcumin and chalcones including their analogues and derivatives possess diverse pharmacological activities. The present study was aimed to enhance the immunomodulatory activity of curcumin and chalcones through structural modification and provision of a drug delivery system. A series of  $\alpha$ ,  $\beta$ -unsaturated carbonyl-based compounds (curcumin analogues and chalcone derivatives) and their pyrazoline derivatives were investigated for their modulatory effects on phagocytosis by human whole blood cells and isolated human polymorphonuclear neutrophils. Among all compounds tested, 3,5-bis[4-(diethoxymethyl)benzylidene]-1-methyl-piperidin-4-one (BBP) was the most potent in suppressing the sequential steps of phagocytosis. BBP was further investigated for its immunosuppressive effects on various cellular and humoral immune responses in Balb/c mice. Its effects on immune responses in the mice were determined by measuring phagocytosis, serum levels of ceruloplasmin and lysozyme, MPO plasma level, proliferation of T and B lymphocytes, T lymphocytes subsets and secretion of Th1 and Th2 cytokines and delayed type hypersensitivity reaction (DTHR). BBP significantly and dosedependently reduced the migration of neutrophils, phagocytic activity and serum levels of ceruloplasmin and lysozyme and suppressed lymphocyte proliferation. BBP encapsulated in polylactic-co-glycolic acid-b-polyethylene glycol (PLGA-b-PEG) nanoparticles was prepared through nanoprecipitation technique and characterized for its physicochemical properties. BBP was successfully encapsulated in PLGA-b-PEG polymer with high encapsulation efficiency while providing a controlled release. The BBP encapsulated PLGA-b-PEG nanoparticles and unencapsulated BBP were investigated against aforementioned specific and nonspecific innate and adaptive immune responses in male Balb/c mice. The in vivo responses produced by BBP encapsulated nanoparticles when compared to unencapsulated BBP, showed an enhanced and significant suppressive effect on the specific and non-specific immune responses mediated by various cellular and humoral parameters. In conclusion, these findings suggest that the novel curcumin analogue, BBP possessed strong immunosuppressive effects and its potency was raised by providing the carrier system.



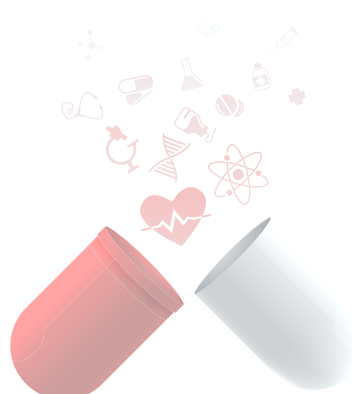


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**Keywords:** Immunosuppressive, Immunomodulatory, Unsaturated compounds, Curcumin Analogs Innate immunity, Adaptive immunity

**Biography**

Dr. Laiba Arshad is currently working as Assistant Professor Pharmacology, Department of Pharmacy. She completed her PhD from National University of Malaysia. She has been participating in various national and international conferences and research seminars as well as served as International Conference organizer in her professional career. Also serving as Editorial board member and Reviewer of several Peer reviewed journals; published several research/review papers in peer-reviewed indexed journals. She is actively involved in natural product research and in the field of immunology.







***Dr. Naglaa Abd El-Latif***

*Mona El-sayad<sup>a</sup>, Dakam Eisay<sup>a</sup>, Wessam El-Hadidy<sup>b</sup>, Naglaa Abd El-Latif<sup>a</sup>*

<sup>a</sup>Department of Parasitology, Medical Research Institute, Alexandria University, Egypt

<sup>b</sup>Department of Pharmacology, Medical Research Institute, Alexandria University, Egypt

**Assessment of the therapeutic efficacy of both Albendazole and Nitazoxanide Drugs loaded Chitosan Nanoparticles against Echinococcus granulosus cysts (In vivo studies)**

Hydatidosis is caused by larval stage of the tapeworm *Echinococcus granulosus* and *E. multilocularis* which are the causative agents of life-threatening cystic and alveolar echinococcoses. The major treatment option for CE is radical surgery accompanied by peri-operative chemical treatments. Albendazole (ABZ) is the best drug licensed for human use, but has poor solubility, low absorption, and consequently erratic bioavailability. Nitazoxanide (NTZ) is known as a broad-spectrum drug against various intestinal parasites and enteric bacteria. The current work aimed to evaluate the characterization and therapeutic outcomes of Chitosan Nanoparticles (Cs NPs) and, ABZ loaded CsNPs and Nitazoxanide loaded CsNPs on mice experimentally infected with *E. granulosus*.

To study the drug efficacy, 95 Swiss Albino mice were inoculated intra-peritoneally with approximately 1000 protoscoleces harvested from Hydatid cysts collected from slaughter camels and divided into experimental and control groups. Drugs were prepared and administered orally daily to the experimental subgroups' mice for 14 days.

Sixteen weeks after infection, all mice were sacrificed by cervical dislocation and necropsy was carried out immediately. Drug efficiency was assessed by mice survival time, clinical behavior, mortality rate, bodyweight gain, parasitological studies, the ultra-structure by SEM and histopathological studies. The result revealed that treatment of experimentally CE infected mice with Cs NPs, ABZ alone, NTZ alone, ABZ/Cs NPs and NTZ/Cs NPs were effective against hydatidosis. ABZ/Cs NPs had higher anti-cyst activity and was more likely to result in cure or improvement relative to ABZ alone and NTZ alone or NTZ/ CSNPs. Moreover, ABZ/Cs NPs showed a tendency to increase survival time and decreased mortality rate of mice making the use of ABZ /CS NPs a potential material for treatment of human Hydatidosis.

**Keywords:** Cystic Echinococcosis; Chitosan; Albendazole; Nitazoxanid; Drugs Loaded Chitosan, tSwiss Albino -mice.

**Biography**

Naglaa Abd El-Latif have Doctorate degree in Tropical Medicine, Faculty of Medicine. Alexandria University 2015. I have attended many local and international conferences. She had presented a case on "Case study of colonic polyposis" and a talk on "detection of intestinal protozoa in IBS patients" during the Emirates Gastroenterology and hepatology conference, November 2017. She have several publications with special interest on infectious diseases.



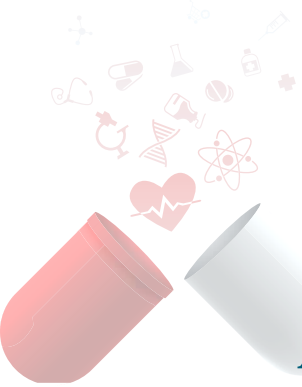
**Dr. Anson S Maroky****Anson S Maroky<sup>1,2</sup>, and V Parthasarathy<sup>2</sup>,**<sup>1</sup>Sree Dattha Institute of Pharmacy, Sheriguda, Telangana-501510, India<sup>2</sup>Department of Pharmacy, Annamalai University, Tamilnadu-608001, India**Effect of environmental enrichment in NTG induced animal model**

Migraine is a unilateral throbbing headache associated with unknown etiology. To our knowledge, the present study is the first of its kind to explore the neurobehavioral and molecular effects of environmental enriched (EE) in treating nitroglycerin-induced (NTG, 10 mg/kg) migrainous male Wistar rats with and without the antimigraine drug, BIBN4096, a calcitonin gene-related peptide (CGRP) antagonist. After NTG induction, pain was measured by the hot plate method, and neurobehavioral characteristics were improved in open field, elevated plus maze (EPM), social interaction task, and forced swim tests. The expression of biomarkers like calcitonin gene-related peptide (CGRP), tumor necrosis factor (TNF) alpha, corticosterone, interleukin 6 (IL-6), and Substance P (SP) was significantly reduced ( $p < 0.01$ ) in isolated brain regions such as brain stem, prefrontal cortex, hippocampus and trigeminal ganglion using the competitive enzyme-linked immunosorbent assay (ELISA) kit. Histopathological changes of the brain observed by Cresyl violet (Nissl body) staining confirmed a decrease in the damage of the neuronal cells in EE+BIBN4096 when compared with the NTG-induced group. The expression levels of proteins like NeuN, c-Fos, Nf-kB p65, and CGRP were quantified in isolated brain regions such as brain stem, cerebral cortex, and trigeminal ganglion using western blot analysis. All the results were statistically significant in EE alone and in EE with the drug ( $p < 0.01$ ). These results suggest that environmental enriched condition was the good adjuvant therapy for migraine.

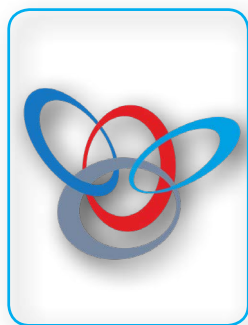
**Keywords:** Migraine, NTG, CGRP, BIBN4096, Social interaction task, Open field**Biography**

Dr. Anson S Maroky Professor at Sree Dutta College of Pharmacy, Hyderabad. His area of interests are on the pharmacological studies on antimigraine drugs, nano-conjugated drugs, antimigraine activity of medicinal plants. He pursued doctoral studies with UGC-BSR fellowship under the guidance of Dr. V. Parthasarathy M. Pharm., Ph.D. (University OF Sheffield, U.K) in the Department of Pharmacy, Faculty of Engineering & Technology, Annamalai University, Tamil Nādu, India. He did his B. Pharm from JKK Nataraja College (2005) and M. Pharm from Annamalai University (2008).





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***Ms. Joanna Sutkowska-Skolimowska***

**Joanna Sutkowska-Skolimowska**, , Justyna Brańska-Januszczyńska, Halina Ostrowska,  
Jakub W. Strawa, Anna Galicka

*Medical University of Białystok, Faculty of Pharmacy with the Division of Laboratory Medicine, Białystok, Poland*

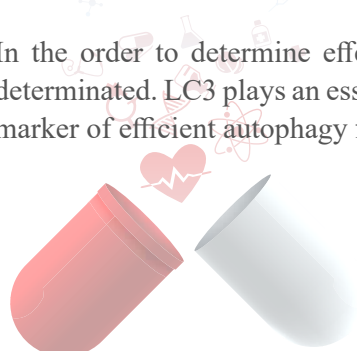
**Rosemary extract-induced decrease in activity of proteasome and increase in autophagy in osteogenesis imperfecta skin fibroblasts**

Osteogenesis imperfecta (OI) is a connective tissue disease characterized by low bone mass accompanied by bone fragility, skeletal deformities, blue sclerae, muscle weakness, growth deficiency, dentinogenesis imperfecta, hearing impairment and skin fragility. Mutations that cause OI are mainly glycine substitutions in the collagen genes COL1A1 and COL1A2, which encode type I collagen. They result in intracellular accumulation of mutant collagen and consequently cellular stress. If conformation of mutated collagen is not improved by unfolded protein response, it is destined for degradation by autophagy or endoplasmic-reticulum-associated protein degradation (ERAD). So far, bisphosphonates have been used in therapy, as a synthetic parathyroid hormone and growth hormone. A number of experimental therapies are being conducted, however, they have resulted in low efficacy and high cytotoxicity. Currently, therapies targeting cellular stress caused by the accumulation of mutant collagen intracellularly are being sought. Rosemary extract (RE) has many valuable biological properties (antioxidant, anti-inflammatory, antimicrobial, antidiabetic, anticancer), which are widely used in the prevention and treatment of many diseases.

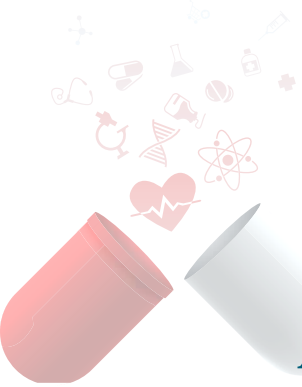
The aim of this study was to evaluate the effect of rosemary extract on activity of proteasome and autophagy in skin fibroblasts of patients with osteogenesis imperfecta.

The study was performed on skin fibroblasts of patients with lethal OI type II and severe type III and age-matched normal cells. Cells were treated with rosemary extract at concentrations of 50 and 100 µg/mL. Polyubiquitination of type I procollagen in OI cells was performed using Western blot and colorimetric detection. Proteasome activities were detected using fluorogenic peptide-AMC substrates. Expression of proteins responsible for collagen degradation by autophagy was determined by Western blot.

In the order to determine effect of RE on activity of autophagy process, LC3-II, its ratio to LC3-I and p62 were determined. LC3 plays an essential role in the formation and maturation of the autophagosome, and p62 is an important marker of efficient autophagy flux.







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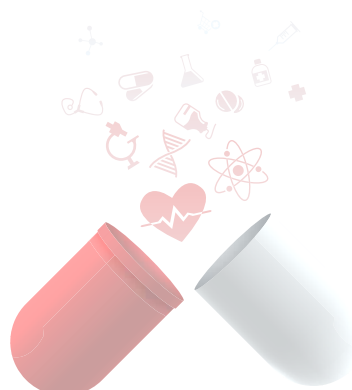
An increase in the LC3-II/LC3-I ratio was found in OI untreated cells, while the p62 level remained unchanged in OI III or increased in OI II cells. OI cells showed increased autophagic activity after RE treatment, there was an increase in the conversion of LC3-I to LC3-II along with an acceleration of p62 degradation. Untreated OI cells showed a decrease in T-L (trypsin-like), C-L (caspase-like) activities and no change in ChT-L (chymotrypsin-like) activity, while in the presence of RE all activities were reduced compared to untreated cells. Immunofluorescence microscopy showed an increase in colocalization of type I collagen in RE-treated OI cells with both an autophagosome marker (LC3-II) and a lysosome marker (LAMP2A).

The results indicate RE-induced degradation of mutant type I collagen with involvement of autophagy. It is possible that one of the mechanisms of autophagy induction is inhibition of proteasome activity, but further studies are required to confirm this assumption.

**Keywords:** osteogenesis imperfecta, rosemary extract, activity of proteasome, autophagy

#### **Biography**

Joanna Sutkowska-Skolimowska graduated in 2019 with a Master's degree in Cosmetology at the Medical University of Bialystok. In 2019 started International Doctoral Studies in Medical Sciences and Pharmaceutical Sciences at the Medical University of Bialystok. She participated in numerous courses and trainings to deepen the knowledge of the research conducted for the doctorate, as well as numerous cosmetology trainings.







**Dr. Naglaa Abd El-Latif**

Mona El-sayad <sup>a</sup>, Shehab Mutlak <sup>a</sup>, Mona Eldeeb <sup>b</sup>, Hala Shehata <sup>a</sup>,  
Naglaa Abd El-Latif <sup>a</sup>.

<sup>a</sup>Department of Parasitology, Medical Research Institute, Alexandria University, Egypt

<sup>b</sup>Department of Chemical Pathology, Medical Research Institute, Alexandria University, Egypt

**Female Sex Hormones and IL-12, IFN $\gamma$  in Pregnant and Aborted Females Infected with Toxoplasma gondii**

Toxoplasma gondii is an obligate intracellular coccidian parasite that affects human and other warm-blooded animals. In pregnancy, toxoplasmosis has variable outcomes: miscarriage, stillbirth, or congenital defects. Estrogen and progesterone are major female sex hormones; their effect on immune system can be profound during pregnancy especially in response to parasitic infection. Cytokines such as gamma interferon and (IL-12) cause abortion in pregnant mice. The present work aimed to study the relation of female sex hormones (Estrogen and Progesterone) and some inflammatory markers (IL12 and IFN- $\gamma$ ) with the Toxoplasma gondii among aborted and pregnant women. The study included 150 women divided into three groups: Group 1: included 50 pregnant women free from any parasitic infection and toxoplasmosis. Group 2: 50 pregnant women with positive toxoplasmosis. Group 3: 50 aborted women with positive toxoplasmosis. Serum sample of each participant was used for qualitative assessment of six parameters using ELISA: anti-toxoplasma specific immunoglobulin (IgM, IgG), Estrogen, Progesterone IL-12 and IFN- $\gamma$ . IgM positive was found in 50% of Gp3, IgG was high (72%) among Gp2. No significant differences were observed between Gp1 and Gp2 regarding Estrogen and progesterone levels. Estrogen level in Gp3 was less by three times than the levels in Gp2 and Gp1. While progesterone level was approximately equal in the three groups with no statistically significance difference. Concerning inflammatory markers, IFN- $\gamma$  showed statistically significant higher levels in Gp3 than Gp2. IL-12 was significantly higher in Gp3 than Gp1. There is a need to increase awareness among physicians regarding the importance of Estrogen and progesterone that may act as an immune regulator through their effect on inflammatory markers with protective effect against abortion due to Toxoplasma infection.

**Keywords:** Toxoplasma gondii, Estrogen, Progesterone, IL12, IFN- $\gamma$ , Aborted.

**Biography**

She have Doctorate degree in Tropical Medicine, Faculty of Medicine. Alexandria University 2015. She have attended many local and international conferences. She had presented a case on “Case study of colonic polyposis” and a talk on “detection of intestinal protozoa in IBS patients” during the Emirates Gastroenterology and hepatology conference, November 2017. She have several publications with special interest on infectious diseases.







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## International Collaborations



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