

**THIRTEEN YEARS GRADUATE PROGRAM
MEDICINAL CHEMISTRY**

**UNIVERSITY OF PATRAS
DEPARTMENTS OF CHEMISTRY AND PHARMACY**

*12th CONFERENCE
MEDICINAL CHEMISTRY*

**MEDICINAL CHEMISTRY:
Drug Discovery and Design**

**April 12-15, 2011
Conference and Cultural Center
University of Patras, Patras, Hellas**

Letter from Guest Editor

Welcome to the Medicinal Chemistry Graduate Program from
Basic to Applied Research

Euromaster Labeled Program (ECTN Association)

The Graduate Program *Medicinal Chemistry Drug Discovery and Design* of the University of Patras has completed its 14th year of operation. The program is a joint collaboration of the two Departments, Chemistry and Pharmacy, with the participation of the Departments of Medicine and Biology. Program has been successful so far with outstanding research and academic activities in the field of Medicinal Chemistry, attracting the interest of world leading scientists for participation and research collaboration. Main research interests of Program are focused on the Organic and Peptide Synthesis of Biomolecules, Rational Design with Aided Computer and Modeling Methods, Biological Evaluation *in vivo* and *in vitro*, Molecular Biology, Molecular Medicine, Toxicology, Biochemical Analysis, Pharmacognocny, Pharmacokinetics, Research Methods. The program has organized, since 2000, twelve Medicinal Chemistry Conferences with International Participation. The Program honors each year a distinguished scientist for important contribution to Biomedical Research and Science.

Over two hundred Masters and PhD students have graduated from the Program since 2000 which offered in particular 175 titles for the Master and 25 titles for the PhD degree, all of the graduates with successful careers in the Academia, Public or Industrial Sector. Program provides highly trained students to the benefit of the European Economy and Society. Program is giving emphasis to the research which is carried out during the last two semesters after a courses semester. Innovative Products and methods from the graduate students are published annually in high stand Journals. Patent applications with lead drugs and methods in Cancer, Hypertension, Multiple Sclerosis and other diseases have been also submitted to local and National Patent Agencies.

Graduate Research is the Key for Progress and Development in European and Worldwide dimension. This program is among the top in Greece and Europe for Academic results and achievements and an example in the country in relating basic with applied research.

The Guest Editor, on behalf of the Postgraduate Program Committee, wishes to express his deep appreciation to all contributors in this book. We also thank the Editorial Board of *Review of Clinical Pharmacology and Pharmacokinetics* in particular Journal Editors Prof. S. T. Plessas and Dr C. T. Plessas for invitation and for providing the suitable and high-standard forum through which important findings of this research will become available to the scientific community.

The Guest Editor

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Medicinal Chemistry: Drug Discovery and Design

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Forewords by Distinguished Scientists

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Nobel Prize in Physiology or Medicine, 1977

It was my honor and pleasure last year in participate to 11th annual Medicinal Chemistry Conference in Patras and present the story of the hypothalamic luteinizing hormone releasing hormone (LHRH) also know as GnRH (gonadotropin releasing hormone). LHRH is the main link between the brain, the pituitary and the gonadal (re-productive) functions. The isolation and structural determination of LHRH, synthesis of LHRH and its analogs, the development of depot preparations and the first basic studies on prostate cancer with agonist LHRH were all carried out in my laboratory between 1970 and 1981. Later I participated in the first clinical study with LHRH agonists in men with prostate cancer. The analogs of LHRH have many clinical applications in Endocrinology, Gynecology, Urology, Pediatrics and Oncology.

An interesting international collaboration on LHRH analogs was started with the group of Prof, John Matsoukas. In connection with this, I want again to stress the importance not only of collaboration, between various disciplines like

Chemistry, Biology, Medicine, and Pharmacology for progress in research but also of international cooperation in science and Medicine. During many past years we have been able to witness the significant collaboration between my laboratory and academic institutions in various countries including Greece, the land Alcmaeon, Hippocrates and Aristotle. Much valuable basic and clinical work was carried out and subsequently published in top journals.

This year, the program committee has organized another conference in medicinal chemistry at the University of Patras. Dr James D. Watson, the winner of the 1962 Nobel Price in Physiology or Medicine, was invited as the guest of honor and plenary speaker for this 12th Medicinal Chemistry Conference. I want to congratulate the program committee for following in the splendid tradition of previous conferences. I also congratulate the students who will be presenting their research achievements. I applaud to the international collaboration for the progress of science and humanity.



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I am very pleased that the Program of Post-graduate Studies in Medicinal Chemistry of the University of Patras has received this academic year the Euromaster label of excellence by the E.U. This is a great achievement of major significance which is awarded only after an extensive scientific review. This award reflects the excellence of Medicinal Chemistry Program and the recognition and respect that the Program receives by the international scientific community.

The Euromaster label will further enhance research collaboration and other scientific interactions between the University of Patras and the universities in the E.U. and other parts of the world. I note that this is the first graduate program in Greece to receive such a distinction.

I would like to congratulate, the faculty members of the program and the University of Patras for initiating and maintaining such a vibrant and productive graduate program. Also, I would like to

congratulate the over 200 Ph.D and Masters Students who have graduated from the Program over the last 11 years. It is indeed remarkable the work that has been accomplished. The impact of this program is very extensive both for the continuing development of biomedical research in Greece and for providing highly trained scientists for the further development of the Greek economy. Many of the graduates of the program have continued/are continuing their studies or are pursuing research careers in Greece, other European countries or in the U.S. As a graduate myself from the Department of Chemistry of the University of Patras more than thirty five years ago, I am delighted for this great success. Also, I am very pleased that I have been associated with the

Program as a member of the Advisory Committee from the time it was founded.

The Graduate Program in Medical Chemistry in its 12th year has been developed to an outstanding Program. A major strength of this Program is its truly interdisciplinary nature and extends across Chemistry, Pharmacology, Biology and Medicine. This type of interdisciplinary nature is very timely and likely to be very fruitful. They have substantially increased our understanding of the molecular and cellular basis of human disease and this permits the development of new molecules and cellular approaches for diagnosis and treatment of human disease.

With all best wishes for continuing success.



The Dream for Post-graduate Education

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Η σημερινή εικόνα των Πανεπιστημίων της χώρας μας θα ήταν τελείως διαφορετική, αν υπήρχαν πολλά Μεταπτυχιακά Προγράμματα, όπως αυτό της Ιατρικής Χημείας που λειτουργεί με το ίδιο ενθουσιασμό διδασκόντων και διδασκομένων τα τελευταία 10 χρόνια.

Πιστεύω ότι για να αλλάξει η ζοφερή εικόνα που παρουσιάζουν τα Ελληνικά Πανεπιστήμια είναι απαραίτητο οι εμπνευσμένοι Πανεπιστημιακοί δάσκαλοι, ιδιαίτερα αυτοί που έχουν παραστάσεις και διεθνή αναγνώριση, να συμμετέχουν στη προσπάθεια για σοβαρή μεταπτυχιακή εκπαίδευση και στη δημιουργία νησίδων Επιστημονικής Αριστείας.

Ο άλλος παράγοντας που θα βοηθούσε καθοριστικά στη πραγματοποίηση αυτού του στόχου είναι η γεναιόδωρη και συνεχής χρηματοδότηση της μεταπτυχιακής έρευνας. Αυτό είναι απαραίτητο για την ανάπτυξη σύγχρονης ερευνητικής υποδομής και αύξηση του ερευνητικού δυναμικού της χώρας.

Είναι χρέος της πολιτείας και των ανθρώπων του πνεύματος προς τη νέα γενιά να ανοίξουν σε αυτή το δρόμο της επιστήμης. Η γενιά αυτή δικαιολογημένα αγανακτεί για την αβεβαιότητα της επαγγελματικής τους αποκατάσταση στην πρω-

τοφανή οικονομική κρίση και την κρίση αξιών σε όλα τα επίπεδα.

Ο δρόμος της επιστήμης πρέπει και μπορεί να προταθεί σαν καινούργιο μοντέλο ζωής, επειδή η επιστήμη συνδέεται ενδογενώς με την αξιοπρέπεια, την ανιδιοτέλεια, την ταπεινοφροσύνη και την αναζήτηση της αλήθειας.

Επιπλέον το Πανεπιστήμιο δεν έχει μόνο υποχρέωση να εκπαιδεύει ικανούς επιστήμονες και ώριμους πολίτες με αξίες και ιδανικά, αλλά και να συμβάλει στην ανάπτυξη και στην ευημερία της κοινωνίας. Η συνεισφορά των Πανεπιστημίων στην ανάπτυξη καινοτόμων προϊόντων και υπηρεσιών πληροφορικής, τηλεπικοινωνιών, Βιοϊατρικής κ.λπ. είναι γνωστή. Είναι βέβαιο ότι η υπέροχη κληρονομιά της Ελλάδος, το ταλέντο και η εργατικότητα των νέων ανθρώπων, όταν τους δοθούν τα κίνητρα και οι ευκαιρίες, θα συνεισφέρουν στην πρόοδο της οικονομίας και στην απομόνωση της βίας και της καταστροφής.

Ο Οικονομικός Δυναμισμός, η Παραγωγικότητα, η Ποιότητα Μόρφωσης και Αισθητικής, η Ποιότητα των ανθρωπίνων σχέσεων θα εξασφαλίσουν την καλύτερη ποιότητα ζωής και θα συμβάλλει στο Διεθνές Κύρος, την Ασφάλεια και την Αξιοπρέπεια της Χώρας.