



European network of excellence

MUGEN Newsletter

2nd Issue, July 2008

MUGEN: Integrated Functional Genomics in Mutant Mouse Models as Tools to Investigate the Complexity of Human Immunological Disease



3rd ENII-MUGEN Summer School review

The 3rd ENII-MUGEN Summer School in advanced Immunology took place from May 3-10, 2008 once again in Capo Caccia, Sardinia. The programme was comprised of lectures and tutorial sessions from 17 internationally recognised experts in various fields, and a keynote lecture by Prof. Max Cooper. Participants received, in advance, a recommended reading list of manuscripts selected by the faculty in order to prepare for the lectures and tutorial sessions. Students actively participated in 4 lively evening poster sessions and 30 students were selected to give brief oral presentations during the scientific sessions.

142 students from Europe and beyond made up the class of the 3rd Summer School. One MUGEN Fellowship was offered to each MUGEN research partner, which covered the registration and accommodation fee plus a travel stipend. 18 MUGEN fellowships were allocated. The participants were evenly divided between 1st, 2nd, and 3rd year PhD students and 10% of the class was from the Post Doctoral level.

The feedback from the participants was overwhelmingly positive and the reputation of the School continues to grow and attract a very high quality of applicants. More information can be found at www.enii.org.

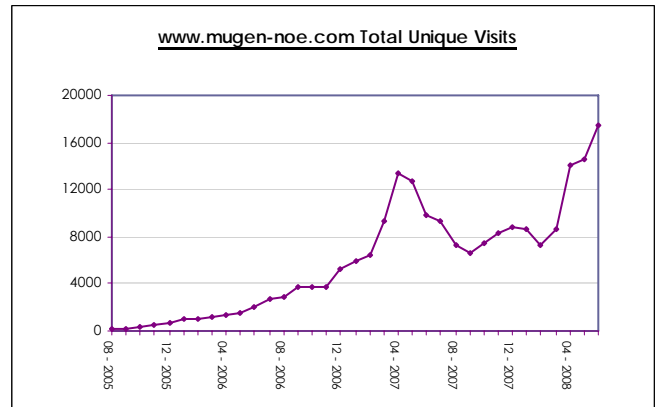
MUGEN partners join efforts to fight Crohn's disease

Four MUGEN participants - G. Kollias (FLEMING), D. Kontoyiannis (FLEMING), B. Malissen (CNRS) and W. Mueller (HZI)– used a unique animal model for human Crohn's disease and identified key molecules essential for disease pathogenesis. Crohn's disease is a chronic inflammatory disorder characterised by the persistent recruitment of immune cells into the gut, a process controlled by an elaborate system of adhesion molecules, chemokines and their receptors. The scientists have identified one of these molecules, $\beta 7$ integrin, as critical for lymphocyte migration into the small intestine and the development of intestinal inflammation, providing a promising target for novel therapeutic approaches against Crohn's disease.

Source article: Apostolaki et al. Role of beta7 integrin and the chemokine/chemokine receptor pair CCL25/CCR9 in modeled TNF-dependent Crohn's disease. *Gastroenterology*. 2008 Jun;134(7):2025-35.

MUGEN Review Meeting Announcement

The 5th MUGEN Annual Review Meeting will take place in Athens, on **January 26-28, 2009**. In this meeting, we will discuss results and activities of the past year and will review the 5th Joint Program of Activities for MUGEN's final year. We will also discuss the future of the accomplished MUGEN infrastructures and options for their further development and exploitation. For more information, please contact mugen@fleming.gr



MUGEN's portal is breaking the records

MUGEN's website (www.mugen-noe.org) has broken three consecutive records during the last three months. More than 17 thousand unique hits were recorded in June (an average of 580 unique visits per day!), the highest number of visits since the website's release in 2005. The number of unique visits has doubled in the last six months, underscoring the highly successful dissemination efforts of the Consortium.

Highlighted MUGEN papers: The inflammasome in the spotlight

MUGEN partner Dr. Jurg Tschopp and his group at the University of Lausanne, Switzerland have published two papers dissecting the function of the inflammasome, a multiprotein complex that processes proinflammatory cytokines (such as IL1). In the first paper, published in Nature on March 6th, 2008, the authors show that the inflammasome recognises bacterial, viral and mammalian (host) DNA and triggers an innate immune response in response to dangerous cytoplasmic DNA, in addition to microbial components or other "danger signals". In the second paper published in Science on May 2nd, 2008, the authors use a mouse model for asbestos inhalation to show that the inflammasome also activates an innate immune response after sensing asbestos and silica (two major airborne pollutants). These findings implicate the inflammasome in particular matter-related diseases and support its role as a major proinflammatory "danger" receptor.

Dostert et al. Innate immune activation through Nalp3 inflammasome sensing of asbestos and silica. *Science*. 2008 May 2;320(5876):674-7.
Muruve et al. The inflammasome recognizes cytosolic microbial and host DNA and triggers an innate immune response. *Nature*. 2008 Mar 6;452(7183):103-7.



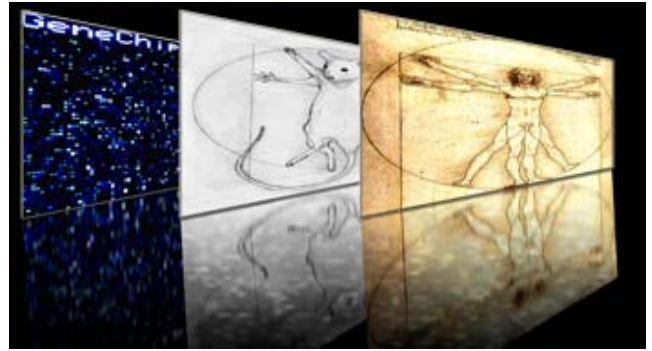
MMdb news

The MUGEN Mouse Database (MMdb; <http://www.mugen-noe.org/database/>) is a fully searchable virtual repository of mutant mouse models for immune processes and immunological diseases developed within the MUGEN NoE. Apart from detailed information on mouse availability and handling,

MMdb also displays genetic and allelic information, which is now directly linked to major databases such as the MGI, Entrez Gene and Ensembl where available. Furthermore, MMdb has recently implemented for the first time a parallel mouse phenotypic annotation using both the Mammalian Phenotypic (MP) Ontology and Phenotype And Trait Ontology (PATO) for the phenotypic characterization of the mice featured. Last, but not least, MMdb has become a contributing repository for IMSR, the largest online database of mouse strains and stocks available worldwide.

MMdb serves as a use-case example in the context of CASIMIR, a co-ordination action of the 6th Framework Program, aiming to make recommendations to the European Commission with regard to database integration and interoperability. To that aim, MMdb has now fully developed web services available through: <http://bioit.fleming.gr/mugen/mugenws?WSDL>, thus advancing towards a unified online portal.

Aidinis et al. MUGEN mouse database; animal models of human immunological diseases. *Nucleic Acids Res*. 2008 Jan;36(Database issue):D1048-54.



MUGEN's Expression Profiling Core is expanding.

In addition to its highly successful Expression Profiling Unit at Genopolis, MUGEN now has a new Expression Profiling Unit at BSRC Fleming. The new Unit started its operation in the beginning of 2008 and is equipped with the most advanced technology on microarray experimentation and data analysis. Its personnel has extensive experience on microarray technology as well as on RNA and DNA handling. The Unit provides expression profiling services to academic and research centers as well as the private sector, in the context of academic collaborations, participation in research networks, and/or contracted services. Competitive prices are offered together with imminent assistance available at all stages, from experimental design to target gene identification. Its current services include Affymetrix Microarrays, Bioinformatics Analysis, cDNA Microarray Scanning, Luminex – Multiplex Analysis, Real Time PCR. New services such as: SNP genotyping, drug metabolism studies, alternative splicing as well as tiled arrays, will be introduced soon. For more information, please visit www.expressionprofiling.eu

Course announcement:

A two-week intensive course on laboratory animal science, co-sponsored by MUGEN, will take place at the B.S.R.C. Alexander Fleming - Vari, Greece **from September 22 to October 3, 2008.**

COURSE ON LABORATORY ANIMAL SCIENCE

The objective of this course is to present basic facts and principles that are essential for the humane use and care of animals and for the quality of research. The contents of the course are in line with recommendations of the Federation of European Laboratory Animal Science Associations (FELASA) regarding the training of the young scientists whose research involves the use of vertebrate animals.

For information and application forms, please contact Marie Kamber, DVM, Head of animal facility, B.S.R.C. Alexander Fleming, Tel. +30 210 9656310, E-mail: kamber@fleming.gr, Web: www.fleming.gr