

3rd Annual Epigenetics Discovery Congress

12th - 13th October 2017, London, UK

Event Overview

After our two successful editions, we are glad to announce the **3rd Annual Epigenetics Discovery Congress**, which will be taking place on the **12th and 13th of October 2017 in London, UK**.

With a tremendous progress in technology to generate and analyze reference epigenomes, the epigenetics field is fetching a lot of importance and attention across all medical science's areas. Additionally, novel epigenetic molecules across many target classes for drug discovery, have been the prime focus of the pharmaceutical industry.

To meet and support this pace of the epigenetics research and development field, the **3rd Annual Epigenetics Discovery Congress** will present novel research and address challenges right from the molecular sciences & disease diagnosis to drug discovery streams. The congress will also be a great platform to learn about novel technologies like next generation sequencing and single cell analysis.

Who Should Attend?

Heads, Directors, Group Leaders, Professors, Lecturers, Research Associates, Scientists, Investigators, Fellows, Readers from Pharmaceutical, Bio-pharmaceutical and Research Institutes working in

- ✓ Epigenetics
- ✓ Developmental Epigenetics
- ✓ Epidemiology
- ✓ Biology
- ✓ Molecular Biology
- ✓ Developmental Biology
- ✓ Biomedical Sciences
- ✓ Biological Sciences
- ✓ Biochemistry
- ✓ Medicinal Chemistry
- ✓ Medicine
- ✓ Genetics and Genomics
- ✓ Developmental Genetics
- ✓ Organic Chemistry
- ✓ Natural Sciences
- ✓ Translational sciences/medicines

Key Highlights

- Epigenetics and disease
- Modulation of the tumor microenvironment
- bivalent inhibitors of BET bromodomains
- Chemical Biology Tools for Target Identification and Validation
- Epigenomics - Impact for Translational Safety Sciences
- Epigenetic programming and Allergic Disease
- Epigenetic regulation of biological ageing
- Effect of environment on lifestyle
- Transgenerational effects of epigenetics

Advisors 2017



Rab Prinjha, VP, Head of Epinova Epigenetics DPU, **GlaxoSmithKline, United Kingdom**



Moshe Szyf, Department of Pharmacology and Therapeutics, Glaxo Smith Kline and James McGill Professor, **McGill University Medical School, Canada**



Tony Bjourson, Director of N. Ireland Centre for Stratified Medicine & Professor of Genomics School of Biomedical Sciences, **Ulster University, Ireland**



Svetlana Hamm, Head of Translational Pharmacology, **4SC AG, Germany**



Miguel Branco, Senior Lecturer, **Blizard Institute, Queen Mary University of London, United Kingdom**



Guro Elisabeth Lind, Group leader Epigenetics, Department of Molecular Oncology, Institute for cancer research, **Oslo University**

For more information please contact

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Speakers



Rab Prinjha
VP, Head of Epinova Epigenetics DPU
GlaxoSmithKline, United Kingdom



Jesse Smith
Vice President, Biological Sciences
Epizyme, USA



Roland Baumgartner
CSO,
4SC, Germany



David M. Wilson
Senior Director & Head, Oncology
Medicinal Chemistry
Astrazeneca, United Kingdom



Susan Clark
Head of the Genome and Epigenetics
Division
**Garvan Institute of Medical
Research, Sydney, Australia**



Miguel Branco
Senior Lecturer
**Blizard Institute, Queen Mary
University of London, United Kingdom**



Carlos Buesa
CEO,
Oryzon, Spain



Christopher Schofield
Head of Organic Chemistry
**University of Oxford and
fellow of Royal society, United Kingdom**



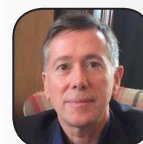
Paola Arimondo
CNRS
ETaC, France



Karen Lillycrop
Senior Lecturer, Biomedical Sciences
**University of Southampton,
United Kingdom**



Kilian Huber
Group Leader, Principal Investigator,
Group Head / PI, Member of
congregation and Supervisor
University of Oxford, United Kingdom



Paul Shiels
Professor, Epigenetics
University of Glasgow, United Kingdom



Jerome Dejaridin
Assistant Professor
INSERM, MSH, France



Petra Hajkova
Senior Lecturer
**MRC Institute of Medical
Sciences (LMS), United Kingdom**



Joelle Rüegg
Senior Researcher, Swetox & Dept. of
Clinical Neuroscience
Karolinska Institutet, Sweden



Katherine West
Lecturer in epigenetics
University of Glasgow, United Kingdom



Rémi Terranova
**Novartis Institutes for
BioMedical Research,
Switzerland**



Maria Toledo
Assistant Professor, Faculty of
Medicine & Health Sciences
**The University of Nottingham,
United Kingdom**



James Flanagan
Senior Lecturer, Cancer epigenetics
Unit
Imperial College London, United Kingdom



Brian Huntly
Professor of Leukaemia Stem Cell
Biology
University of Cambridge, United Kingdom



Paul Hurd
Senior Lecturer in Epigenetics
**Queen Mary University of
London, United Kingdom**



John Holloway
Associate Dean (Research), Professor
of Allergy and Respiratory Genetics
Faculty of Medicine
**University of Southampton,
United Kingdom**



Guro Lind
Professor, Dept. of Molecular
oncology
University of Oslo, Norway



Gavin Kelsey
Principal Research Scientist,
Epigenetics Programme
**The Babraham Institute,
Cambridge, United Kingdom**



Jonathan Turner
Principal Investigator,
Deputy Head of Unit
**Luxembourg Institute of Health,
Luxembourg**



Jelena Mann
Reader
Newcastle University, United Kingdom



Colum Walsh
Professor of Genetics
University of Ulster, United Kingdom



Gabriella Ficiz
Senior Lecturer
**Barts Cancer Institute, Queens
Mary University of London,
United Kingdom**

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Day 1, Thursday 12th October 2017

08:15 Registration

08:50 Welcome note from MarketsandMarkets

08:55 Opening Remarks by the Chair

Plenary Sessions

09:00 Drugging transcription: Progress and potential for treating human diseases
Rab Prinjha, VP, Head of Epinova Epigenetics DPU, GlaxoSmithKline, United Kingdom

09:30 Epigenetics and disease – A new landscape beyond oncology

- The first clinical results on relevant epigenetic targets in oncology trials are promising
- Beyond oncology, other indications may broaden the clinical relevance of epigenetic drugs
- New drugs against other epigenetic targets emerge as a second wave

Carlos Buesa, CEO, Oryzon, Spain

10:00 Modulation of the tumor microenvironment by epigenetic intervention

- Preclinical data demonstrating the immune-modulatory effects of HDAC inhibitors will be presented
- Translational aspects will be discussed
- Implementation of these concepts in clinical studies will be presented

Roland Baumgartner, CSO, 4SC, Germany

10:30 Solution Provider Presentation: Please contact Steve Hambrook at steve.h@marketsandmarkets.com

10:45 Morning Refreshments and Poster Presentation | One-to-One Networking Meetings

Epigenetics in Basic Research	Drug Discovery & Diagnosis
11:30 Opening Remarks by the Chair	11:30 Opening Remarks by the Chair
Epigenetic Modifications	Novel Epigenetic Marks
12:00 Exploring epigenetic landscapes in single cells • Profiling DNA methylation genome-wide in single cells • Ultra-low cell number analysis of chromatin states • Investigating interactions between chromatin marks and DNA methylation Gavin Kelsey, Principal Research Scientist, Epigenetics Programme, The Babraham Institute, Cambridge, United Kingdom	12:00 Potent and selective bivalent inhibitors of BET bromodomains • Discovery of a novel class of highly potent bromodomain inhibitors – so called biBETs • Disclose for the first time that both bromodomains in BRD4 can be engaged simultaneously with a bivalent small molecule inhibitor through an in cis binding mode. • Describe novel biology associated with biBET inhibitors David M. Wilson, Senior Director & Head, Oncology Medicinal Chemistry, AstraZeneca, United Kingdom
12:30 Control of telomere maintenance by heterochromatin • Heterochromatin forms at telomeres • Heterochromatin is required for telomere transcription • Failure to maintain heterochromatin drives alternative lengthening of telomeres Jerome Dejjardin, Assistant Professor, INSERM, MSH, France	12:30 Solution Provider Presentation: Please contact Steve Hambrook at steve.h@marketsandmarkets.com
13:00 Maintenance of pluripotent stem cell identity by nucleosome binding HMGN proteins • HMGN proteins are highly abundant nucleosome binding proteins that regulate transcription by modulating histone modifications and competing with linker histones • HMGN proteins are highly expressed in regions of the brain that are sites of embryonic and adult neurogenesis, including the subventricular zone and dentate gyrus • We will present data demonstrating that HMGN proteins are crucial for maintaining the identity and pluripotency of embryonal carcinoma stem cells. Katherine West, Lecturer in Epigenetics, University of Glasgow, United Kingdom	13:00 Chemical Biology Tools for Target Identification and Validation Kilian Huber, Group Leader, Principal Investigator, Group Head / PI, Member of congregation and Supervisor, University of Oxford, United Kingdom

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Epigenetics in Basic Research

Drug Discovery & Diagnosis

13:30 Lunch and Poster Presentation | One-to-One Networking Meetings

14:30

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14:30

Role of Oxygenases in Epigenetics

- Role of oxygen in epigenetic regulation.
- Identification of specific oxygenases involved in chromatin modification.
- Roles of 2-oxoglutarate dependent oxygenases in the regulation of the transcriptional and translational machinery, and attempts to modulate their activities for therapeutic benefit.

Christopher Schofield, Head of Organic Chemistry, **University of Oxford** and fellow of Royal society, **United Kingdom**

15:00

Epigenetic impact of physical exercise on the brain

- Physical exercise affects epigenetic regulators of adult neurogenesis (Ezh2, miR-137 and DNA methylation of miR-137 promoter region).
- Physical exercise and housing conditions influence anxiety and hippocampal glucocorticoid receptor (master regulator of the anxiety response) and miR-124 (negative regulator of the glucocorticoid receptor).

Maria Toledo, Assistant Professor, Faculty of Medicine & Health Sciences, **The University of Nottingham, United Kingdom**

15:00

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15:30

Hit-and-run epigenetic editing prevents senescence entry in primary breast cells from healthy donors

- Using CRISPR/Cas9 epigenetic editing tools to understand cause and consequence in DNA methylation biology
- Experiments performed in primary human normal breast cells
- Epigenetic editing of tumour suppressor genes lead to aberrant cellular behaviour in vitro

Gabriella Ficiz, Senior Lecturer, **Barts Cancer Institute, Queens Mary University of London, United Kingdom**

15:30

DNA modification dynamics during epigenetic reprogramming in vivo

Petra Hajkova, Senior Lecturer, **MRC Institute of Medical Sciences (LMS), United Kingdom**

16:00 Afternoon refreshments and Poster Presentation | One-to-One Networking Meetings

16:45

Epigenetic regulation of retrotransposable elements

- Host control of retrotransposon expression
- Epigenetic influence of retrotransposons on gene expression
- Interactions between host and retrotransposons

Miguel Branco, Senior Lecturer, **Blizard Institute, Queen Mary University of London, United Kingdom**

16:45

Overcoming challenges in the development of EZH2 inhibitors

Speaker TBA

Epigenetic Modifications

Epigenetic Combinations

17:15

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17:15

Novel epigenetic targets for pre-clinical and clinical development

17:45

Epigenetic effects of endocrine disrupting chemicals: from mechanisms to human health

- Involvement of hormone receptors in regulating DNA methylation
- The potential of epigenetic read-outs in chemical risk assessment
- Epigenetic markers for human exposure and health

Joëlle Rüegg, Senior Researcher, Swetox & Dept. of Clinical Neuroscience, **Karolinska Institutet, Sweden**

17:45

Potential of novel epigenetic targets in cancer and non-cancer therapies

Speaker TBA

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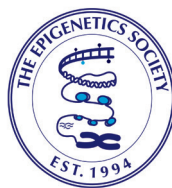


Epigenetics in Basic Research	Drug Discovery & Diagnosis
Epigenetics & Environment	Epigenetic Combinations
18:15 Metabolism-directed phenotypic plasticity in insects - Novel model organisms for studying the interface between metabolism and epigenetics - Organismal development can be regulated by metabolism - Differential nutrition can determine epigenomic differences Paul Hurd, Senior Lecturer in Epigenetics, Queen Mary University of London, United Kingdom	18:15 Development of epigenetic targets based assays for drug monitoring and analysis <i>Speaker TBA</i>
18:45 Epigenomics - Impact for Translational Safety Sciences - Recent advances in epigenomic profiling technologies to identify mechanism-based epigenetic biomarkers to enhance the development of pharmaceutical drugs and facilitate their use in personalized medicine. - Utility of integrated epigenomic profiling to enhance drug safety assessment. Rémi Terranova, Novartis Institutes for BioMedical Research, Switzerland	18:45 Epigenetics in Liver Fibrosis Jelena Mann, Reader in Epigenetics, Newcastle University, United Kingdom
19:15 Closing remarks by the Chair	19:15 Closing remarks by the Chair
19:20 Drinks Reception and Networking	
End of Day 1	

Exhibitor:



Supporting Associations:



Media Partners:



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Day 2, Friday 13th October 2017

08:15 Registration

08:50 Welcome note from MarketsandMarkets

08:55 Opening Remarks from the Chair

Plenary Sessions

09:00 Genetic Interactions between EZH2 and SWI/SNF Chromatin Remodeling Complex in Cancer: Therapeutic Implications

- Lesions in one or more genes encoding proteins in the SWI/SNF complex are found in greater than 20% of human cancers
- In certain contexts, lesions in SWI/SNF genes cause tumors to depend upon EZH2 activity for survival
- Tumor sensitivity to EZH2 inhibition depends on a combination of cell-of-origin and lesions in genes that affect polycomb signaling (such as SWI/SNF genes)
- Tazemetostat, a small molecule EZH2 inhibitor, is in clinical trials for patients with soft tissue sarcomas and rhabdoid tumors that bear lesions in SWI/SNF genes

Jesse Smith, Vice President, Biological Sciences, **Epizyme, USA**

09:30 Panel Discussion: Future of Epigenetic therapies – from mechanism to treatment

- How easy is it to target?
- How do we target alone or in combination?

Panelist -

Jesse Smith, Vice President, Biological Sciences, **Epizyme, USA**

Susan Clark, Head of the Genome and Epigenetics Division, **Garvan Institute of Medical Research, Sydney, Australia**

Paola Arimondo, CNRS, **ETaC, France**

James Flanagan, Senior Lecturer, Cancer epigenetics Unit, **Imperial College London, United Kingdom**

10:00 Solution Provider Presentation: Please contact Steve Hambrook at steve.h@marketsandmarkets.com

10:30 Morning Refreshments and Poster Presentation | One-to-One Networking Meetings

Epigenetics in Basic Research	Drug Discovery & Diagnosis
11:15 Opening Remarks by the Chair	11:15 Opening Remarks by the Chair
Transgenerational Epigenetics	Therapeutic Implications
11:20 Folic acid supplementation during later pregnancy: links with psychosocial development and DNA methylation from the FASSTT randomised control trial • Folate status was markedly improved at end of pregnancy for women receiving low dose folic acid supplementation during second and third trimester compared to placebo • Children of supplemented mums had improved cognitive and psychosocial performance at 4 and 7 years in standardised tests • Differences in DNA methylation tracked with folate status at a number of candidate loci examined Colum Walsh , Professor of Genetics, University of Ulster, United Kingdom	11:20 H3K27: a nexus for haematological transformation • UTX does not require its catalytic activity for tumour suppression. • EZH2 has entirely opposite functions during early and late haematological malignancies • EZH2 is a potential therapeutic target in haematological malignancies. Brian Huntly , Professor of Leukaemia Stem Cell Biology, University of Cambridge, United Kingdom
11:50 Overcoming ethical challenges for undertaking transgenerational epigenetics	11:50 Solution Provider Presentation: Please contact Steve Hambrook at steve.h@marketsandmarkets.com
12:20 Early life environmental exposure, Epigenetic programming & Allergic Disease • Environmental exposures during pregnancy including diet, nutrient intake and toxin exposures can alter the epigenome and interact with inherited genetic and epigenetic risk factors to directly and indirectly influence organ development and immune programming. • In this presentation I will summarize the evidence that suggests allergic disease begins in utero, together with possible mechanisms for the effect of environmental exposures during pregnancy on allergic disease risk, including epigenetic programming • I will discuss the evidence for environmental effects on the neonatal epigenome (DNA methylation) and its association with allergic disease in childhood. John Holloway , Associate Dean (Research), Professor of Allergy and Respiratory Genetics Faculty of Medicine, University of Southampton, United Kingdom	12:20 Replication timing changes are concordant with long range epigenetic and genetic alterations in cancer • A cancer-specific replication timing signature exists. • Long-range epigenetically regulated domains change replication timing in cancer. • Late-replicating regions lose DNA methylation and gain and lose/switch repressive histone domains. • Late-replicating regions are prone to cis translocations and early-regions to trans translocations. Susan Clark , Head of the Genome and Epigenetics Division, Garvan Institute of Medical Research, Sydney, Australia

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Epigenetics in Basic Research

12:50

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Drug Discovery & Diagnosis

12:50

What to expect from the chemical targeting of DNA methylation in cancer cells?

- We have adopted 4 chemical strategies to design novel non-nucleoside inhibitors of DNA methyltransferases
- The compounds demethylate specifically few gene promoters
- The cellular consequences of this DNA demethylation are compared to nucleoside inhibitor decitabine.

Paola Arimondo, CNRS, ETaC, France

13:20 Lunch and Poster Presentation | One-to-One Networking Meetings

Methylation in Disease Processes

14:20

Effect and role of DNA in cancer

14:20

Epigenetic regulation of biological ageing as a determinant of renal function

- ncRNA regulation of biological ageing is a determinant of age related renal function.
- Defines processes common for good functional health across taxa
- Clinical interventions enabled by this in renal transplantation

Paul Shiels, Professor, Epigenetics, University of Glasgow, United Kingdom

14:50

Developmental origin of obesity: the role of epigenetics and environment

- Role of epigenetics in the developmental origins of disease
- Epigenetic marks as predictors of future disease risk
- Plasticity of the epigenome and when and how to intervene

Karen Lillycrop, Senior Lecturer, Biomedical Sciences, University of Southampton, United Kingdom

14:50

Epigenetic Mechanisms of Cancer Risk

- Epigenome-wide studies have identified a loss of methylation in blood DNA as a risk factor for cancer
- Cancer risk factors such as aging, smoking, BMI and alcohol consumption all significantly alter the epigenome
- Cancer Therapies also significantly alter the epigenome and may provide a mechanism for chemoprevention

James Flanagan, Senior Lecturer, Cancer epigenetics Unit, Imperial College London, United Kingdom

15:20

Lifelong epigenetic and pathophysiological effects of early life adversity

- Exposure to poor conditions in early life induces a predisposition to allergy, upper respiratory tract infections, mental health problems and cardiovascular disease.
- We have a significant cohort that have experienced early life adversity that have been epigenetically, psychologically and pathophysiological characterised.
- DNA methylation mediates this process, and we have identified many differentially methylated regions that are associated with physiological variables later in life

Jonathan Turner, Principal Investigator, Deputy Head of Unit, Luxembourg Institute of Health, Luxembourg

15:20

Development of an epigenetic non-invasive test for detection of bladder cancer

- Bladder cancer is currently one of the most expensive cancer types to manage, due to the high recurrence rate and extensive monitoring by cystoscopy
- We are developing a urine based epigenetic test to replace parts of the cystoscopies, reducing discomfort for the patients, and costs of follow-up
- Using methylome sequencing we have identified suitable DNA methylation biomarkers that currently are analyzed in urine samples using the powerful digital PCR technology

Guro Elisabeth Lind, Group leader Epigenetics, Department of Molecular Oncology, Institute for cancer research, Oslo University

15:50

Closing remarks by the Chair

15:50

Closing remarks by the Chair

16:00 Afternoon refreshments & End of Conference

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