International Centre for Genetic Engineering and Biotechnology

Developing Knowledge

European Commission

ICGEB-JRC Workshop on

"Genome editing applications and beyond"

19-22 November 2019 | Trieste, ITALY

PRELIMINARY PROGRAMME

TUESDAY 19 November

08.00	*Bus departure from city centre*	
08.30-09.30	Workshop Registration	Congress Centre, AREA Science Park, Padriciano Campus - Building 'C1'
09.30-10.00	Welcome address	

SESSION 1. GENOME EDITING: what it is and what it can do

This session will illustrate the GENOME EDITING approach, with a particular focus on:

- How is genome editing impacting basic and applied research?
- Why has genome editing been defined as a disruptive technology?
- What are the current and foreseeable applications?

10.00-10.30	**Anna Cereseto**, University of Trento, Italy	Life science in the CRISPR era
10.30-11.15	Oral contributions from participants (2)	
10.30	**Bibiana Iraki**	Communicating Gene Editing: Models that Work
10.45	**Tanushri Kaul**	Developing glyphosate resistant crop lines use CRISPR-Cas9 system
11.15-11.45	*Coffee break*	

SESSION 2. GENOME EDITING IN PRACTICE

This session will deal with general applications of genome editing (thus covering all organisms) and, in comparison with other established genetic modification techniques, a number of topics that are of critical importance with respect to their safe use will be highlighted. In particular, discussions will focus on:

- Predictability of the intended change
- Stability of the change
- Multiple edits
- Detection, identification, quantification and traceability of changes
- Unintended changes and effects
- Biosafety aspects, including those derived from DIY applications, environmental escape and dual use

11.45-13.15	**Julia Jansing,** Maastricht University, The Netherlands	Current technical limitations and future developments in plant genome editing
	Nils Rostoks, University of Latvia	Considerations for the risk assessment of genome-edited organisms
	Jana Murovec, University of Ljubljana, Slovenia	DNA-free genome editing of plants
13.15-14.45	*Lunch break*	
14.45-15.45	**Vittorio Venturi,** ICGEB Trieste, Italy	Genome editing in bacteria
	Marcello Raspa, EMMA Monterotondo, Italy	Genome editing in animals
15.45-16.15	*Coffee break*	

SESSION 3. BEYOND GENOME EDITING

The session will discuss the most recent uses of genome editing, other than applications for DNA editing.

- CRISPR as diagnostic tool for detection and traceability
- Further evolution to be expected in genome editing technologies

16.15-17.15	**Roberto Galizi**, Imperial College London, UK	Engineering genetic tools to fight malaria
	Jessica Uwanibe, ACEGID, Redeemer's University, Nigeria	CRISPR as diagnostic tool
17.15-18.15	Oral contributions from participants (4)	
	Tesfaye Disassa Bitema	Two Decades of Agricultural Biotechnology Research and Development in Ethiopia
	Natalya Permyakova	Inactivation of the gfp gene by RGEN in Arabidopsis thaliana suspension cell culture
	Wilton Mwema Mbinda	Genome editing in finger millet blast resistance
	Weerasak Pitaksaringkarn	Developments of qualitative multiplex real-time PCR for screening GM plant
18.30	*Bus to city centre*	

WEDNESDAY 20 November

08.30	*Bus departure from city centre*	

SESSION 4. THE SPECIAL CASE OF APPLICATIONS OF GENOME EDITING IN HUMANS

The session will deal with applications of genome editing in humans, with a special focus on:

- What are the current and foreseeable applications in humans?
- Ethical aspects

09.00-10.00	**Mauro Giacca,** King's College London and ICGEB	Genome editing for human therapy
	Alessandra Recchia, University of Modena and Reggio Emilia, Italy	CRISPR-based genome editing for monogenic rare diseases
10.00-10.30	*Coffee break*	

SESSION 5. CURRENT LEGISLATIONS AND REGULATORY FRAMEWORKS

This session will discuss the fundamentals of regulatory frameworks in different countries, as a basis for authorised access and use of the technology:

- What is the current situation in relation to legislation overseeing the use of genome editing?
- What are the most relevant policy challenges?

10.30-12.30	**Rishi Kumar Tyagi,** Asia-Pacific Consortium on Agricultural Biotechnology and Bioresources, Thailand	Gene Editing in Agriculture – Scope, Perspectives and Policy Challenges in Asia-Pacific region
	Michael Morrison, HeLEX - Centre for Health, Law and Emerging Technologies, University of Oxford	Continuity and disruption in the regulation of gene editing
	Patrick Rüdelsheim, PERSEUS bvba, Belgium	GMO, what is in a name?
	Michele Garfinkel, EMBO	As much as necessary, but no more: policy implications for responsible regulation of genome editing and its applications
12.30	*GROUP PHOTO*	
12.45-14.00	*Lunch break*	
14.00-15.00	Contributions from participants (4)	
	Reham Dawood	Genome editing for the therapy of HCV infection
	Saumya Shah	Metabolic engineering of novel UDP-flavonoid glucosyltransferase in *Ocimum tenuiflorum*
	Andres Gatica-Arias	Attitudes towards genome editing in Costa Rica
	Theophilus Mwendwa Mutui	Biosafety Regulatory Framework in Kenya
15.00-16.30	*Coffee break with posters*	
16.30-17.30	Conclusions and recommendations (results of the questionnaire) End of the workshop	

17.30	*Get together*	
19.00	*Bus to city centre*	

THURSDAY 21 November

08.30	*Bus departure from city centre*	
09.00-09.30	Practical Course Registration	ICGEB Foyer, 'W' Building

Genome editing in practice – Workshop theoretical and practical sessions

(Admission to the practical session limited to 20 selected participants)

GENOME EDITING IN BACTERIA AND PLANTS		ICGEB Seminar Room, 'W' Building
09.30-10.30	**Guido Grandi,** University of Trento, Italy	Synthetic biology of bacterial outer membrane vesicles (OMVs) for the development of vaccines against infectious diseases and cancer
10.30-11.00	*Coffee break*	*ICGEB Foyer*
11.00-11.45	**Jana Murovec**	Current techniques for genome editing in plants
11.45-12.30	**Andres Muro**, ICGEB Trieste, Italy	Genome editing applied to biomedical research
12.30- 13.30	Discussion Introduction to the Practical Session	
13.30-14.30	*Lunch break*	*Cafeteria, Ground Floor, 'C' Building*
PRACTICAL SESSION		
14.30-17.30	Admission reserved to 20 selected participants	ICGEB Teaching Lab, 'F2' Building
17.30	*Bus to city centre*	

FRIDAY 22 November

08.30	*Bus departure from city centre*	
PRACTICAL SESSION		
09.00-11.00	Admission reserved to 20 selected participants	ICGEB Teaching Lab
11.00-11.30	*Coffee break*	*ICGEB Foyer*
11.30-13.30	Admission reserved to 20 selected participants	ICGEB Teaching Lab
13.30-14.30	*Lunch break*	*Cafeteria, Ground Floor, 'C' Building*
14.30-16.00	Admission reserved to 20 selected participants	ICGEB Teaching Lab
16.00	*End of the practical sessions and bus to city centre*	