Mouse and Materials MTA Discussion

International Mouse Phenotyping Consortium

MTA Committee discussion Nov 2011

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ROME AGENDA 2009

- **Data and resource-sharing infrastructure**
- Further dedicated sustainable investment in public databases and repositories should be encouraged. 
- Funding agencies should provide researchers with clear direction on expectations for data/resource/publication sharing, and should **ensure appropriate data-sharing plans** at the  outset of projects and facilitate sharing as data and **resources** are generated. **+/- ?**

Known or Previous Issues

- Time to process MTAs
- Re-visiting same issues on new requests
- Commercial purposes v.s. for-profit entities
- Transfer of materials to third parties
  - Collaborators
  - Third party vendors-major issue for GSK
  - Local but non-collaborating PIs

IMPC Members ARE Delivering Mice

KOMP2 lines distributed from Production Centers and KOMP Repository (by genes)

(since September 2012)

Production Center	No. orders placed				No. orders fulfilled			
	All Genes		Unique Genes		All Genes		Unique Genes	
	March	Cumulative	March	Cumulative	March	Cumulative	March	Cumulative
KOMP2-DTCC-TCP	1	12	0	9	3	8	3	6
KOMP2-BaSH-Baylor	12	198	4	153	0	16	0	10
KOMP2-BaSH-Sanger*	1	64	1	55	0	40	0	38
KOMP2-BaSH-Harwell**	8	74	8	67	2	28	2	26
KOMP2-JAX	45	215	41	187	24	85	20	79
NorCOMM2-TCP	1	21	1	11	0	17	0	6
KOMP Repository	31	470	8	301	31	299	17	220

Current Discussion Topics (2011)

- Rapid transfer of mice and materials amongst IMPC member
- Transfer of mice and materials to IMPC collaborators
- Field of Use (no requirement?)
- Modifications (grant back, co-ownership, ??)
- Transfer of mice and materials to third parties
  - Third party vendors
  - Local but non-collaborating PIs (e.g. UK networks)

Bulk Order Option

Exhibit A

KO Line Identification (Gene or Allele Symbol)	Embodiments (ES cells/Targeting Vectors/ Mice)

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Current MTA Restrictions: Field of Use

(a) The RECIPIENT shall use the BIOLOGICAL RESOURCE for the following specific purpose: _____

(b) The RECIPIENT shall obtain a written prior permission from the [redacted] for the usage of the BIOLOGICAL RESOURCE for any other purposes than the purpose specified above.

The RECIPIENT shall not use the BIOLOGICAL RESOURCE for diagnosis or treatment of

Current MTA Restrictions: Field of Use

4. Specifically, the **MATERIAL** will be used solely for the study of:
(attach an additional sheet if required)

5. The **MATERIAL** will be used for internal research and development purposes only, as described in Article 4 above. The **MATERIAL** will not be used for any other purpose, including the

The investigator must obtain prior written consent if the area of study changes.

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Current MTA Restrictions: Field of Use

"Field of Use" means use for any research purpose, including research directed toward the discovery, development or commercialization of therapeutic and diagnostic products, resulting from any and all teaching, research and development activities conducted by faculty, researchers, students or other employees of any Institution or Commercial Entity, whether or not resulting in patentable inventions and whether or not published, but excluding any fee-for-service conducted for the benefit of a third party.

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ROME AGENDA 2009

- **Licensing and patenting**
- The public sector should patent mice as research tools only under exceptional circumstances.
- Licensing terms for mouse resources or research methods should promote the establishment of a mouse 'research commons'.
- Materials and data should be shared under the least restrictive terms possible. Material transfer agreements for sharing materials between academic and not-for-profit institutions **should be avoided or simplified**.
- Researchers should be free to breed shared mice for internal research purposes and to cross-breed to develop new mouse models.
- Licensing of mice or methods for commercial use should include a broad reservation of rights for academic and not-for-profit institutions.
- **Licensing terms should not include inappropriate royalty reach-through or product reach-through on subsequent inventions, and institutional policy should reflect this.**

Patents RULE

United States Patent 6,909,031

Transgenic mice containing glucagon receptor gene disruptions

Inventors: **Allen; Keith D.** (Cary, NC), **Moore; Mark** (Redwood City, CA), **Matthews; William** (Woodside, CA)

The present invention relates to transgenic animals, as well as compositions and methods relating to the characterization of gene function. Specifically, the present invention provides transgenic mice comprising mutations in a glucagon receptor gene. Such transgenic mice are useful as models for disease and for identifying agents that modulate gene expression and gene function, and as potential treatments for various disease states and disease conditions. **The present invention also relates to diabetes and diabetic condition, as it demonstrates the role of the glucagon receptor in diabetes and diabetic conditions.** The present invention further relates to weight gain and weight related conditions, such as obesity, and demonstrates the role of the glucagon receptor in weight gain and weight related conditions, such as obesity. In accordance with these aspects, the present invention provides methods and compositions useful in identifying, testing, and providing treatments for diabetes and diabetic conditions, weight gain and weight related conditions such as obesity.

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Patents RULE-if you enforce them

- **Glucagon Receptor Knockout Prevents Insulin-Deficient Type 1 Diabetes in Mice**
- **Young Lee[1], May-Yun Wang[1], Xiu Quan Du[2], Maureen J. Charron[2] and Roger H. Unger[1,3]**
- **+**Author Affiliations
- [1]Touchstone Center for Diabetes Research, Department of Internal Medicine, University of Texas Southwestern Medical Center, Dallas, Texas
- [2]Department of Biochemistry, Albert Einstein College of Medicine, Bronx, New York
- [3]VA North Texas Health Care System, Dallas, Texas
- Male mice with global glucagon receptor knockout and wild-type mice (19) were provided by M.J.C.

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Patents RULE-if you enforce them

- **Lower blood glucose, hyperglucagonemia, and pancreatic alpha cell hyperplasia in glucagon receptor knockout mice.**
- Gelling RW[1], Du XQ, Dichmann DS, Romer J, Huang H, Cui L, Obici S, Tang B, Holst JJ, Fledelius C, Johansen PB, Rossetti L, Jelicks LA, Serup P, Nishimura E, Charron MJ.
- **Author information**
- [1]Department of Diabetes Biology, Pharmacological Research 2, Novo Nordisk AS, DK-2880 Bagsvaerd, Denmark.

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No Reach Through

- **All intellectual property rights** (including, without limitation, design rights, copyrights, database rights, rights in confidential information and know-how and the right to apply for patents) and all results, data and discoveries arising out of the Investigation **shall belong to the Recipient.**

Protection to Provider

- If the Recipient files any application for a patent in respect of an Invention, it shall at Sanger's request and expense, grant to Sanger a non-exclusive, worldwide, royalty-free licence to use for research purposes only **any resultant patents solely in connection with the Materials** (with the right to sub-license solely in connection with the distribution of the Materials to third parties by Sanger under a substantially similar agreement to this agreement).

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Current MTA Restrictions: Modifications

3.2 If the *Recipient or Staff* create, own, benefit from or acquire any intellectual property rights in respect of (i) any *Modifications*, or (ii) any inventions which directly relate to the use of the *Material* and which are conceived of or first actually

"IPR") the *Recipient* shall, to the extent it is legally able to do so (and except where the Recipient is a U.S. Public Health Service agency), grant to the *Originator* a non-exclusive, worldwide, royalty-free, sub-licensable, fully paid-up licence to use such IPR for the *Originator's* own internal, non-profit making research and teaching purposes and to allow *Originator/Provider* to continue to distribute the *Material* and applicable *Modifications* to third parties for non-*Commercial* research and teaching purposes. Where the Recipient is an agency of the U.S. Public Health Service ("PHS", which includes NIH, FDA and CDC), it is PHS policy to permit and encourage use of the IPR for the Originator's own internal, non-profit making research and teaching purposes and to allow the Originator and Provider to continue to distribute the Material and applicable Modifications to third parties for non-Commercial research and teaching purposes on a non-profit basis.

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Ownership and Intellectual Property

- 4.1 The *Originator* and/or *Provider*, as appropriate, retains all intellectual property rights in *Material*.
- 4.2 *Recipient* or faculty, researchers, students or other employees of *Recipient*, …, shall own title in any *Modifications and* may seek intellectual property rights so long as *Recipient* credits or otherwise acknowledge *Provider* and *Originator* of *Material*, and does not block distribution of or research using original *Material*

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Most Recent MTA

- 1.1 "*Material*" mouse lines with single-gene mutations of the original International Knockout Mouse Consortium (IKMC) allele (e.g. tm1a, tm1e or tm1 alleles) or its direct modifications using Cre and/or Flp recombinase (e.g. tm1b, tm1c, tm1d, tm1e.1, tm1.1) in a C57BL/6N background.

What's the Rush?

YES we have Elephants in the room!

Researchers will not wait anymore-they are enabled
Researchers will not believe that THEY will make a bad allele
Repositories must deliver as quickly as possible or risk being ignore
With enabling technology Repositories have the opportunity to provide much Needed QC and organization

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Recommendatons: Deja Vu

- Obtain consensus for action items from this meeting-validation and mandate
- Adhere to Rome Agenda
  - Materials and data should be shared under the least restrictive terms possible. Material transfer agreements for sharing materials between academic and not-for-profit institutions **should be avoided or simplified**.
- The Central Repositories for IMPC should lead
  - We cannot wait for all groups to agree before implementation
  - Seek to have individual centers adopt “new” policy ASAP

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