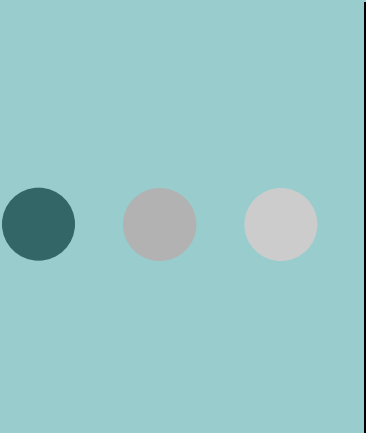




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Humanized Mice – More for Express readers to worry about

Dr Martin Vinnell
Director of Health & Safety
Home Office Establishment Licence Holder



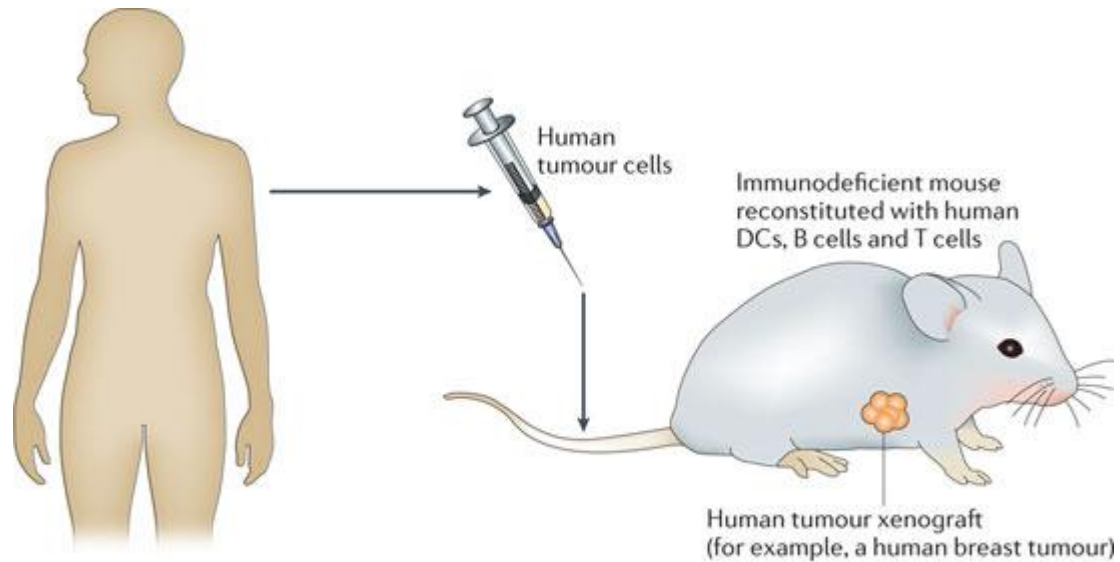
- ‘A “humanized mouse” is a mouse carrying functioning human genes, cells, tissues, and/or organs.
- commonly used as small animal models in biological and medical research for human therapeutics.
- Immunodeficient mice are often used as recipients for human cells or tissues, because they can relatively easily accept heterologous cells due to lack of host immunity.
- Traditionally, the nude mouse and severe combined immunodeficiency (SCID) mouse have been used for this purpose, but recently the NOG mouse and the NSG mouse have been shown to engraft human cells and tissues more efficiently than other models.



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Example of current research



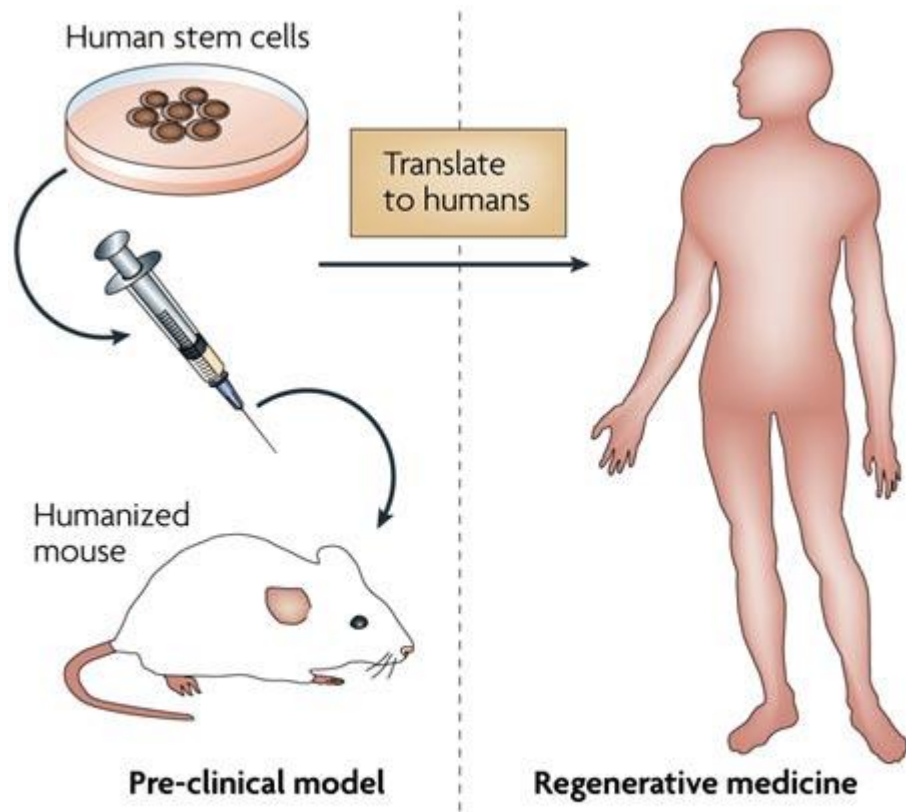
Nature Reviews | Immunology



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Future goal



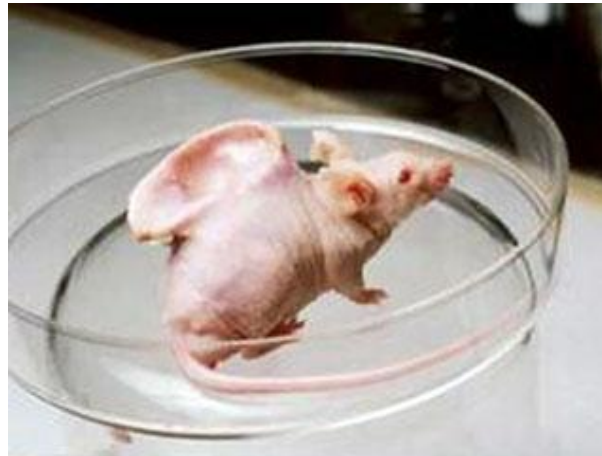
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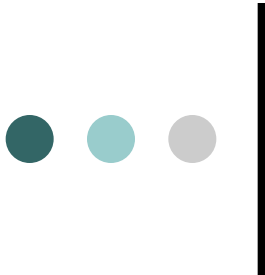


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● ● ● | *What it is NOT....but not in the public view*





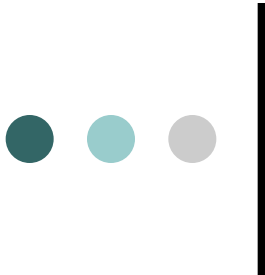
On the up

- Unit managers indicated that the use of humanised mice was on the rise, with an increasing number of 'Study Plans' (animal experimental 'authorisation forms') being submitted for work with these animals.
- This was raising concerns with managers, in particular where 'non-screened human bloods and tissues' were being injected/implanted.
- Unit managers were informed to request a biological risk assessment for these materials.
- The use of 'non-screened' material would require the animals to be held at Containment Level 2 unless the Risk Assessment indicated a higher or lower containment level, and to assure themselves that animal technicians and others involved in the research were clear of the requirements of working at that containment level
- The use of humanised mice would continue to be monitored, both within the University and elsewhere to keep track of emerging concerns/techniques and precautions. The University would continue with a precautionary approach.



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Entire Animal Facilities at CL2?

- We currently operate CL2 areas within our units.
- Waste and areas are segregated.
- Limited ability/space for segregated equipment (e.g. cage washers/autoclaves).
- CL2 units may become the norm.

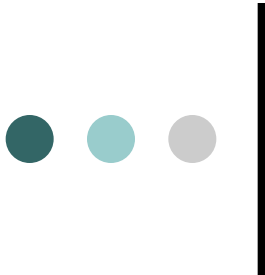
The walls of containment move inwards....

- 'Containment at Cage' is already used in principle.
- Fine for animal protection/infection control
- But how would this operate under COSHH?



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Ongoing vigilance, oversight and review

- Use of humanized mice can be effectively monitored via the AWERB system.
- Sub-Com-Bio-Saf will continue to be apprised of use.
- HO is reviewing their CoPs – HSE expected to do the same.
- Continue precautionary approach.
- Containment concepts, design and methodology to be considered for the new builds.

