



# NEWSLETTER

Recombinant DNA Monitoring Committee

January 2015

Issue 8

## Your IBC

Farewell to Sarah Thornton (WEG) and Kathy Smith (IBC Secretary). We thank them for their service to the IBC! Welcome to our new committee members: Dr Ian Parish (JCSMR) and Dr Harris Korres (WEG). Farewell to liaison officer Dr Mark Hayes (JCSMR). Welcome to new liaison officer David Mann (JCSMR). Welcome to new IBC Secretary Dr Anesh Nair.

## Surrendering PC2 certification

When PC2 certification of a laboratory/facility is no longer required, the facility manager must inform the IBC Secretary of the following:

- Confirmation that all GMOs requiring containment have either been removed from the facility, destroyed or stored appropriately.
- Confirmation that all surfaces and equipment in the facility used to handle or store GMOs have been decontaminated.
- Laboratory/Facility is completely free of debris.

**Tips on decontamination:** Please note that 80% ethanol should only be used to decontaminate surfaces where work on GMOs is carried out. This includes laboratory benches.

DO NOT use 80% ethanol on the whole laboratory. Because of their volatility and flammability, alcohol disinfectants should only be used sparingly in biological safety cabinets and not on equipment that is likely to cause sparks. In addition, the resulting fumes can be a health hazard.

F10 is a good alternative to 80% ethanol for clean-up that involves microbiological contamination. Household cleaning products can be used to wipe down laboratory walls and mopping of laboratory floors. Bleach is not recommended for large-scale decontamination because the resulting chlorine fumes are a health hazard.



Ensure that all laboratory debris and waste is safely removed from the laboratory prior to decontamination.

For more information and guidance on surrendering PC2 certification, please go to: <https://researchservices.anu.edu.au/ori/rdna/surrendering.php>

## OGTR Spot Audit, November 2014

The Monitoring section of the OGTR visited the ANU on 20 November. The purpose of the inspection was to monitor licences and facilities. The Inspection Team selected two DNIRs, one in RSB and one in JCSMR, and all the facilities associated with these dealings. The audit team visited level 3 of RSB, the RSB autoclave room, JCSMR level 3 Superlab, the JCSMR Animal Containment Suites and the JCSMR autoclave facilities.

The Inspection Team spent up to half the audit time reviewing documents such as:

- Licence training records including signed statements acknowledging that the signatories understood and agreed to be bound by the conditions of the DNIR
- Certified facility training records
- Any manuals or other documents outlining procedures used in the facility
- Monthly testing and annual maintenance/calibration documents for heat based equipment/autoclaves
- Pest Management strategy and records
- Backflow prevention documents

The IBC would like to thank everyone involved for their co-operation in preparing documents, laboratories and facilities.

## Annual Laboratory Inspections 2014

Thanks to everyone for preparing labs for the annual laboratory inspections. Thank you to liaison officers Farid Rahimi, Uschi Weidemann, Stephanie McCaffery and David Mann for facilitating the inspections. Thank you to Harris Korres, Kelly Debono and Anesh Nair for acting as inspectors.

## Use of Research Facilities at other institutions/Collaborating

The ANU IBC cannot provide approval for work to be conducted at a facility controlled by another IBC or by researchers at another institution. ANU researchers must have the approval of the other institution's IBC before beginning work at another institution.

## Work with any type of GMO must be approved by the IBC

If you are working with recombinant organisms of any type (including transformed cell lines and routine cloning) **you must have the written approval of the IBC**. The IBC has an obligation to ensure that all GM work is correctly classified and that all GM work classified as non-exempt is monitored. Please email [rdna.officer@anu.edu.au](mailto:rdna.officer@anu.edu.au) describing your work and you will receive prompt and helpful feedback!

## Genome editing and classification of GMOs

The advent of cost-effective gene synthesis combined with Tal-effector- and Crispr/Cas9-related technologies for engineering gene-specific deletions (e.g. Talens) and insertions has challenged the definition of what is or is not a GMO as a consequence of the ability to generate deletions or insertions that carry no footprints of the inciting Tal-effector- or Crispr/Cas9 construct. In a sexually reproducing GMO, it is possible to segregate away the inciting construct and leave only a deletion equivalent to one that could arise naturally or following treatment with a conventional mutagen. In this case, progeny

lacking the inciting construct would no longer be GMOs whereas those retaining the construct would remain PC2 GMOs. Transient delivery systems may also generate derivatives lacking the inciting construct.

However, the situation becomes more complex when these technologies are used to replace the coding sequence of a gene with an altered coding sequence containing multiple non-synonymous mutations. Does the altered gene qualify as foreign DNA necessitating classification as a PC2 GMO? Multiple base substitutions can arise naturally over evolutionary time scales but are unlikely to be generated by conventional mutagens. One possible evaluation tool might be to look at the similarity of the protein encoded by the variant gene compared to that encoded by the original gene, using BlastP searches of protein sequence databases. For example, if the variant protein is more similar to a protein from another genus or more divergent than the nearest relative from another genus, then the variant gene should perhaps be considered foreign and the organism be classified as a PC2 GMO.

What are your views? The IBC is interested in your views because they could help shape IBC or even OGTR policy in this grey area. If you would like to have your say please email the ANU IBC Secretary at [rdna.officer@anu.edu.au](mailto:rdna.officer@anu.edu.au).

## Visit the IBC Website

The ANU Recombinant DNA Monitoring Committee has a website and we invite you to visit us at <https://researchservices.anu.edu.au/ori/rdna/index.php>.

On our website you can find information about GMOs with links to OGTR requirements, copies of our newsletters, facility inspection requirements, information about applying for a dealing (exempt, NLRD, DNIR or DIR), application forms and more.

## Need help?

Contact the IBC Secretary,  
T: 6125-7945,  
E: [rdna.officer@anu.edu.au](mailto:rdna.officer@anu.edu.au)  
W: <https://researchservices.anu.edu.au/ori/rdna/index.php>