Gene Technology Technical Advisory Committee

COMMUNIQUE
No. 22

This is the 22nd communiqué of the Gene Technology Technical Advisory Committee (GTTAC). It covers matters considered at the 32nd meeting of GTTAC, held on 9th and 10th April 2008.

GTTAC is a statutory advisory committee to the Gene Technology Regulator (the Regulator) and the Gene Technology Ministerial Council. All Committee members and expert advisers hold office on a part-time basis.

The Regulator receives input from GTTAC on Risk Assessment and Risk Management Plans (RARMPs) prepared for licences to conduct dealings with genetically modified organisms (GMOs).

The purpose of this Communiqué is to provide a brief overview of the applications and RARMPs considered by GTTAC and the advice the Committee has provided to the Regulator with regard to those applications and RARMPs.

The Communiqué also provides an overview of any other major issues discussed by GTTAC.

Dealings Involving the Intentional Release of Genetically Modified Organisms

Dealings Involving the Intentional Release of GMOs (DIRs) are dealings that are undertaken outside of a certified physical containment facility. DIRs involve the limited and controlled release (field trial) of a GMO or a commercial (general) release of a GMO.

The RARMP for every DIR licence application is released for public comment as part of the consultation process. Information on how to obtain copies of applications and RARMPs for DIRs is provided at the end of this document.

Advice on RARMPs

Advice on Consultation RARMP's

GTTAC considered the Consultation RARMP's prepared in response to the following applications:

DIR 076/2007 – Limited and controlled release of banana (*Musa sp*.) genetically modified for enhanced nutrition

The purpose of the proposed trial is to conduct proof of concept research involving experiments with GM banana lines to assess growth, fruit and yield characteristics and analyse nutrient content of fruit and vegetative parts. A number of promoters will also be tested in order to identify those that achieve best expression of the genes in the fruit. The GM bananas will not be used for human food or animal feed.

GTTAC discussed this application and RARMP and advised the Regulator that:

- the hazard characterisation and risk identification are adequate;
- the proposed licence conditions are adequate to manage the release;
- confirmation of the Agrobacterium-free status of GM plants prior to release should be considered; and
- the RARMP should include a discussion of the fact that there is a habitat that is capable of supporting the presence of a native Musa species near the trial site, and address the possibility of gene flow.

DIR 077/2007 – Limited and controlled release of wheat and barley genetically modified for enhanced tolerance to abiotic stresses or increased beta glucan

The purpose of the proposed trial is to conduct proof of concept research involving experiments with GM wheat and barley lines to assess their agronomic performance under field conditions, and to obtain tissue samples for subsequent analysis of characteristics such as gene and protein expression levels, and metabolite profiles. Some seed will be saved for possible future trials which would be subject to further approval(s).

GTTAC considered the consultation RARMP for this application and advised the Regulator that:

- given the fact that the trial will be conducted at a Research Station where other cereal varieties may be grown, the likelihood and consequences from gene flow to proximate sexually compatible cereals should be assessed.

Advice on DNIR Application

DNIR 438/2008 - A Phase I safety study in subjects with severe Haemophilia B (Factor IX deficiency) using Adeno-Associated Viral vector to deliver the gene for human Factor IX into the liver combined with transient immunomodulation.

A previous related clinical trial in severe Haemophilia B patients in the USA used vectors based on *Adeno-associated virus* serotype 2 (AAV2) to deliver the Factor IX gene directly to the liver. AAV2 is a naturally replication-defective virus that is not associated with human disease and is ubiquitous in the environment.

The results of this trial demonstrated that AAV2-mediated Factor IX gene therapy can achieve clinically significant levels of the Factor IX clotting factor with no serious adverse events reported to date; however, expression of therapeutic levels was short-lived in these trials due to clearance by the patient's immune system.

The proposed study will be conducted in conjunction with the ongoing clinical trial in the USA and aims to determine the safety, optimal dose and efficacy of intrahepatic administration of the AAV2 vector expressing human Factor IX (AAV2-FIX) to patients with severe Haemophilia B. In addition patients will receive transient administration of oral immunosuppressants to prevent immune clearance of the vector and extend the period of expression of therapeutic levels of Factor IX.

GTTAC discussed this application and advised the Regulator that:

- The risks to people conducting the dealings and to the environment were considered to be minimal

(NB: Safety issues related to participants in the trial are considered by Human Research Ethics Committees and/or the Therapeutic Good Administration and are outside of the terms of reference of the Regulator)

Presentations

As this was the first meeting of a newly appointed committee, the following presentations were made to GTTAC by OGTR staff:

- Overview of the Gene Technology Act 2000 and the Gene Technology Regulations 2001
- Overview of the work of GTTAC, application processes and the mechanisms for providing advice to the Regulator
- Overview of the risk assessment methodology used by the Regulator.

Enquiries and Risk Assessment and Risk Management Plans

For all enquiries and to obtain copies of applications or RARMPs for dealings involving the intentional release of GMOs into the environment, please phone the OGTR on 1800 181 030. The RARMPs are also available electronically from our website at http://www.ogtr.gov.au