New Zealanders for HEALTH RESEARCH
Ngā Tāngata o Aotearoa mō te Rangahau Hauora

"New Zealand's peak body representing the entire health and medical research pipeline"

Submission on Hazardous Substances and New Organisms (HSNO) (Hazardous Substances Assessments) Amendment Bill[1]

Introduction

New Zealanders for Health Research (NZHR) was established in November 2015 to bring about increased investment in health research from government, industry and philanthropy. We believe that health research is the catalyst for bringing about the best possible health for all New Zealanders, and we're on a mission to increase investment in health research as an essential and embedded component of all parts of New Zealand's health system, responsive to New Zealanders' unique health imperatives. We are therefore committed to ensuring that health research is carried out as efficiently as possible, that results of health research are translated into policy, practice and individual decision making, and for there to be a level of investment in health research to enable this to happen as optimally as possible.

Recommendations

The HSNO Amendment Bill be amended to facilitate the efficient conduct of clinical research by:

1. exempting genetic modification of donor cells prior to reinsertion into a patient from section 42 of the HSNO Act (1996), and introducing a fit for purpose regulatory framework based on the approach adopted by the Australian Office of the Gene Technology Regulator

2. providing clarity as to the sort of review which would be required for a GMO medicine.

3. including statutory timelines for the pre-application process, in addition to those already in the HSNO Act for the application process itself.

Overview

Despite references in the HSNO Act (1966) to "rapid assessment" the reality is that the process of gaining approval to develop and use genetically modified organisms (GMOs) typically takes months. This often means that clinical research organisations which are developing new GMO based therapies for hitherto untreatable or hard to treat conditions, and who have secured the funding and specialised research staff to undertake the work, find themselves in the position of having to "cool their heels" awaiting the outcome of their applications.

This delays opportunities for clinical trials patients to potentially benefit from, and in some cases have their lives saved by, the new therapy. It can also be a waste of resources as

[1] Hazardous Substances and New Organisms (Hazardous Substances Assessments) Amendment Bill 54-1 (2021), Government Bill Contents - New Zealand Legislation

research staff continue to be paid while awaiting the outcome of the application, but without actually undertaking the research they were hired to do, risking funding running out before the research has been completed.

Such delays could be safely mitigated if the HSNO Amendment Bill were to be amended in respect of both genetic modification of donor cells prior to reinsertion into a patient (such as for CAR T therapy), and genetic modification of foreign organisms into a therapeutic product for human use (such as for vaccine development).

Submission

Genetic modification of donor cells prior to reinsertion into a patient

The genetic modification of donor cells prior to reinsertion into a patient is covered by Section 42 of the Hazardous Substances and New Organisms Act (1996)[2], ***rapid assessment of adverse effects for development of genetically modified organisms***, which states:

(1) Where the Authority receives an application under section 40 to develop a genetically modified organism in containment, the Authority may make a rapid assessment of the adverse effects of developing that organism.

(2) If the Authority is satisfied that any development meets the criteria for a low-risk genetic modification specified in regulations made under section 41, the Authority may approve the application and impose such controls providing for each of the matters specified in Schedule 3 as the Authority thinks fit.

Because of the often months long processes associated with the granting of such approvals NZHR recommends that the HSNO Amendment Bill amends Section 42 of the HSNO Act so that genetic modification of donor cells prior to reinsertion into a patient becomes exempted.

One way to do this would be to adopt the approach of the Australian Office of the Gene Technology Regulator (OGTR), which represents a simpler - yet still controlled - process for GMOs (like CAR T-cells for example).

The OGTR states that introduction of a GMO into a person is a licensable dealing, according to Schedule 3 Part 3.1 (n) of the Australian Gene Technology Regulations 2001, unless the GMO meets the exclusion specified in that clause. This clause is as follows (with exclusions highlighted in red):

(n) a dealing involving the intentional introduction of a GMO into a human being, unless the GMO:

(i) is a human somatic cell; and

(ii) cannot secrete or produce infectious agents as a result of the genetic modification; and

[2] https://www.legislation.govt.nz/act/public/1996/0030/latest/DLM381222.html#DLM382998

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(iii) if it was generated using viral vectors:

(a) has been tested for the presence of viruses likely to recombine with the genetically modified nucleic acid in the somatic cells; and

(b) the testing did not detect a virus mentioned in sub-subparagraph (A); and

(c) the viral vector used to generate the GMO as part of a previous dealing is no longer present in the somatic cells;

If the product meets all of the requirements for exclusion specified in this clause then:

- The dealings with the modified cells prior to introduction into a patient are exempt dealings. The only legislative requirement for exempt dealings is no intentional release into the environment – as per regulation 6, and no approval from the Gene Technology Regulator (the Regulator) is required. (Please see the OGTR's Guidance Notes for the Containment of Exempt Dealings for reference); and
- Once the cells are introduced into the patient they are no longer covered by the Gene Technology Act 2000 , as the definition of a GMO in Part 2 Division 2 clause 10 of the Act specifically excludes people who have undergone somatic cell gene therapy from being considered GMOs.

NZHR therefore recommends that the HSNO Amendment Bill be amended by exempting genetic modification of donor cells prior to reinsertion into a patient from section 42 of the HSNO Act (1996), and introducing a fit for purpose regulatory framework based on the approach adopted by the Australian Office of the Gene Technology Regulator

Genetic modification of foreign organisms into a therapeutic product for human use

In the experience of NZHR members genetic modification of foreign organisms into a therapeutic product for human use (such as for vaccine development) have been considered under section 34 of the HSNO Act.

The significant delays in getting clinical trials underway under this section have been partly attributed to unclear EPA criteria for determining the type of assessment that would be required for this class of GMO. This is not clear from information provided on the EPA website, and indeed one NZHR member has reported that even the EPA itself was not able to provide a firm commitment in this regard.

Significant delays have also been attributed to the length of the pre-application process as set out by the EPA here: www.epa.govt.nz/industry-areas/new-organisms/applying-for-approval/the-application-process. We note that the Australian OGTR has addressed this problem by introducing statutory timelines for the pre-application process. Furthermore, in Australia there is a requirement for sponsors to utilise the review of an Institutional Biosafety Committee prior to OGTR submission. This ensures the quality of the submission thereby eliminating unnecessary review time for the OGTR. Up front risks are identified and issues discussed with the sponsor prior to the submission, thereby setting the pathway for guaranteed compliance.

NZHR therefore recommends that the HSNO Amendment Bill be amended to:

- Provide clarity as to the sort of review would be required for a GMO medicine.

- Include statutory timelines for the pre-application process, in addition to those already in the HSNO Act for the application process itself.

NZHR constituency

In developing this submission we have consulted with our Platinum to Bronze partners and members as set out below (and from whom we derive 100% of our funding).

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NZHR partners and members

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