Introduction

Animals are often required for vaccine development and quality control. Intravacc recognizes the need for reducing the number of animals as well as for improving the welfare of animals still being used.

To achieve this aim, Intravacc performs targeted studies with the goal to Replace, Reduce and Refine animal use, the so-called Three Rs, with a main focus on statutory required animal testing for vaccine lot release.

A shift in vaccine control testing

Vaccine lot release testing is traditionally based upon animal models. However, these models are nowadays challenged for reasons of ethics, economics and science. Therefore there is a general interest in models that move away from animal use.

3Rs

Although animal use in vaccine research and testing cannot always be avoided, much can be done in terms of Replacement, Reduction and Refinement.

- Replacement aims for using non-animal methods, such as cell-culture models or physico-chemical techniques.
- Reduction aims for reducing numbers of animals without violating the relevance of the animal model for its purpose.
- Refinement refers to reducing pain and distress in animal studies and/or improving animal welfare such as by improving housing conditions.
3Rs at Intravacc

Intravacc, in continuation of its predecessors: National Institute for Public Health and the Environment (RIVM) and Netherlands Vaccine Institute (NVI), follows an active and overall 3R’s policy. With our consistency approach, that aims to replace animal use in vaccine lot release testing, we have developed a new paradigm in vaccine quality control. Several of our running studies have their focus on this new paradigm. Next, we continuously work on improving housing conditions and optimizing animal models in terms of reduction and refinement.

Successful examples of 3Rs at Intravacc

Examples of our 3R achievements are:

- Vero cell tests replacing the specific toxicity test in guinea pigs (diphtheria vaccine)
- Serological tests instead of challenge procedures in potency testing (diphtheria and tetanus vaccine)
- The use of humane endpoints to replace lethal/severe clinical endpoints (all vaccines).

Several models developed in Bilthoven have been accepted by the European Pharmacopoeia which subsequently resulted in substantial reduction and refinement in animal use.

Partnering opportunities

Being on the forefront of 3Rs development and using the latest knowledge and the newest techniques, we partner and can partner with:

- Other (inter)national organizations and institutions, including regulatory bodies, guideline organizations and academia
- The industry- such as those that are member of the European Partnership for Alternative approaches to Animal Testing (EPAA)
- Working groups and consortia.

Intravacc

The Institute for Translational Vaccinology is an experienced, not-for-profit R&D organization. With our unique capabilities and infrastructure, we are able to optimize vaccines, vaccine processes and vaccine technologies. Our aim is to increase equality in access to vaccines throughout the world in order to contribute to public health. We achieve this by transferring our knowledge and technologies to public and private partners worldwide and collaborative R&D. A team of 150 professionals is at your disposal at Science Park Bilthoven in The Netherlands.

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