

# Animal Welfare Report 2020

Association of research-based  
pharmaceutical companies

# Content

1	Foreword
2	Fighting Covid-19 together
8	Ten years of the Animal Welfare Charter
14	10-point Animal Welfare Charter
16	Severity degree 3 experiments
20	Promotion of the 3Rs
26	Working groups and projects
34	Recommended websites

# Foreword

It is exactly ten years ago that the research-based pharmaceutical industry in Switzerland committed to a joint charter for the protection of laboratory animals. With the signing of the Animal Welfare Charter in 2010, the member companies of Interpharma underlined their ethical responsibility in animal experiments both at home and abroad, thus setting international standards. The 3Rs – Refine, Reduce and Replace – remain the guiding principles of the 10-point charter to this day and hence also of our members' activities. This report looks back at the last ten years of animal welfare and shows the ongoing projects and advances in the context of the charter.

In research, we are focusing more and more on alternative methods which help us to find promising drug candidates more quickly and with greater accuracy. We are doing our utmost to replace animal experiments increasingly with alternatives such as in vitro techniques or computer simulations, but it is unfortunately not yet possible to avoid them completely. The Covid-19 crisis presents huge challenges to healthcare systems worldwide. Research-based pharmaceutical companies responded immediately and are collaborating across borders to develop new vaccines and medicines. With accelerated procedures, the development, the production and the regulatory approval of new products are possible in record time. Yet the safety of patients must always have top priority. To ensure that patient safety can be guaranteed, it is still absolutely essential that medicines are tested in animals to a limited extent. Only in this way can the kind of complex life processes that occur in humans be comprehended. But, true to the principles of the 3Rs, researchbased companies only fall back on animal experiments when all other non-clinical approaches have been exhausted.



**Jörg-Michael Rupp**  
President Interpharma and  
Head of International 7 Areas, Roche

Without testing in animals, the development of new medicines and vaccines would not be possible. Initiatives that call for a ban or partial ban on animal experiments thus jeopardize not only the supply of future medicines, but also the access of patients to these medicines. They also threaten Switzerland's position as a research hub. The crisis has shown us how important an innovative Swiss research and pharma hub is. This needs to be strengthened further according to the motto "control instead of bans". Following this principle, we take our ethical responsibilities seriously and, as a research-based company, consistently live up to them in keeping with the 3Rs – Refine, Reduce and Replace. In this way, we make an important contribution to the further improvement of animal welfare.

# Fighting Covid-19 together

With its cross-border collaboration, the research-based pharmaceutical industry is making an unparalleled effort to combat the Covid-19 crisis. And animal experiments form a part of this effort that is indispensable for the development of new medicines and vaccines.

# When will pharma research come up with an effective medicine or vaccine against Covid-19?

## **Race against time**

The outbreak of the Covid-19 pandemic presents huge challenges to healthcare systems worldwide and hence also to the research-based pharmaceutical industry. Probably the most frequently asked question in the past few months is: when will pharma research come up with an effective medicine or vaccine against Covid-19? It is difficult to provide an answer to this, but one thing is already clear: never before have pharmaceutical companies and academic research institutions responded so quickly to a new pathogen as they have to SARS-CoV-2. In this race against time, they are joining together across borders and making an unparalleled effort to manage this crisis, whether in research and development or in production and securing the supply of diagnostics and medicines to the population.

## **Pooling expertise and resources**

Switzerland's research-based pharmaceutical companies are also actively participating in the effort to combat Covid-19 and are involved in numerous international projects and cooperative ventures. Right at the start of the pandemic, for example, many members of Interpharma joined with the Bill & Melinda Gates Foundation to establish a consortium, co-chaired by Novartis CEO Vas Narasimhan and Bill Gates, with the aim of

pooling their expertise and resources and accelerating the development and production of vaccines, diagnostics and medicines. In the field of diagnostics, Roche was one of the first companies to make a highly automated coronavirus test available as early as mid-March, which allows up to 4000 samples to be tested for the SARS-CoV-2 virus within 24 hours. In May, Roche was granted US approval for an antibody test and rapidly stepped up production capacity to many tens of millions of units in order to supply healthcare systems worldwide.

## **Research into existing substances**

Further research into substances that are already known is an important pillar in the search for active substances. Hundreds of clinical trials are currently under way around the world, in which existing medicines are being studied for their efficacy against the SARS-CoV-2 virus. The member companies of Interpharma are also involved in this effort, for example in the testing of older antimalarial or HIV medicines. A major success has been achieved by Gilead: the medicine remdesivir, which was originally intended for the treatment of Ebola, is the first approved antiviral therapy that significantly reduces the recovery time in Covid-19 patients.

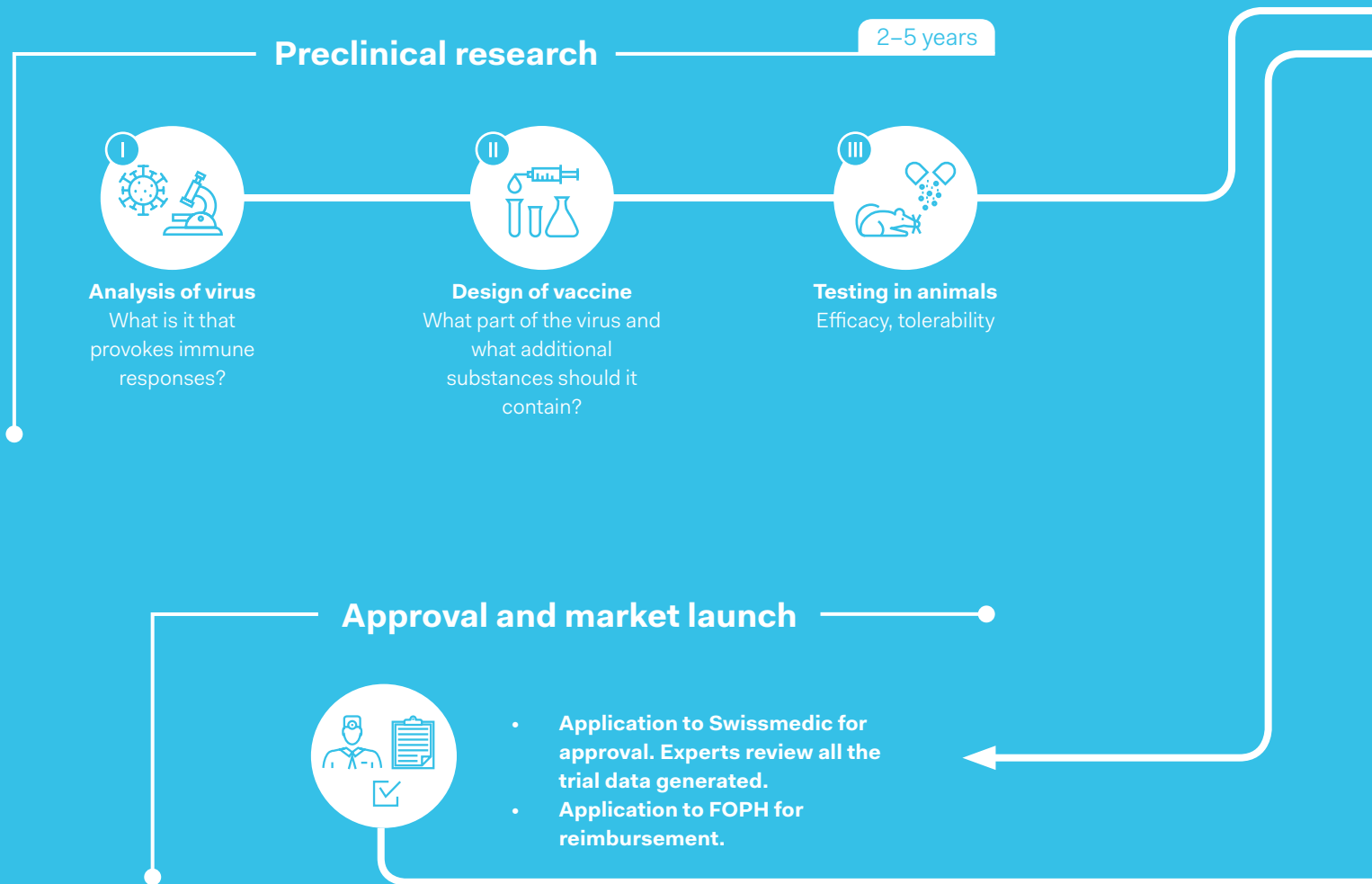
*Continuation on page 6 >>>*







**“The pharmaceutical industry will not rest until effective medicines and vaccines have been developed to combat Covid-19.”**

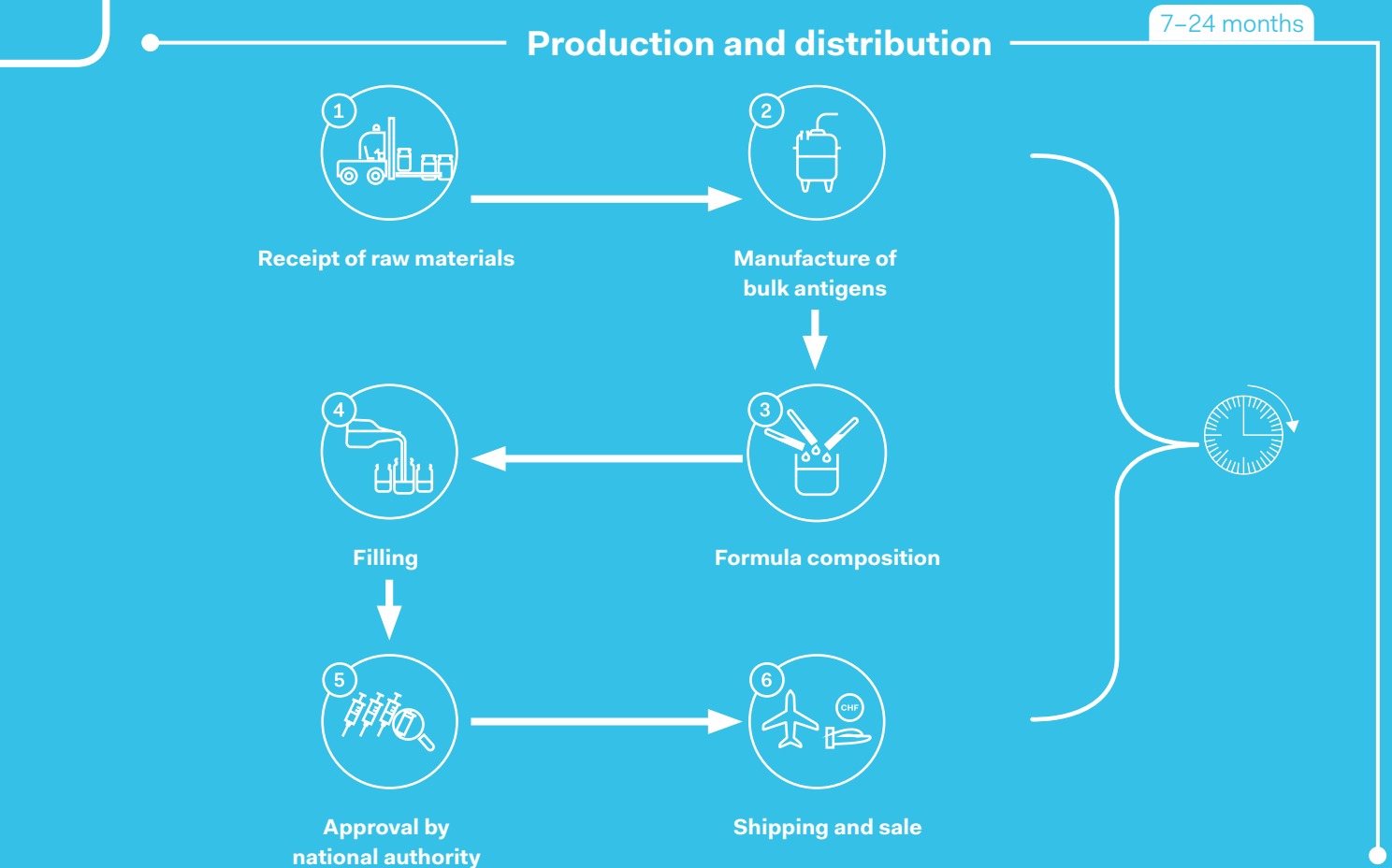
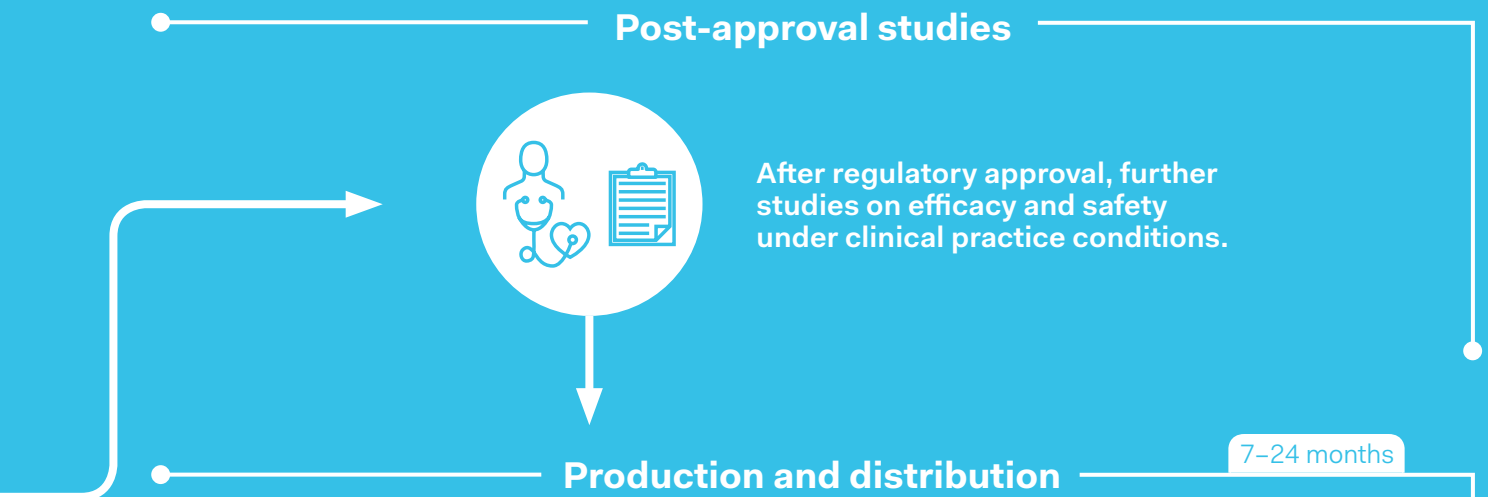
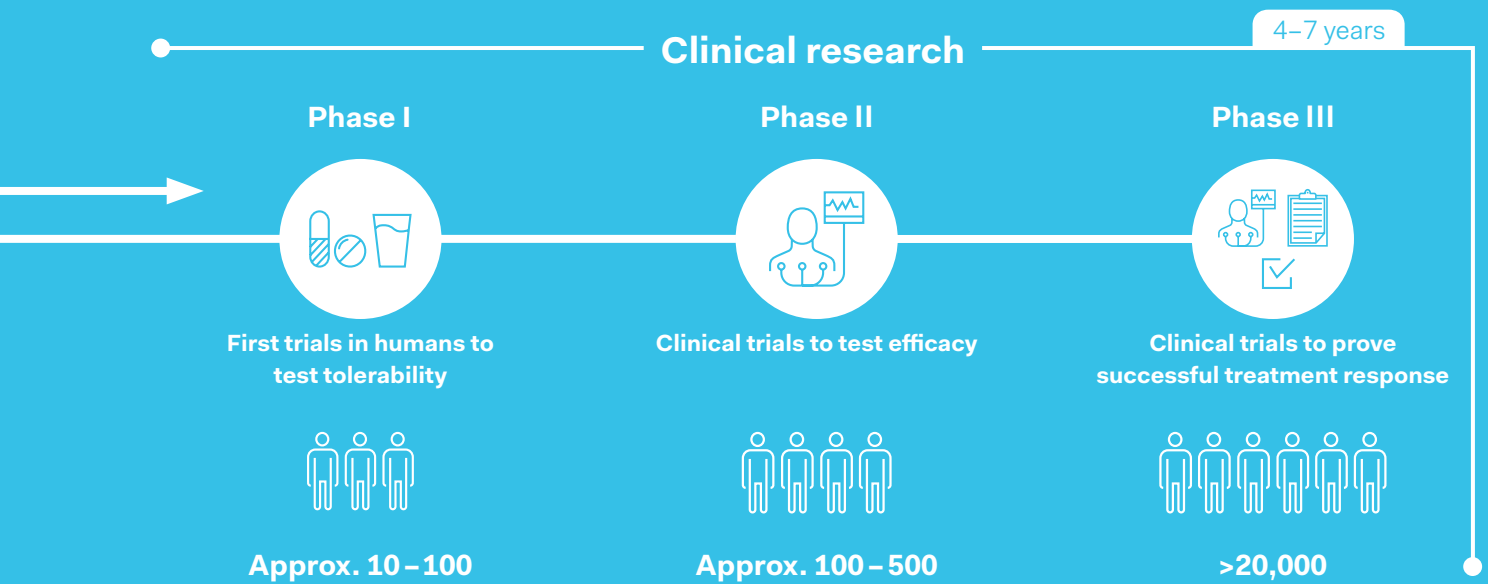
**Dr. René Buholzer**  
CEO of Interpharma

# How is a vaccine developed?



## Differences in the development of a medicine and a vaccine

	Medicines	Vaccines
 <b>Composition</b>	<b>Active substances</b> produced using chemical synthesis or biotechnology	<b>Complex active substance compounds</b> produced using biotechnology
 <b>Clinical trials</b>	Clinical trials with <b>patients</b>	<b>Clinical trials with healthy subjects</b>
 <b>Regulatory approval</b>	Most procedures <b>harmonized</b> with FDA/EMA standards	Process only <b>partially harmonized</b> with FDA/EMA standards
 <b>Reimbursement</b>	Reimbursement process involving <b>a</b> committee (EAK)	Reimbursement process involving <b>three</b> committees (EKIF, ELGK, EAK)



### **Vaccine development in record time**

As a rule, it takes between 6 and 15 years before a new vaccine ready for the market becomes available. Vaccine development is highly a complex process (see diagram on p. 4–5). But experts estimate that this could be reduced to between 12 and 18 months in the fight against Covid-19. How is it possible to develop such a vaccine in record time? The crucial factor here is the unique collaboration of the pharma industry and partners from the academic world in global alliances and cross-company projects. Together the companies quickly mobilized additional research and production capacity and are also able to combine several clinical trial phases. As a result, at the end of July, the World Health Organization already counted 165 vaccine candidates (139 in preclinical and 26 in clinical trials). These also include several projects of Interpharma members: Johnson & Johnson started a phase 1 trial with its company Janssen and its vaccines site in Bern as early as July.

Highly promising vaccine candidates are also being worked on by AstraZeneca together with the University of Oxford, by Sanofi and GSK, Merck & Co. and also Pfizer in cooperation with the German biotech company BioNTech. A further important aspect of this process is the cooperation with governments and authorities. Further time can be gained in the fight against Covid-19 through faster marketing authorization.

### **Why animal experiments are necessary**

Despite the accelerated development, production and process, the safety of new medicines and vaccines for patients remains of utmost priority. To make sure they are safe, animal experiments are indispensable. These allow the kind of life processes that occur in humans to be comprehended. Drug candidates are tested for safety and efficacy in preclinical studies. Toxicologists analyse them for their toxicity in order, for example, to exclude the possibility of substances causing diseases or damaging the DNA. Computer simulations are used for these studies, as are bacteria, cell and tissue cultures or isolated organs.

Nevertheless, tests with rats, mice and non-rodents are still necessary to investigate interactions in the live organism. Only in this way is it possible to determine, for example, whether a substance remains in the body long enough to achieve the desired medical effect. These standards in the testing of active substances in the animal guarantee a high degree of safety for patients. But it must be pointed out that researchers only fall back on animal experiments when they are required by law on the one hand and all other approaches have been exhausted on the other.

### **Guaranteeing supply security**

Without animal experiments, it would simply not be possible to develop new medicines and vaccines and thus cope with the Covid-19 pandemic. The initiative “Yes to a ban on experiments in animals and humans” (see excursus on p. 7) therefore jeopardizes not only Switzerland's position as a research hub, but also the safety of patients and their access to vaccines and medicines. Only with open framework conditions is it possible for the research-based pharma industry in Switzerland to participate in international research cooperation and develop effective medicines and vaccines to combat the SARS-CoV-2 virus. The same applies to the supply of medicines and diagnostics for other life-threatening diseases on which countless people in Switzerland also depend in this crisis. It can only be secured by maintaining global supply chains. For the member companies of Interpharma, supply security has utmost priority.



## "The initiative is tantamount to a de facto ban on research."

### What is the initiative seeking to achieve?

The initiative demands an unconditional ban on animal experiments and research in humans. It further calls for a complete ban on trading and importing of all products that have been wholly or partly developed using animal experiments and trials in patients.

### What would a yes vote on the initiative mean for the research-based pharmaceutical industry?

The initiative is tantamount to a de facto ban on research. Basic research, clinical trials and drug research for humans and animals would no longer be possible. The biomedical research of universities, hospitals and the pharma industry would move abroad and Switzerland would lose its most important resource, namely research and innovation. The consequence would be the loss of Switzerland's leading position as a research and development hub – across all sectors and for years.

### What would acceptance of the initiative mean for patients?

The ban on trading in products that have been developed using research in humans and animals would mean that the supply of medicines in Switzerland could no longer be guaranteed. Patients would be denied access to innovative and potentially life-saving therapies, because they could no longer be approved and allowed on the market. But the ban on trading in these products would also result in the import and export of products

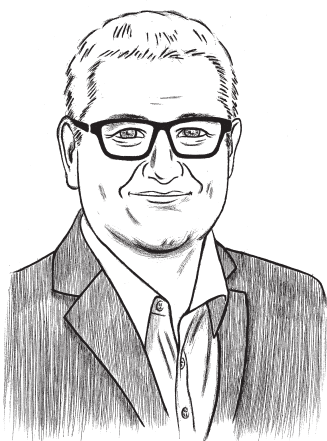
from other sectors being prohibited, for example in the food industry or agriculture. Such a ban on trade is incompatible with international obligations and agreements, for instance with the European Union.

### What specific consequences would a yes vote have on the fight to combat Covid-19?

The development of a vaccine in Switzerland would be banned, because drug candidates have to be tested in humans and animals. Importing a vaccine produced in another country would also be prohibited. Switzerland would thus be the only country in the world with no access to a vaccine against the SARS-CoV-2 virus.

### What is Interpharma's position?

Interpharma supports the Federal Council in its dispatch rejecting the initiative without a direct or indirect counterproposal. In principle, the member companies share the concerns of those behind the initiative to avoid the suffering of animals and to protect humans in research. But the initiative clearly goes too far. Humans and animals today are already protected by the constitution, and Switzerland has one of the strictest animal welfare laws in the world. There is no need for an amendment to the law.



"The initiative for a research ban would put a stop to basic research, clinical trials and drug research for humans and animals."

**Yves Weidmann**  
Head of Governmental Affairs Interpharma

# Setting standards – ten years of the Animal Welfare Charter

Ten years ago, research-based pharmaceutical companies in Switzerland committed to the responsible handling of animals in research with the 10-point Animal Welfare Charter, which set the ball rolling not only in Switzerland but also internationally.

# Animal experiments only when they are indispensable for scientific, ethical and regulatory reasons, and there is no alternative

## Improving quality of life for humans and animals

The mission of research-based pharmaceutical companies in Switzerland is to develop new, life-enhancing or, whenever possible, curative medicines for patients suffering from serious and complex diseases. At the same time, the safety of medicines must also be guaranteed. It takes many years before a new drug reaches this stage and is thus ready for use in routine medical practice. It is a long and complex path, and achieving the goals requires meticulous work and interdisciplinary expertise. And at various stages of this development process, research in animals is still indispensable. Not only is basic research dependent on animal models, but researchers in the preclinical and clinical development phase of a medicine also work with animals to rule out, for example, malformations in the foetus or carcinogenic effects of the product. The use of laboratory animals provides important insights into the development and mechanisms of serious diseases and ensures that medicines are safe, effective and well-tolerated. Without this important foundation of research and development, society and patients would be deprived of most of the medicines and treatments which they benefit from today. However, research-based pharmaceutical companies in Switzerland are aware that they have a legal and ethical obligation to apply the highest standards when using animals in research.

## Making sure animals are handled responsibly

The Animal Welfare Charter of Interpharma was launched ten years ago. With the signing of the charter, the research-based pharmaceutical companies in Switzerland underlined their ethical responsibility in animal experiments both at home and abroad. The guiding principles of the charter are the 3Rs – Refine, Reduce and Replace – committing the industry to replace as many animal experiments as possible with alternative methods, to reduce the number of laboratory animals used and to refine the methods so that any stress or constraint is kept to a minimum. When the industry launched the charter in 2010, Christine Egerszegi-Obrist, former member of the Council of States and President of the 3Rs Research Foundation Switzerland, saw this step as an acknowledgement of the efforts and the ambition to establish high standards in animal experiments worldwide as far as possible. She confirmed that, for the industry, it was not about following the minimum legal requirements, but about leading on the world stage by example.



“We will also promote our guiding principles of the charter, the 3Rs of Replace, Reduce and Refine, consistently around the world over the next ten years.”

**Dr. Birgit Ledermann**  
Novartis 3Rs Leader,  
Novartis Institutes for BioMedical Research

# Tasks and aims of the Swiss 3Rs Competence Centre (3RCC)

- Promotion of high-quality research for the benefit of animals through financial support for outstanding scientific projects in the field of the 3Rs
- Development of an educational strategy for the 3Rs, adapted to different levels and professional groups
- Establishment of a network and a communication platform for stakeholders and interested parties with up-to-date information on the principles of the 3Rs and alternative methods

## From 3Rs Research Foundation to 3Rs Competence Centre

The research-based pharmaceutical companies in Switzerland were setting standards and pointing the way even before the Animal Welfare Charter in 2010. The industry was already substantially involved back in 1987, when the 3Rs Research Foundation Switzerland was established. This foundation, a collaborative effort by the parliamentary group for laboratory animal issues, the fund for research without laboratory animals and Interpharma, under the supervision of the Federal Department of Home Affairs, promoted research into better methods and alternatives to animal experiments for more than three decades. Between 1987 and 2018, the foundation sponsored 146 research projects on the implementation and dissemination of the 3Rs principles with contributions amounting to 19.6 million francs. The funds were provided equally by the federal government and the industry. Today, this effort is being continued and further boosted by the Swiss 3Rs Competence Centre (3RCC), which was founded in 2018. The 3RCC brings together academic institutions, industry, regulatory authorities and animal welfare to promote projects that have a clear impact on the replacement, reduction and refinement of animal experiments and offer scientific and ethical benefits compared with existing methods.

## Involvement of academic institutions – working together internationally

The pharma industry's Animal Welfare Charter set milestones that academic researchers also saw as pointing the way ahead. The charter substantially influenced the wording of the principles and objectives of the Basel Declaration – a call by academic institutions for more trust, transparency and communication in animal research. The Basel Declaration was adopted on 29 November 2010 during the first Basel conference "Research at a crossroads". Like the Declaration of Helsinki, which sets out the ethical principles for clinical research in humans, the Basel Declaration Society aims to help ensure that ethical principles such as the 3Rs are applied worldwide in research involving animal experiments. The Basel Declaration was initially signed by more than 60 academic researchers from Switzerland, the UK, France and Sweden. In the meantime, more than 4700 representatives of academic research from 65 countries have signed up to it. Together, the Animal Welfare Charter and the Basel Declaration lay down an important marker for the promotion of laboratory animal welfare in industrial and academic biomedical research. The international spread of commitments by industry and academics is particularly important because in many other countries around the world, unlike in Switzerland and Europe, research in animals is inadequately

# Milestones in laboratory animal welfare through the principles of the 3Rs



20

million francs in funding



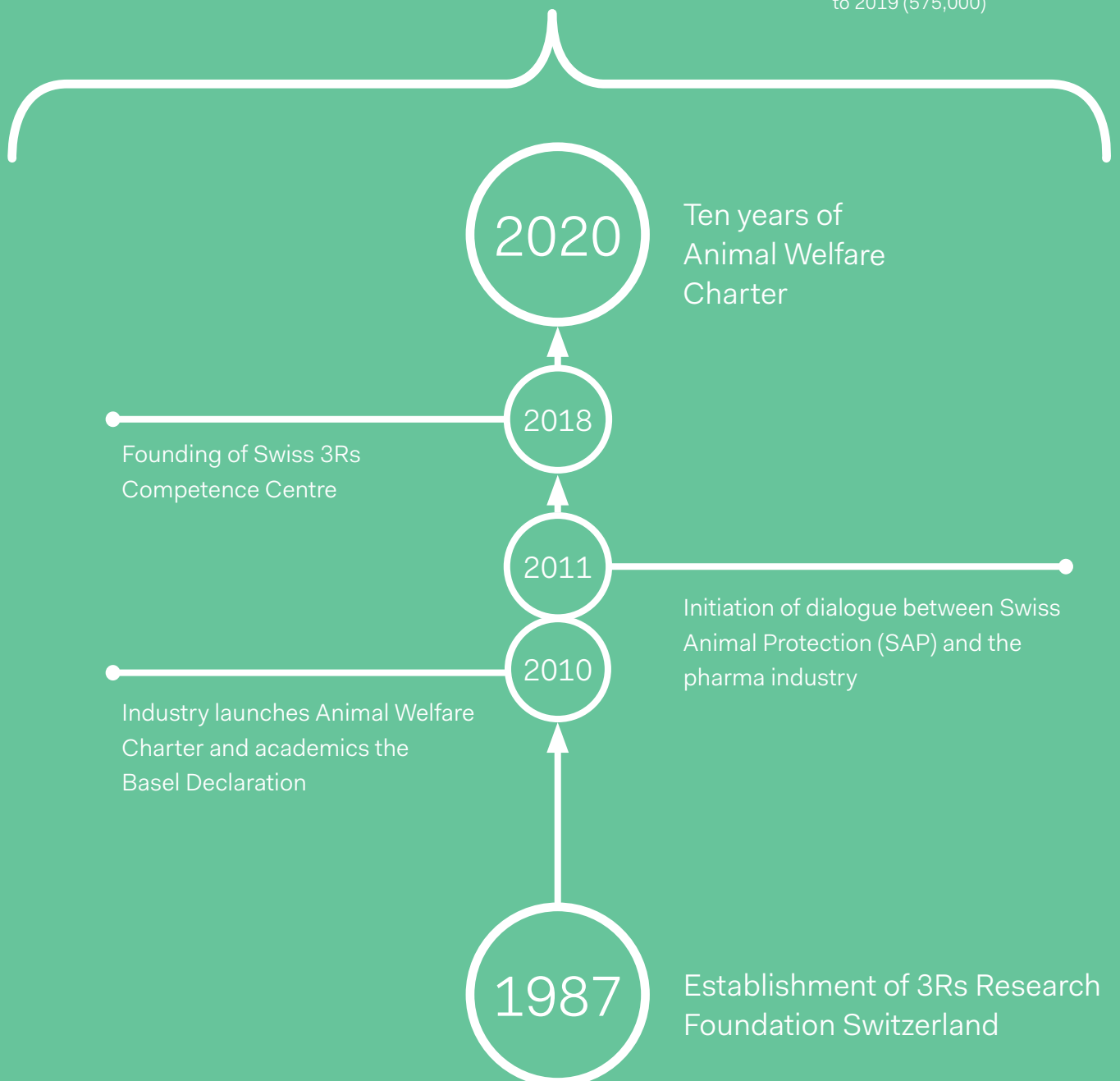
150

research projects sponsored



$\frac{3}{4}$

fewer laboratory animals  
in Switzerland  
from 1983 (2 million)  
to 2019 (575,000)



# Reversal of trend in animal experiments

In 1993, voters and cantons both rejected the initiative of Swiss Animal Protection "for a drastic and gradual restriction of animal experiments (do away with animal experiments!)" with a 56% majority of votes against. The initiative demanded a fundamental ban on animal experiments. Only experiments in legally defined exceptional circumstances would have been permitted. Both the Federal Council and the Parliament rejected the initiative. As a counterproposal, the Animal Welfare Act was tightened up: the federal authorities, the universities and the industry committed to research according to the 3Rs. As a result, despite increasing research activity, the total number of laboratory animals used was reduced from 2 million in 1983 to less than 575,000 in 2019.

regulated by law and, in some cases, not regulated at all.

## Dialogue with interest groups and the public

With the charter, the annual Animal Welfare Report – which documents the numerous projects and initiatives to improve animal welfare in research – and engagement in the framework of the competence centre 3RCC, research-based pharmaceutical companies in Switzerland have opened themselves to dialogue with the public and stakeholders. For example, the regular exchange of views between representatives of Swiss Animal Protection (SAP) and industry has been firmly established since 2011. Transparent communications and the education of cross-disciplinary working groups and networks signal the common will of all actors and supports the process for continual and sustainable improvement in the situation of laboratory animals.

## Promising alternatives

What do the next ten years of the Animal Welfare Charter promise? New digital technologies have huge potential for the further reduction, refinement and replacement of animal experiments. It is already possible to investigate a lot of questions concerning new active substances today using computer-based simulation models. Likewise promising are in vitro methods such as organ-on-a-chip technology, in which miniature organs are artificially recreated from stem cells and placed on a small chip to model the inner workings of the human body. With the aid of these chips, drug candidates can be tested for efficacy and toxicity at an early stage. The technology is still in its infancy, so it is only possible at present to bring four or five organs together on one chip – a fraction of the human body. In order for this approach to be used in the future as an alternative in drug development, further progress therefore needs to be made in digital technologies. But the research interest is considerable. The search for alternative methods is worthwhile not only for the welfare of laboratory animals, but also for the companies, because these alternatives are usually less cost-intensive and easier to standardize than animal models. Increasingly innovative digital systems are also being used in the housing of laboratory animals to improve the welfare of the animals and at the same time to deliver more comprehensive and more conclusive data for the researchers. Even though animal experiments will not be replaced in the foreseeable future, these offer good prospects for animal welfare and scientific progress.

# “We must intensify our dialogue with the public.”

## **Why did research-based pharmaceutical companies in Switzerland decide ten years ago to sign Interpharma's Animal Welfare Charter?**

The use of animals in research is a very emotional issue. Many people criticize research with animals, but at the same time want certainty that new medicines meet the highest standards of quality, efficacy and safety. While it is customary for pharmaceutical companies to introduce internal standards for animal research in line with the relevant national standards and other norms, the unique thing about Interpharma's charter is that these standards were mutually agreed throughout the industry in the whole of Switzerland. The ten articles of the Animal Welfare Charter were developed after the establishment of four key elements: a) an open and constructive dialogue between stakeholders, b) the promotion of general and vocational training, c) the promotion of all aspects of the 3Rs and d) testing and certification. The commitments of the charter apply to Interpharma member companies and to all external research and development partners. This is especially important because animal welfare standards vary from country to country, and the charter guarantees identical high standards regardless of where the research with animals takes place.

## **What has been the biggest personal highlight or most positive development for you in the last ten years regarding the charter?**

One of the most important highlights for me is the open and constructive dialogue between stakeholders. Interpharma has cultivated a regular, constructive dialogue with the Swiss Animal Protection (SAP) organization and the University of Zurich for many years. This dialogue has led to a mutual understanding between the organizations involved. A further highlight of Interpharma are the joint audits of our external partners. These joint efforts help us improve to animal welfare and ensure that the 3Rs (reduction of animal numbers, refinement of animal experiments and replacement of animal experiments with alternative methods) are applied by our partners. The audits reduce the workload and the amount of time required both for member companies and for external partners and are therefore highly appreciated.

## **How important is the charter internationally?**

The charter has attracted international attention, because the pharma industry in Switzerland has harmonized its animal welfare standards and conducted joint audits for the first time. The charter and the concept of joint audits serve as an example, and both have been presented at various conferences and meetings in various countries in recent years.

## **What challenges do you see for the next ten years of the charter?**

Biomedical research, including in the pharmaceutical industry, is meeting with ever greater resistance to the use of animals in research. While we have broadened our internal dialogue on the need for the use of animals in the discovery and validation of new medicines, we need to step up our dialogue with external stakeholders, especially with the public. We must speak more often and more openly about the importance of this research, explaining that animals may only be used in research if there are no recognized alternatives, and also about the stringent legal standards and the engagement of people who work with the animals.

In addition, we need to keep promoting the implementation of the 3Rs – reduction, refinement and replacement of animal research. Application of the 3Rs reduces not only the number of animals used in research, but also the variability of the data and thereby also improves the quality of the research with animals. Interpharma provides financial support to the Swiss 3Rs Competence Centre and is represented on its management boards. A further objective is to continue our joint audits for the assessment of our external partners.

## **Is it realistic or conceivable that drug development could one day do without animal experiments altogether?**

Although the pharmaceutical industry is making huge efforts to replace the use of animals in research with alternative methods where possible, the development of new and safe medicines without the use of animals will not be possible within the foreseeable future.

# In the 10-point Animal Welfare Charter, the Interpharma member companies commit to:

1

apply and actively promote the 3R s (reduction, refinement and replacement of animal studies), especially with regard to the research, development and implementation of methods and techniques which allow further replacement of animal studies, a reduction in the number of animals used or alleviation of the pain and stress of laboratory animals.

2

ensure high-quality and state-of-the-art housing and care conditions for our laboratory animals and strive to continuously improve these conditions.

3

develop and foster education and training for all our employees and associates who work with animals.

4

contractually oblige external partners to comply with our high standards of animal welfare when they conduct animal studies for us or supply us with animals.

5

apply vigorous internal auditing systems, which ensure compliance with the animal welfare standards agreed upon.



6

joint efforts in auditing our external partners on animal welfare standards and compliance on a global level.

7

promote, in addition to regular authority inspections, the development of external, independent assessment programmes of our animal welfare standards and facilities on a global level.

8

promote the validation and regulatory acceptance of methods which are suited to the replacement, reduction or refinement of animal studies.

The 10-point Animal Welfare Charter was initiated in 2010 by Interpharma member companies. The aim of the charter is continually to improve to the protection and well-being of laboratory animals during breeding, in the housing facility and during the necessary animal experiments.

9

contribute to a continuous, open and constructive dialogue on animal research and welfare with the public at large as well as with authorities, policymakers and other interested stakeholders.

10

report annually on the progress made with regard to this charter.

# Severity degree 3 experiments

Animal welfare legislation in Switzerland is one of the strictest worldwide. Animal experiments may only be conducted if no alternatives are available.

# A ban on animal experiments of severity grade 3 would have far-reaching consequences.

## **Fewer than 3.5% of all animal experiments involve severe constraints**

The pharmaceutical industry, researchers, laboratory animal specialists, the federal authorities, animal welfare groups and politicians have been championing the application of the 3Rs for more than 30 years. The consistent promotion of the 3Rs has played a significant part in helping to lower the number of laboratory animals used from around 2 million in 1983 to fewer than 575,000 animals in 2019 and steadily reduce the constraint on the animals. Fewer than 3.5% of all animal experiments were classified under severity degree 3 in 2019. The pharma industry is committed to systematically continuing its ongoing efforts to reduce animal experiments to the absolute minimum.

## **Research bans have negative consequences for patients**

Even though severely stressful animal experiments in the category of severity degree 3 account for only a small proportion of research with animals, a ban on these experiments would have far-reaching negative consequences. It would not only jeopardize Switzerland's position as a research hub, but would also make it impossible to develop new and more effective therapies for serious diseases such as cancer, rheumatoid arthritis or multiple sclerosis. Particularly animal models used for research into new therapeutic approaches for such serious diseases

often fall under the category of severity degree 3. A research ban would therefore not only impact researchers in universities and the pharmaceutical industry, but above all also patients who depend on more effective therapies.

## **Strict legislation protects the dignity of animals**

Switzerland has one of the strictest animal welfare laws worldwide. Animal experiments may only be conducted if there are no recognized alternatives. Moreover, in the mandatory ethical trade-off between the benefits to be expected from the research and the constraint on the animals, the scales must tip in favour of the benefits; otherwise, an experiment may not be carried out. The well-being and the dignity of the animal are thus protected by the law. Most questions can be answered with experiments involving mice or rats. In 2019, these species accounted for about 80% of all laboratory animals in Switzerland (see chart on the next page). Sheep, pigs, poultry, fish, dogs or non-human primates are used for a small proportion of experiments depending on the question concerned. Studies with non-human primates are only approved if the findings cannot be obtained using alternative methods without animals or in experiments with other animal species.



“A ban would make it impossible to develop effective new therapies for serious diseases such as cancer, rheumatoid arthritis or multiple sclerosis.”

**Nathalie Stieger**  
Head of Government Affairs  
F. Hoffmann-La Roche Ltd. and member of  
Interpharma Animal Welfare Group

# < 3.5%

Fewer than 3.5% of all animal experiments were classed as involving severe stress in 2019.

## Four severity grades

In Switzerland, animal experiments are classified into four categories of stress or constraint. Severity grade 0 means the animals are not exposed to any stress. Observation studies are an example of this. Forty percent of laboratory animals in Switzerland are used in severity grade 0 experiments. Severity grade 1 corresponds to mild stress (e.g. blood sampling) and severity grade 2 to moderate stress (e.g. surgical procedure under anaesthesia). Highly stressful animal experiments (severity grade 3) are only used for research into serious diseases (for example, multiple sclerosis or Parkinson's). In Switzerland, fewer than 3.5% of all animal experiments were classified as severity grade 3 in 2019. In these studies, almost 95% of the animals were mice or rats.

## Assignment of severity grade

A severity grade is always assigned before the start of the experiment (prospective classification). The researchers here must give the highest possible stress that could occur during an experiment. But what is crucial for the actual stress to which the animals are exposed is not the prospective classification, but how the animals react to a procedure. After the experiment, therefore, the studies are evaluated and each animal is assigned to the severity grade that it actually experienced in the experiment (retrospective classification).

If an animal dies during an experiment, the experiment is automatically classed as severity grade 3. This also applies if an animal dies a natural death in an experiment classed as severity grade 0. Since this possibility always exists, a ban on severity 3 experiments would be equivalent to a ban on all animal experiments and thus a de facto research ban.

## Withdrawal criteria defined

The law also demands that suitable withdrawal criteria already be defined when the application for approval of the animal experiment is submitted. These withdrawal criteria can be easily modified so that new findings immediately feed into the ongoing studies. In this way, excessive constraints on the animals can be avoided. In the autumn of 2018, the Federal Food Safety and Veterinary Office (FSVO) published new guidelines for the prospective assignment of severity grade to an animal experiment. In these guidelines, for example, the severity grade for experiments in brain research (neuro-degeneration as in Parkinson's) was raised from 2 to 3.

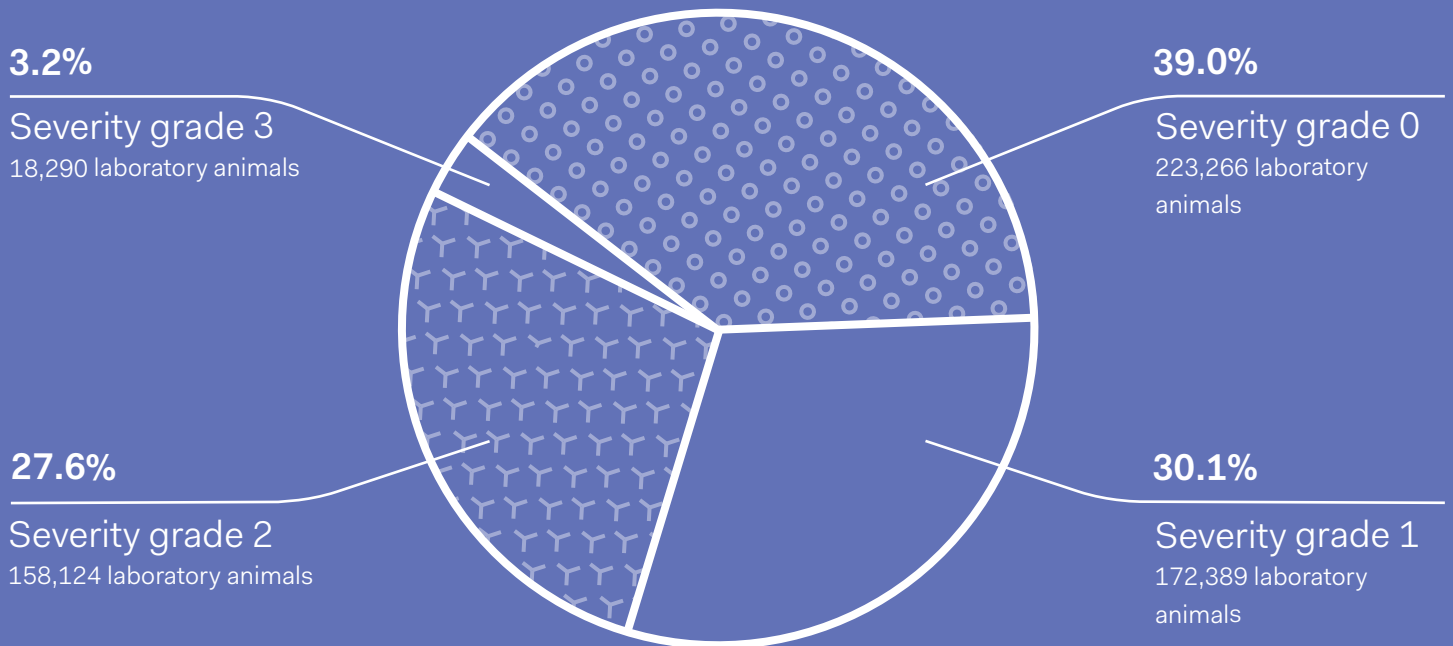
## Mainly mice and rats

Decades of research and experience have shown which animal species and study models are especially suitable for which subjects of research. Most questions can be addressed in experiments using mice and rats. In 2019, they accounted for around 80% of all laboratory animals in Switzerland. Sheep, pigs, fowl, fish, dogs, or non-human primates and other species are also used for a small percentage of studies depending on the subject of research. Studies are only conducted in non-human primates, however, if the knowledge to be gained cannot be obtained using alternative methods without animals or using studies with other animal species.

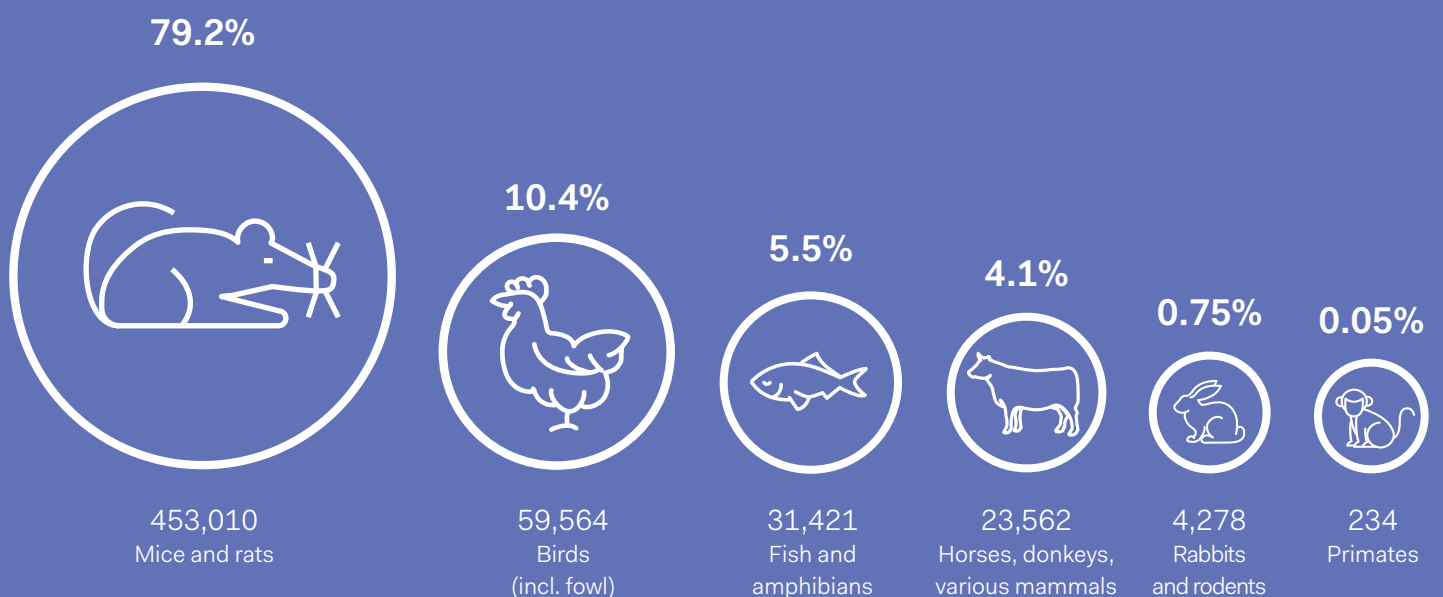
# Animal experiments in Switzerland 2019

All animal experiments that require approval are carried out by hospitals, universities, the Federal Institute of Technology, the industry, the federal and cantonal departments and others.

## Severity grades



## Animal species



# Promotion of the 3Rs

The aim of the 3Rs is to replace as many animal experiments as possible, to reduce the number of laboratory animals and to refine experiments so that any stress on the animals is kept to a minimum.

# The award of national and international 3Rs prizes fosters commitment to the welfare of laboratory animals.

## Laboratory animal husbandry

A member company of Interpharma has done some pioneering work that calls into question long-held assumptions concerning rodents' perception of light. The responsible research team identified the optimum light conditions for these laboratory animals. This allows experimental variability to be reduced, leading in turn to a higher quality of the data obtained.

---

Project name: Red-light vision in rodents

---

Charter articles: 1, 2

## Organoid culture model from human intestinal tissue

A member company of Interpharma has developed an innovative organoid culture model that is obtained from human intestinal tissue. These organoids, which come from patients, enable important aspects of the human body to be modelled outside a living organism. This system makes animal experiments redundant in several phases of drug discovery and development and allows a more accurate extrapolation to humans.

---

Project name: Human Gut-on-a-Chip

---

Charter article: 1

## New approaches to the detection of antigens

In a groundbreaking diagnostic study, researchers from a member company of Interpharma have developed a new process for the production of antibodies, enabling antigens to be obtained. With this method, the use of guinea pigs for blood sampling is no longer necessary. Instead, sheep's blood that is the by-product of other studies is used. This does not involve any increase in the number of sheep used for studies.

---

Project name: Serum recycling

---

Charter article: 1

# Internal awards as a means of promoting the 3Rs

Some member companies of Interpharma regularly acknowledge research with internal national and international 3Rs awards. Researchers from different departments are given the opportunity to submit their work and developments and are thereby motivated to further advance the 3Rs.

## Organoid model for the reduction of rodents

Liver diseases are on the rise, and studies of liver damage in rodents have been the only way to study the signalling pathways involved in liver regeneration until now. With the development of a rodent-derived organoid model that incorporates the most important features of liver regeneration, it is now possible to eliminate the need for laboratory animals almost entirely. The organoids can be derived from a single animal and indefinitely reproduced and cultivated. Moreover, this organoid culture allows genetic modifications to be made, thus eliminating the need to produce and breed genetically modified animals.

Project name:	Liver-on-a-Chip
Charter article:	1

## Virtual control groups in preclinical toxicity studies in animals

Sharing data from in vivo toxicity studies offers the opportunity to analyse the variability of control groups in relation to strain, age, duration of study, vehicle and other experimental conditions. A data store with historical data from animal control groups could enable virtual control groups to be created for toxicity studies in the future. Virtual control groups are already an established concept in clinical studies. But what is new about it is the idea of replacing live organisms with virtual data sets and integrating these in the design of regulatory animal studies. The use of virtual control groups has the potential to reduce the number of laboratory animals required by 25%. The animals in the control group could be replaced by randomized data sets. Prerequisites for such an approach are the availability of large and well-structured control data sets and also rigorous statistical analyses. The foundations for such a data exchange have been laid in projects such as eTOX and eTRANSAFE as part of the Innovative Medicines Initiative (IMI).

For the proof of principle, the participating companies have started to collect control group data and to characterize the data according to their variability. In a second step, the control group data will be shared between the companies, and cross-company variability will be studied. In a third step, a series of studies will be analysed to assess whether the use of data from virtual control groups had altered the result of the study compared with the real control group.

Project name:	Virtual Control Groups
Charter article:	1



# Interpharma member companies are in a steady, open and constructive dialogue on animal experiments and animal welfare.

## Refinement of lung function tests

The assessment of lung function is important not only in studies on respiratory diseases, but also in pharmacological and toxicological safety tests. Combined methods of assessment can lead to distorted data and stress for the animals. In earlier studies with animal models of idiopathic pulmonary fibrosis (IPF), invasive techniques were used to investigate disease symptoms and lung function. The use of an automated and continuous monitoring platform to observe and study animals in their domestic environment without disturbing their natural resting cycle or handling them allowed the testing procedure to be refined and the scientific quality of the resulting data to be improved.

---

Project name:	Automated data collection and monitoring
---------------	--

---

Charter article:	1
------------------	---

## Internal awards as a means of promoting the 3Rs

Some member companies of Interpharma regularly acknowledge research with internal national and international 3Rs awards. Researchers from different departments are given the opportunity to submit their work and developments and are thereby motivated to further advance the 3Rs.

The member companies are all agreed that animal welfare is a global concern and they all share responsibility for it. It is all about winning over hearts and minds in support of the 3Rs. The success of their efforts is reflected in the growing number and quality of submissions for the competitions each year. These awards honour the efforts being made to reduce, refine and replace animal experiments.

---

Project name:	Awards
---------------	--------

---

Charter article:	3
------------------	---



“Animal welfare is a global responsibility,  
a global concern and a huge global passion.”

**Dr. Tobias Schnitzer**  
Global Head of Comparative Pharmacology & Toxicology, Roche

**In vitro screening of human neurons replaces animals**

Until recently, potential convulsive effects in humans and medicines capable of inducing seizures have been tested in the rat-hippocampus-cutting test. This technique required 3 to 4 animals per substance tested. Now the method has been replaced by the in vitro screening of human neurons derived from human-induced pluripotent stem cells (iPS) using a microelectrode array technology. In addition, this technology provides for a higher throughput and less interexperimental variability thanks to the standardized cell culture.

Project name:	Microelectrode array technology in vitro-screening
Charter article:	1

**National advancement of the 3Rs by the 3RCC**

The 3RCC, which is supported by universities, the industry, the authorities and Swiss Animal Protection, received 96 proposals in response to its second call for the submission of projects. This is almost twice the number last year. Half of the projects concerned replacement, 30% refinement and 20% the reduction of animal experiments. The Swiss 3Rs Competence Centre (3RCC) will sponsor four projects this year with 1.3 million francs. Researchers at the ETH Zurich will receive a grant for the development of tools for the analysis of behaviour in laboratory rodents that should improve animal wellbeing and reduce the number of animals needed. At the University of Bern, the 3RCC will fund three groups that are developing human-based in vitro models to study cancers, pulmonary fibrosis and the transfer of medicines between mother and foetus. In three out of four projects, the aim of the research is to replace approaches using live animals with methods using cells from patients. Novel, animal-free methods of this kind promise to be more reliable, more reproducible and more relevant for humans.

Project name:	National promotion of the 3Rs
Charter articles:	1, 3, 9

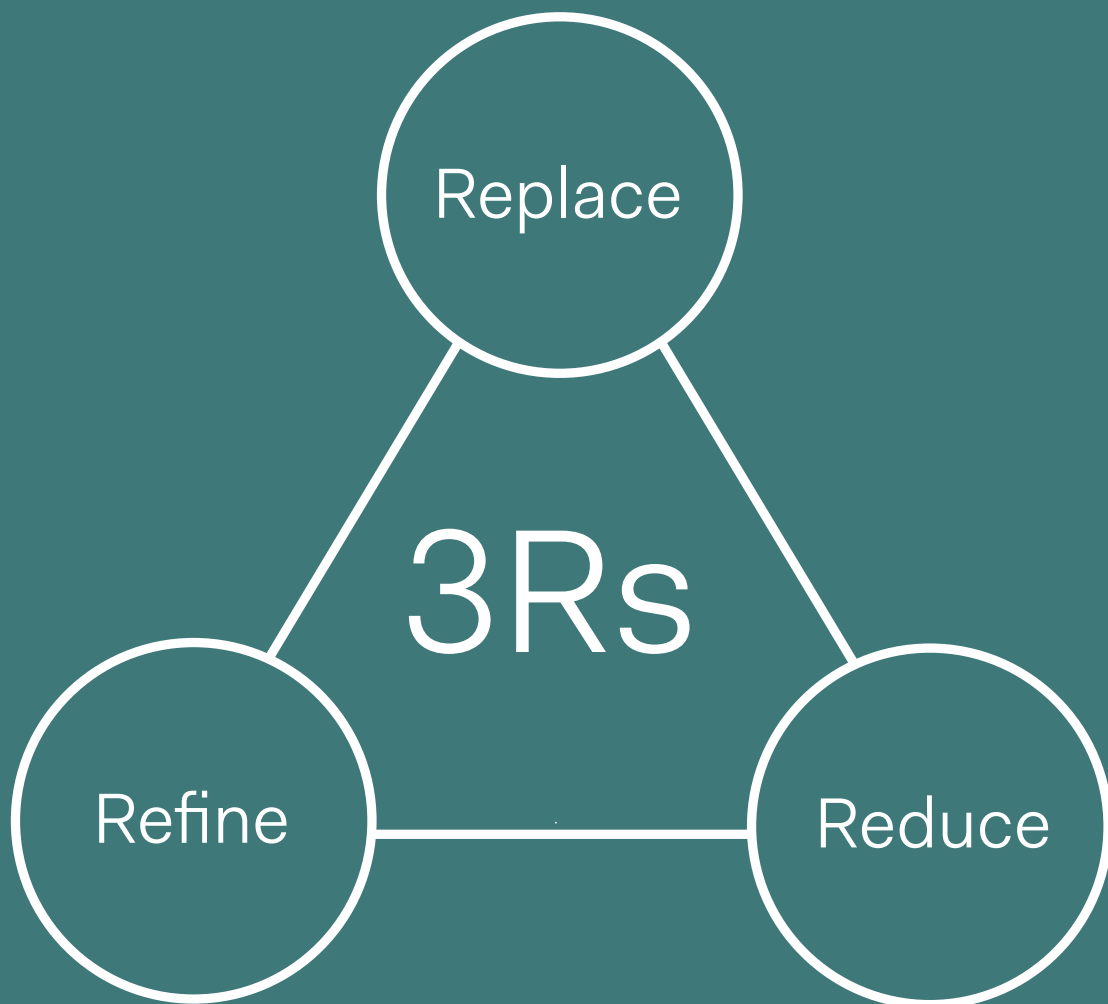
**Biomedical Research Awareness Day (BRAD)**

A member company of Interpharma celebrates its second annual Biomedical Research Awareness Day (BRAD) in 2020. BRAD was launched in 2016 by Americans for Medical Progress (AMP) in the US and takes place every third Thursday in April. This day is an opportunity to inform and raise the awareness of the company's employees about the need and the benefits of animal research for the development of new medicines and therapies. In this member company of Interpharma, BRAD is celebrated worldwide in October: the day is celebrated with numerous on-site events, presentations and workshops, as well as the presentation of new digital technologies. At its site in Switzerland, the focus is on informing employees about the legal requirements for the use of animals, animal welfare and ethics policies and standards and also the high quality of animal care. This information is important for the employees in view of the upcoming referendum on the initiative for a ban on animal experiments, which wants to see a complete ban on clinical studies in animals and humans as well as on the importing of medicines that have been developed with the use of animals.

Project name:	BRAD-Day
Charter articles:	1, 3, 9

Published for the first time in 1959, the principles of the 3Rs today are enshrined in both national and international law on animal welfare.

Live and sentient laboratory animals should be replaced as far as possible by non-sentient material such as cell models.



The laboratory animals used are treated as gently as possible. This relates to the entire life of the animal: breeding, transport, housing, experiment and, where applicable, also euthanasia.

The objective of the experiment should be achieved with as few animals as possible.

# Working groups and projects

Numerous projects and working groups have already been in existence for many years, promoting national and international cooperation in the field of the 3Rs and benefiting the well-being of laboratory animals.

# 1,000

organizations, institutions and companies  
are accredited by AAALAC in almost  
50 countries worldwide.

## **AAALAC International (Association for Assessment and Accreditation of Laboratory Animal Care)**

The independent, non-profit organization AAALAC promotes the humane treatment of animals in science with the aid of voluntary evaluation and accreditation programs. More than a thousand institutions, including pharmaceutical companies, universities and biotech firms in 49 countries have been accredited by the AAALAC. Several sites of Interpharma member companies are also AAALAC-certified. Since 2013, Interpharma has had a seat in the delegation of member organizations and can thus exert a direct influence on the promotion of independent animal welfare certification programmes.

To ensure that the monitoring and performance of research with animals and their care is in line with tried and tested procedures, the AAALAC has more than 360 ad hoc consultants, who accompany committee members during on-site visits and make recommendations. These consultants – who also come from Interpharma member companies – can offer expertise that extends beyond the field of conventional laboratory animal species and in some cases provide additional expertise in fields such as applied neuroscience, behavioural science, toxicology, pharmacology or physiology.

---

Project name:	AAALAC International
---------------	----------------------

---

Charter articles:	2, 7
-------------------	------

---

Link:	<a href="http://www.aaalac.org">www.aaalac.org</a>
-------	--

---

## **IQ Consortium**

### **(International Consortium for Innovation and Quality)**

Member companies of Interpharma are engaged in the IQ Consortium and participate in the 3Rs Leadership Group of this consortium. The group was established to promote the exchange and realization of high-quality scientific practices and thus to advance the principles of the 3Rs in animal research aimed at the discovery and development of new medicines, vaccines, medical devices and health products for use in humans and animals.

The subgroup European Liaison Working Group, with which Interpharma maintains official contacts, promotes the exchange of 3Rs expertise and their mutual interest in similar objectives being pursued both in the US and in Europe. In addition to a global 3Rs award programme, the group also offers 3Rs training and continuing education courses.

---

Project name:	IQ Consortium
---------------	---------------

---

Charter articles:	1, 3, 9
-------------------	---------

---

Link:	<a href="http://www.iqconsortium.org">www.iqconsortium.org</a>
-------	--

---

## **Interpharma Animal Welfare Working Group**

The Animal Welfare Working Group is one of the seven permanent working groups of Interpharma. Various company representatives and also a representative of the University of Zurich meet regularly to address the ongoing improvement of animal welfare and the promotion of the 3Rs. In keeping with the 10-point charter, which was launched in 2010, this group commits to produce an annual report on its activities and advances in the area of the 3Rs and animal welfare.

---

Project name:	Interpharma Animal Welfare Working Group
---------------	--

---

Charter articles:	1–10
-------------------	------

---

# Interpharma member companies are committed to promoting the validation and acceptance of alternative methods.

## Building 98: an ultra-modern research facility

As part of its efforts in the field of the 3Rs, Roche is developing alternative procedures and methods to reduce or replace animal experiments. These include, for example, animal and human cell cultures, computer simulations or individual organs with human or animal cells on microscopically small scale (organs-on-a-chip). These make preclinical studies more precise and more informative and allow animal experiments to be reduced. Nevertheless, it is not possible to do without animal experiments completely – because, among other things, they are required by the authorities.

Roche is therefore building a new, ultra-modern research facility, in which the animals and the animal welfare take centre stage. At the same time, work processes are to be made more effective and efficient and the quality of the workplaces thus improved. Each floor can be reconfigured within four weeks and thereby easily adapted to the constantly changing requirements. Aside from the welfare of the animals, health protection for the staff also has utmost priority: cages are cleaned and restocked automatically, which reduces allergic reactions in the personnel. Heavy loads are manoeuvred by driving robots, thereby reducing the physical strain for the staff.

The new in vivo research facility is already fully digital, so it will be possible to record many parameters online in the future. The facility offers an ultramodern and attractive environment both for the animals and for the people who work there, enabling them to achieve the best possible results in in vivo research and to forge ahead with the vision of the 3Rs – replace, reduce, refine.

Project name:	Bau 098
Charter article:	1

## EPAA (European Partnership for Alternative Approaches to Animal Testing)

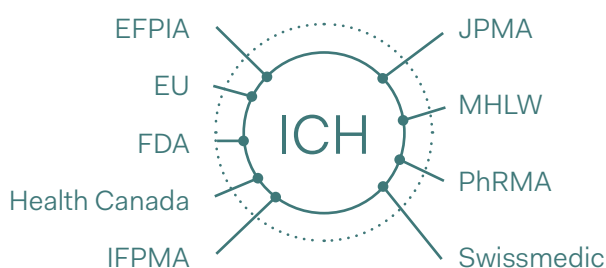
The EPAA platform, a voluntary partnership between the European Commission and various industrial sectors that sets great store by the exchange of know-how and resources to improve the development, validation and acceptance of animal-free methods of research, is actively supported by Interpharma members. In the past two decades, the EPAA has organized around 50 workshops and brought out numerous publications. The EU Commission and 37 companies from seven industrial sectors (chemicals, pharmaceuticals, cosmetics, perfume, soap and detergent industries, as well as animal health) agreed in 2016 to a further five-year collaboration up to 2020. The focus is on cooperation with international supervisory bodies and national regulatory agencies. The EPAA aims to continue its intensive support for the international harmonization of regulatory safety requirements, whenever appropriate and possible.

Project name:	EPAA
Charter articles:	1, 2, 8
Link:	<a href="https://ec.europa.eu/growth/sectors/chemicals/epaa">ec.europa.eu/growth/sectors/chemicals/epaa</a>

## ICH

### (The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use)

ICH brings together regulatory authorities from Europe, Japan and the US with the pharmaceutical industry to discuss scientific and technical aspects of pharmaceutical product registration. The purpose of the ICH is to harmonize the tests used during the research and development of new medicines and the technical standards and requirements for product registration. This standardization is intended to ensure a more cost-effective deployment of resources and to eliminate unnecessary delays in the global development and availability of new medicines. The harmonization process is complex and can take several years. It refers to the areas of quality, safety (which is where animal experiments come in), efficacy and multi-disciplinary fields.



---

Project name:	ICH
---------------	-----

---

Charter articles:	1, 8
-------------------	------

---

Link:	<a href="http://www.ich.org">www.ich.org</a>
-------	--

---

## TEDD

### (Tissue Engineering – Drug Development)

Organ-like human tissue and cell models are of major importance for drug development and for the assessment of compounds. The National Competence Centre TEDD pools and transfers knowledge and technology to promote the further development and application of in vitro cell and tissue culture. New technologies that offer a physiologically more relevant representation of the function and structure of healthy and diseased tissues and organs are gaining ground. However, they are still in an early phase of development and are only of limited suitability for routine use. To exploit their full potential, there is a need for new methods of analysis to be developed, along with the further development of controlled and standardized production of tissues, preservation, automation, routine application and quality control. Concrete research projects in a network of partners from various stakeholders – including several member companies of Interpharma – has resulted in a platform that is actively helping to shape the development and application of alternative test methods for routine use in industry.

---

Project name:	TEDD
---------------	------

---

Charter articles:	1, 8
-------------------	------

---

Link:	<a href="http://www.zhaw.ch/de/lsfm/forschung/chemie-und-biotechnologie/tedd-competence-centre">www.zhaw.ch/de/lsfm/forschung/chemie-und-biotechnologie/tedd-competence-centre</a>
-------	--

---

## Research for Life association

The independent association Forschung für Leben (Research for Life) was founded with the aim of informing the Swiss population about the importance and the latest results of biomedical research. The idea is to foster dialogue between scientists and the lay public and to explain in clear and straightforward language not only the benefits but also the hazards of research. Besides the regular publication of the brochure BioFokus and the awards it grants to high school graduates for end-of-school projects, the association also makes a so-called gene laboratory available to any schools that are interested. Interpharma has supported the association financially for several years and cooperates with it especially in the field of animal welfare and animal protection.

---

Project name:	Research for Life
---------------	-------------------

---

Charter articles:	1, 3, 9
-------------------	---------

---

Link:	<a href="http://www.forschung-leben.ch">www.forschung-leben.ch</a>
-------	--

---

# 4,700

researchers have signed the  
Basel Declaration.

## 3Rs Competence Centre (3RCC)

The national 3Rs Competence Centre (3RCC) was founded on 27 March 2018 to promote the principles of the 3Rs in Switzerland. Along with 11 universities, participants in the 3RCC include Interpharma, Swiss Animal Protection and the Federal Food Safety and Veterinary Office (FSVO). Its objectives are to sponsor high-quality 3Rs research projects, to develop a strategy for 3Rs-based training and continuing education, and to establish a professional communications strategy. The 3RCC provides access to the latest information concerning the 3Rs and alternatives to animal experiments for all actors involved. The centre offers its services to authorities, teaching and educational institutions and other interested groups. It also monitors the progress achieved in these areas in Switzerland. Before the establishment of the national centre, 3Rs research projects were supported and sponsored for 30 years by the 3Rs Research Foundation Switzerland. From the outset, the foundation was financed equally by the federal government and Interpharma. Altogether, out of 482 applications received for contributions, the foundation sponsored 146 research projects with a total of around 18.8 million francs.

---

Project name:	3RCC
---------------	------

---

Charter articles:	1, 3, 9
-------------------	---------

---

Link:	<a href="http://www.swiss3rcc.org">www.swiss3rcc.org</a>
-------	--

---

## EFPIA network for animal welfare

Member companies of Interpharma contribute ideas for high animal welfare standards on a pan-European level in the EFPIA Research and Animal Welfare (RAW) Group. One of the primary functions of this group is to collaborate actively in efforts to effectuate EU Animal Welfare Directive 2010/63 in EU member states. The implementation of this directive was reviewed in 2017 by the European Commission and found to provide a solid foundation for regulating the protection of animals used for scientific purposes. The group also advocates for an open exchange of ideas and good collaboration with other organizations that support research in the area of the 3Rs. The group is made up of experts in toxicology, pharmacology, ethics, law, public affairs and animal welfare, as well as observers from academic and regulatory institutions. In addition, the EFPIA publishes an annual 3Rs report online.

---

Project name:	EFPIA Research and Animal Welfare Group
---------------	--

---

Charter articles:	1, 2, 8, 9
-------------------	------------

---

Link:	<a href="http://www.efpia.eu/about-medicines/development-of-medicines/animal-use-and-welfare/">www.efpia.eu/about-medicines/ development-of-medicines/ animal-use-and-welfare/</a>
-------	--

---

## Basel Declaration

The goal of the Basel Declaration Society is to reinforce public trust in animal-based biomedical research and to foster open and transparent communication between researchers and the general public. It seeks to help ensure that ethical principles such as the 3Rs are applied in animal research worldwide. At present, more than 4,500 researchers around the world have signed the declaration. The activities of the Basel Declaration Society include participation in meetings and events concerning animal experiments, regular publication of the magazine Mice Times and also the hosting of an international congress every two years. In addition, the organization awards an annual prize for the harmonization of quality standards in the handling of laboratory animals. Interpharma and its member companies have supported the project of the Basel Declaration Society financially for years.

---

Project name:	Basel Declaration
---------------	-------------------

---

Charter articles:	1, 9
-------------------	------

---

Link:	<a href="http://www.basel-declaration.org">www.basel-declaration.org</a>
-------	--

---



### Internal training

Every year, a member company of Interpharma in Switzerland offers officially accredited training that allows employees who work in research with animals to meet the training requirements stipulated by law. This training covers the following areas:

- The basic science and the influence of award-winning 3Rs projects
- Questions and answers on AAALAC accreditation
- Statutory initiatives in Switzerland that impact animal welfare
- Presentation of the Centre for Reproducible Science of the University of Zurich and the associated network in Switzerland
- Novel cage activity metrics for refinement of the post-operative care of mice
- Compassion fatigue among animal care technicians: overview and practical strategies

On the training day, information about changes is also provided, including legal requirements and directives. This ensures that staff are kept up to date about the current status of legal requirements and about the concerns of the committee on animal experiments.

In addition, practical training is also offered in this member company through the group training services. All new members of staff in animal research are trained to guarantee uniform standards. Moreover, special events and further training are offered for experienced staff. These courses can be officially accredited as continuing education days.

---

Project name:	Internal training
---------------	-------------------

---

Charter articles:	1, 3, 9
-------------------	---------

### Care culture in times of crisis

The Covid-19 pandemic can lead to so-called compassion fatigue both among staff and also in animal care. Compassion fatigue is characterized by emotional and physical exhaustion, resulting in a diminished capacity to feel sympathy for others or for animals. The current global pandemic is intensifying this situation and thus increasing the risk of developing compassion fatigue. As such, it was also a focus of two recent articles in the journals Science and Nature. Fortunately, the pharma industry was very well prepared for multiple emergency scenarios, including the safeguarding of appropriate animal care and animal welfare practices during a pandemic. These are continually evaluated to make sure everything runs smoothly in animal care even in the event of a crisis. As a result of this preparation, animal care and the well-being of animals could be maintained at the same high pre-pandemic levels. As part of the engagement for further development of an excellent care culture and in order to raise awareness of the potential for compassion fatigue, one member company organized a global presentation for its employees who work with animals. The presentation included details illustrating the company's engagement for the highest animal welfare standards and showed practical strategies to prevent and minimize the development of compassion fatigue.

---

Project name:	Internal training
---------------	-------------------

---

Charter articles:	1, 3, 9
-------------------	---------

**Joint audits of Interpharma member companies**

Research institutions and their partner and subsidiary companies which conduct animal experiments on behalf of Interpharma members commit to comply with technical requirements and ethical standards in the husbandry and care of laboratory animals. Some member companies of Interpharma regularly carry out joint audits at external research partners and breeders all over the world after prior notification (see p. 33). These audits not only serve to ensure that standards are harmonized and laboratory animals protected, but also help to develop expertise.

The sharing of this information provides for optimum implementation of the legal requirements and also simplifies further-reaching efforts to apply the 3Rs. The audit results are jointly discussed and treated in confidence within the member companies. The decision on whether to enter into a business relationship with the audited organization is the responsibility of the individual company. Besides the jointly conducted audits, member companies check the compliance in their own research institutions worldwide with the defined quality standards in individual procedures. All the criteria checked are recorded in writing and have global validity.

Project name:	Interpharma audits
Charter articles:	4–6

**Dialogue with Swiss Animal Protection**

Interpharma has been in dialogue with STS (Swiss Animal Protection or SAP) for more than eight years. Some years ago, the two organizations viva3R and the Zurich animal protection group Zürcher Tierschutz also joined the dialogue. Their meetings, which take place twice a year, serve to foster mutual understanding, to elucidate questions of animal welfare and to address technical questions on animal experiments and the protection of laboratory animals.

Project name:	Dialogue with STS
Charter article:	9
Link:	<a href="http://www.tierschutz.com">www.tierschutz.com</a>



“I’m convinced that 3Rs research in Switzerland will gain added momentum with the new competence centre 3RCC and the 3Rs will be boosted even further at national level.”

**Dr. Kathy Riklin**  
President of Swiss 3Rs Competence Centre

# The audit process

Some member companies of Interpharma have been conducting regular joint audits at breeders and external contract research organizations (CROs) worldwide since 2014.



# Recommended websites

## **Alternatives to Animal Experimentation – ALTEX**

[www.altex.ch](http://www.altex.ch)

## **American Association for Laboratory Animal Science – AALAS**

[www.aalas.org](http://www.aalas.org)

## **Animalfree Research**

[www.animalfree-research.org](http://www.animalfree-research.org)

## **Association for Assessment and Accreditation of Laboratory Animal Care International – AAALAC**

[www.aaalac.org](http://www.aaalac.org)

## **Basel Declaration**

[www.basel-declaration.org](http://www.basel-declaration.org)

## **Competence Centre TEDD**

[www.zhaw.ch/de/lsvm/forschung/chemie-und-biotechnologie/competence-centre-tedd](http://www.zhaw.ch/de/lsvm/forschung/chemie-und-biotechnologie/competence-centre-tedd)

## **European Federation of Pharmaceutical Industries and Associations – EFPIA**

[www.efpia.eu](http://www.efpia.eu)

## **European Partnership for Alternative Approaches to Animal Testing – EPAA**

[www.ec.europa.eu/growth/sectors/chemicals/epaa](http://www.ec.europa.eu/growth/sectors/chemicals/epaa)

## **Federation of European Laboratory Animal Science Associations**

[www.felasa.eu](http://www.felasa.eu)

## **Institute for Laboratory Animal Research**

[www.dels.nas.edu/ilar](http://www.dels.nas.edu/ilar)

## **International Consortium for Innovation and Quality – IQ**

[www.iqconsortium.org](http://www.iqconsortium.org)

## **International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use – ICH**

[www.ich.org](http://www.ich.org)

## **International Council for Laboratory Animal Science**

[www.iclas.org](http://www.iclas.org)

## **Johns Hopkins University Center for Alternatives to Animal Testing – CAAT**

<https://caat.jhsph.edu>

## **National Centre for the Replacement, Refinement & Reduction of Animals in Research**

[www.nc3rs.org.uk](http://www.nc3rs.org.uk)

## **New Jersey Association for Biomedical Research**

[www.njabr.com](http://www.njabr.com)

## **Schweizerische Gesellschaft für Versuchstierkunde – SGV**

[www.naturwissenschaften.ch/organisations/sgv](http://www.naturwissenschaften.ch/organisations/sgv)

## **Schweizer Tierschutz – STS**

[www.tierschutz.com](http://www.tierschutz.com)

## **Swiss 3Rs Competence Centre – 3RCC**

[www.swiss3rcc.org](http://www.swiss3rcc.org)

## **Themenportal Tierversuche**

[www.naturwissenschaften.ch/topics/animal\\_experimentation](http://www.naturwissenschaften.ch/topics/animal_experimentation)

## **Tierversuche verstehen – eine Informationsinitiative der Wissenschaft**

[www.tierversuche-verstehen.de](http://www.tierversuche-verstehen.de)

## **Understanding Animal Research**

[www.understandinganimalresearch.org.uk](http://www.understandinganimalresearch.org.uk)

## **vtk online**

[www.vtk-online.de](http://www.vtk-online.de)

## **Zürcher Tierschutz**

[www.zuerchertierschutz.ch](http://www.zuerchertierschutz.ch)



## About Interpharma

Interpharma was founded in 1933 and is the association of research-based pharmaceutical companies in Switzerland. Overall, the 23 member companies account for more than 90% of the market share for patented medicines in Switzerland and invest 6.5 billion francs in research and development in Switzerland each year. Interpharma is a driving force for an efficient and high-quality healthcare system that offers patients early access to innovative therapies and the best-possible care. Both at home and abroad we campaign to ensure that patients get first-class healthcare, innovations are rewarded and our industry is able to make a substantial contribution to prosperity, growth and competitiveness in Switzerland.