Examples of ongoing JRC initiatives for implementing the roadmap towards phasing out animal testing

Valérie Zuang
Joint Research Centre – European Commission

EFSA-ECHA Workshop on implementing the EC Roadmap on phasing out animal testing in pesticides and biocides
21-22 September 2026, Parma, Italy

European Commission

Commission Communication on Roadmap – examples of JRC implementation

Action points on pillar I - Making change happen – towards phasing out animal use

Replacing, reducing or refining animal testing in the short- to long-term

- Support the implementation of **over 30 targeted recommendations** to replace, reduce or refine animal testing in the short- to long-term as listed in the Annex (Table 2 and 3).
- Invite EFSA and ECHA to **organise a workshop in 2026** to support the implementation of actions for the **pesticides and biocides** area [45].

Supporting the change

- Provide **access to the experimental facilities of the JRC EU Reference Laboratory for alternatives to animal testing– support companies** that need to test, scale and validate alternative-approach-related products.
- Promote and update the **dynamic Catalogue of Transitional Initiatives**.
- **Use insights from social science research** to support the necessary change management.

Identifying regulatory needs - Supporting validation, qualification and standardisation

- Introduce a mechanism to **identify regulatory needs** for alternative approaches to animal testing.
- Provide information about options for **funding of validation, qualification or standardisation** of non-animal approaches.
- Continue encouraging the **preparation and updating of EU and international standards** [46] on non-animal approaches.
- Work to **make the formal validation procedure more effective and efficient** by:
  - leading on the revision of OECD Guidance Document 34;
  - working with the national contact points (NCPs) under Directive 2010/63/EU to optimise both the EU Network of Laboratories for the validation of alternative methods [47] and the Member States Network for Preliminary Assessment of REgulatory RElevance (PARERE), coordinated by the JRC EU Reference Laboratory.

EUROPEAN COMMISSION

Brussels, 1.6.2026
C(2026) 3497 final

COMMUNICATION FROM THE COMMISSION

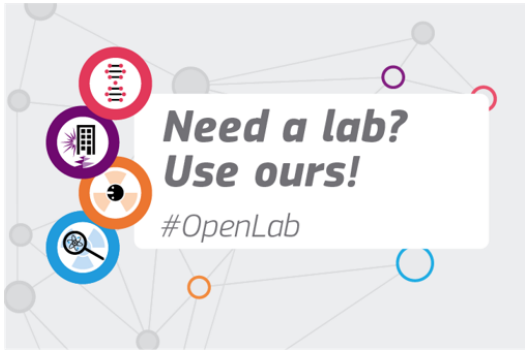
Roadmap towards phasing out animal testing for chemical safety assessments

{SWD(2026) 144 final}

Cross-sectoral activities

European Commission

Why opening our lab to external users?



Assess and improve the transferability of relevant in vitro methods in chemical risk assessment and biomedical research



Use automation and high throughput testing to accelerate aspects of validation



Scout for promising methods and assess their performance with libraries of reference chemicals



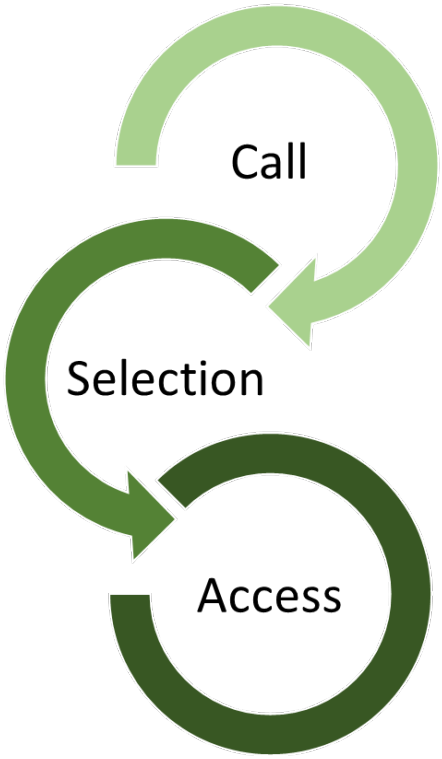
Facilitate scientific and technical knowledge sharing and provide hands-on training



European Commission

JRC Open Lab Framework





Currently, seven JRC laboratories offer relevance-based open access free of additional costs, subject to certain conditions.

Access to JRC research infrastructures is granted through open calls for competitive access, with applications evaluated via a peer review process conducted by external experts in the field.

The Framework defines the principles and modalities, including the rights and obligations of the JRC and the user(s)

Transitional Initiatives – units of change



Inputs: financing, existing resources

Outputs: concrete deliverables produced during an activity

Outcomes: consequences of an activity (partially dependent on external factors)

Impact: long-term goal of phasing out of animal testing in the regulatory assessment of chemicals

European Commission

Share your Transitional Initiative

Required information

1. Title
2. Contact details of notifier
3. Short description
4. Planned output(s)
5. Planned date of output(s)
6. Intended outcome
7. Indicative date of outcome
8. Source(s) of funding

Optional

9. Suggested indicators
10. Additional information
11. Upload outputs

Number of Notified Initiatives 08 October 2026

35

All publicly available in the JRC Catalogue

The home of JRC data

Notification process:

Notification

European Commission

Special Issue on the Roadmap



Supporting the development and implementation of a Roadmap towards phasing out animal testing for chemical safety assessments: opportunities, challenges and paradigm shifts

Guest editors: Jose V Tarazona, Elisabet Berggren, Bruno Campos, Gavin Maxwell & Georg Streck

Supporting a cross-sectors implementation of the roadmap for moving towards animal-free safety assessments for chemicals

2 (2026) 100079

Contents lists available at ScienceDirect

NAM Journal

journal homepage: www.sciencedirect.com/journal/nam-journal

Review Article

Managing change while phasing out animal testing in chemical safety assessments – a collection of stakeholder experiences and expectations

Elisabet Berggren, Andrew P. Worth *

European Commission, Joint Research Centre (JRC), Ispra, Italy

2 (2026) 100082

Contents lists available at ScienceDirect

NAM Journal

journal homepage: www.sciencedirect.com/journal/nam-journal

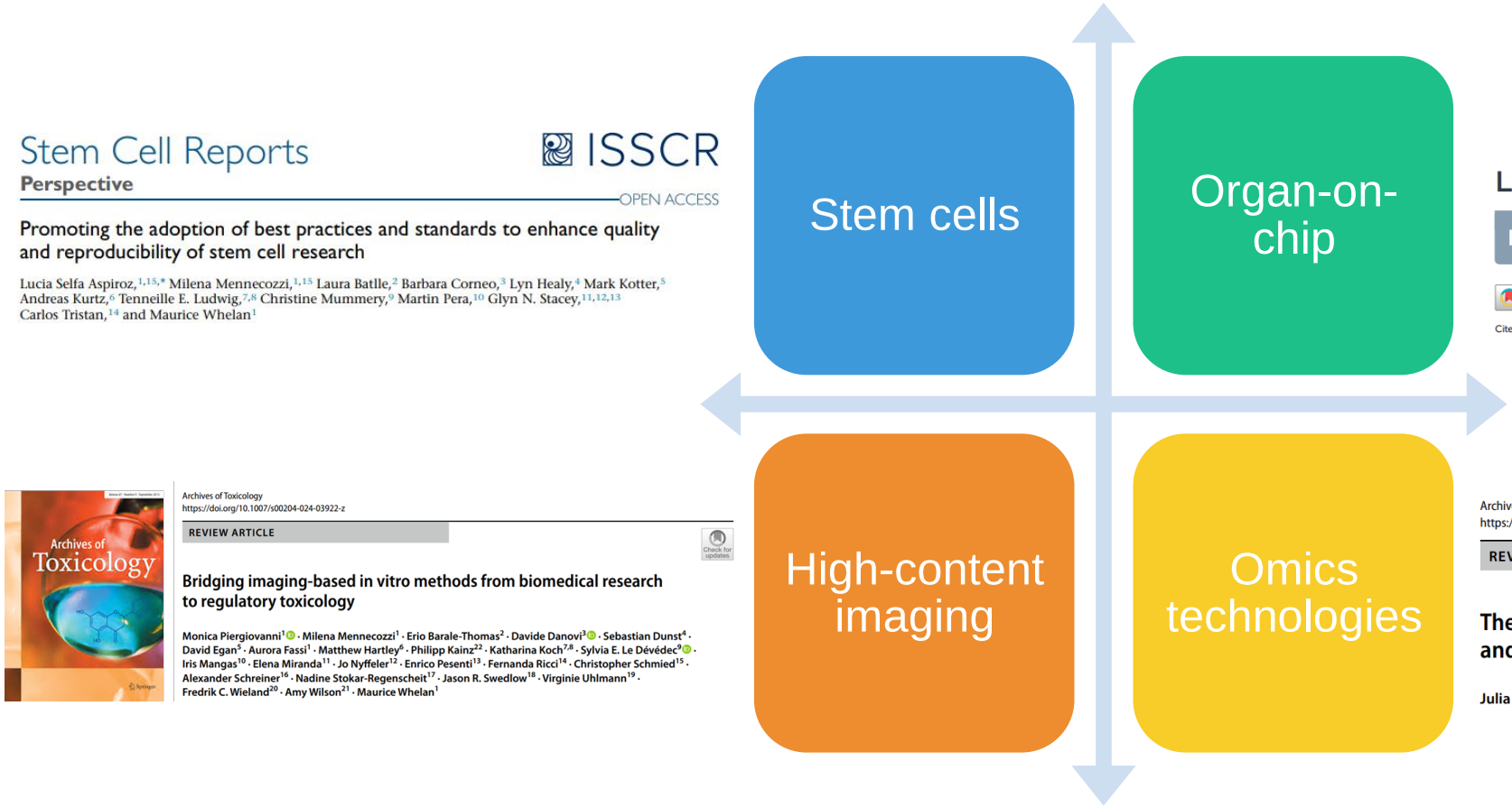
Transitional Initiatives supporting the change towards the phasing out of animal testing in chemical safety assessment

Andrew Paul Worth *, Elisabet Berggren

European Commission, Joint Research Centre (JRC), Ispra, Italy

“Standards have an important role in facilitating innovation and market access by influencing industry practices, guiding policies and ensuring that products and processes meet recognised benchmarks for quality, safety, and sustainability”

European Commission, Communication on *Choose Europe for Life Sciences* (2025)



Stem Cell Reports
Perspective
OPEN ACCESS

Promoting the adoption of best practices and standards to enhance quality and reproducibility of stem cell research

Lucia Selfa Aspiroz,[1,15,*] Milena Mennecozzi,[1,15] Laura Batlle,[2] Barbara Corneo,[3] Lyn Healy,[4] Mark Kotter,[5] Andreas Kurtz,[6] Tenneille E. Ludwig,[7,8] Christine Mummery,[9] Martin Pera,[10] Glyn N. Stacey,[11,12,13] Carlos Tristan,[14] and Maurice Whelan[1]

Archives of Toxicology
https://doi.org/10.1007/s00204-024-03922-z

REVIEW ARTICLE

Bridging imaging-based in vitro methods from biomedical research to regulatory toxicology

Monica Piergiovanni[1] · Milena Mennecozzi[1] · Erio Barale-Thomas[2] · Davide Danovi[3] · Sebastian Dunst[4] · David Egan[5] · Aurora Fassi[1] · Matthew Hartley[6] · Philipp Kainz[22] · Katharina Koch[7,8] · Sylvia E. Le Dévédec[9] · Iris Mangas[10] · Elena Miranda[11] · Jo Nyffeler[12] · Enrico Pesenti[13] · Fernanda Ricci[14] · Christopher Schmied[15] · Alexander Schreiner[16] · Nadine Stokar-Regenscheit[17] · Jason R. Swedlow[18] · Virginie Uhlmann[19] · Fredrik C. Wieland[20] · Amy Wilson[21] · Maurice Whelan[1]


Lab on a Chip

ROYAL SOCIETY OF CHEMISTRY

PERSPECTIVE

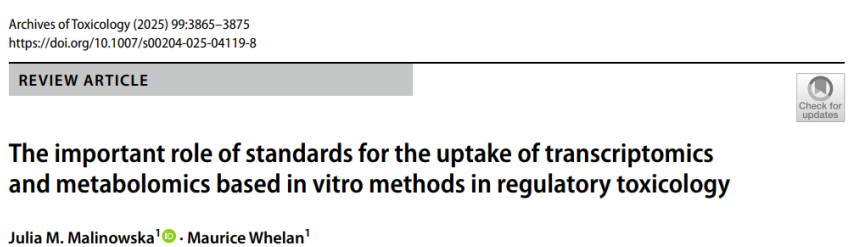
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View Journal | View Issue

Check for updates

Cite this: *Lab Chip*, 2021, **21**, 2857

Standardisation needs for organ on chip devices†

Monica Piergiovanni, * Sofia B. Leite, Raffaella Corvi and Maurice Whelan


Archives of Toxicology (2025) 99:3865–3875
https://doi.org/10.1007/s00204-025-04119-8

REVIEW ARTICLE

Check for updates

The important role of standards for the uptake of transcriptomics and metabolomics based in vitro methods in regulatory toxicology

Julia M. Malinowska[1] · Maurice Whelan[1]

European Commission

Project to update OECD Guidance Document 34

- **Project jointly led by:**
  - EC JRC, Netherlands and United States 
  - With regular input/feedback from a project group of more than 30 experts
- **Scope:**
  - Methods/approaches intended to be in Test Guidelines, covered by Mutual Acceptance of Data
  - Can be *in vivo*, *in vitro*, *in chemico*, *ex vivo*, *in silico* methods
  - Can be individual methods or combinations of methods such as Defined Approaches

Project to update OECD GD 34

Objectives:

- Clarify and simplify terms used in the sphere of validation of methodologies for Test Guidelines: use fewer terms and more consistently
- More emphasis on the biological relevance of the test system and the mechanistic relevance of the endpoint measured than only on how well the test method predicts the adverse effect in an animal
- Include validation of new technologies such as organ-on-chip, ‘omics, and artificial intelligence/machine learning algorithms
- Explain the considerations around protected/proprietary elements in innovative methods
- Re-draft the Chapter on Design and Conduct of Validation Studies
- Provide clear readiness criteria to evaluate the maturity of candidate methods and proposed defined approaches
- Develop guidance on training and transferability: how to do it and how to do it well
- How to evaluate reproducibility and make better use of all data (beyond pos/neg)

European Commission

Concept of Readiness Criteria templates

- Four separate templates that are **endpoint agnostic** are being developed for **in vitro / in chemico / ex vivo** methods, for **in silico** methods, for **DAs**, and for **in vivo** methods
- Focus on **validation workflow** (to enter validation and peer review)
- Designed as a **questionnaire** (YES/NO/NOT APPLICABLE)
- Accompanying **template for full submission** aligning with readiness criteria template will be developed, requesting details on each question
- Only **essential criteria** are included; no scoring system is proposed
- Designed to be **comprehensive** but not too difficult to complete
- To be used as **self-assessment tools** for method developers and as **prioritisation/evaluation tools** for authorities (e.g. validation bodies, OECD, regulatory authorities, funding organisations)
- To be included as **Annexes to GD34**

European Commission

Readiness Criteria for individual test methods (in vitro/in chemico/ex-vivo)

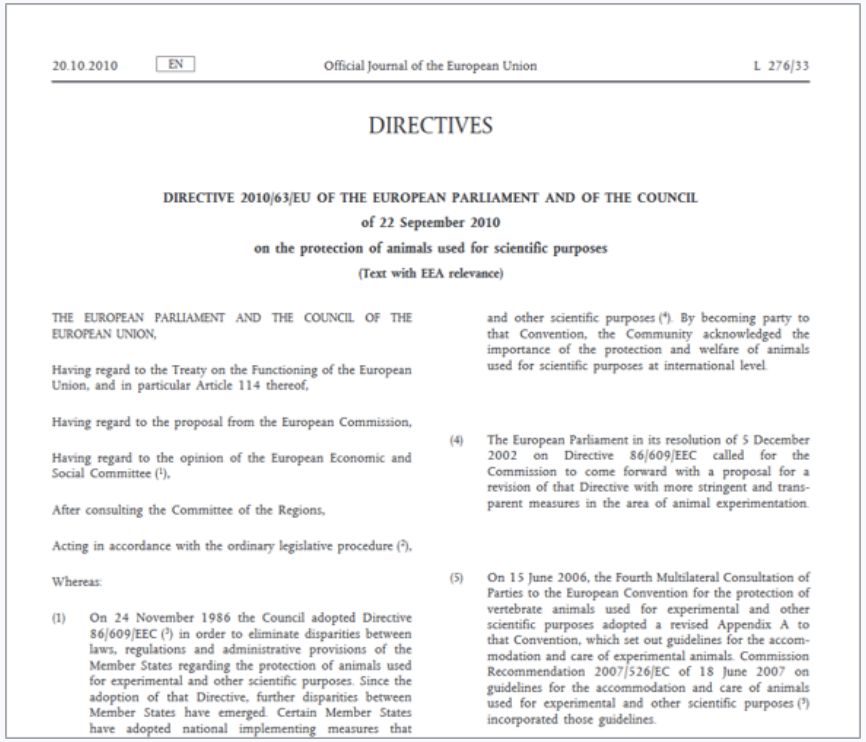
Test method definition / description		
Availability / accessibility and international consistency of test method components	Intellectual property	Test system
Control (and reference) items	Acceptance criteria for results	Assessment of interference
Identification of critical steps / key sources of variability	Detailed protocol	
Data management, evaluation and interpretation		
Data management	Data processing	Data Interpretation Procedure
Test method reproducibility		
Training	Chemicals / test items selection	Transferability
Reproducibility over time and across operators	Within-laboratory reproducibility	Between-laboratory reproducibility
Test method relevance		
Biological relevance of the test system	Mechanistic relevance of measured endpoint(s)	Regulatory relevance
Regulatory use / application	Chemicals / test items selection	Predictive capacity
Limitations / Applicability Domain	Uncertainties	
Data integrity and quality assurance		

Directive 2010/63/EU on the protection of animals used for scientific purposes (Art. 47)

EU Member States contributions to alternative approaches

- **MS shall assist the Commission in identifying and nominating suitable specialised and qualified laboratories to carry out validation studies**
- **MS shall contribute to the development and validation of alternative approaches (EU-NETVAL)**
- After consulting with MS, Commission shall set the priorities and allocate the tasks between the laboratories
- MS shall promote and disseminate information on alternative approaches at national level
- **MS shall appoint a single point of contact for assessment of regulatory relevance of alternatives proposed for validation (PARERE)**

Directive reference



20.10.2010 EN Official Journal of the European Union L 276/33

DIRECTIVES

DIRECTIVE 2010/63/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 22 September 2010
on the protection of animals used for scientific purposes
(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 114 thereof,

Having regard to the proposal from the European Commission,

Having regard to the opinion of the European Economic and Social Committee (1),

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure (2),

Whereas:

(1) On 24 November 1986 the Council adopted Directive 86/609/EEC (3) in order to eliminate disparities between laws, regulations and administrative provisions of the Member States regarding the protection of animals used for experimental and other scientific purposes. Since the adoption of that Directive, further disparities between Member States have emerged. Certain Member States have adopted national implementing measures that

and other scientific purposes (4). By becoming party to that Convention, the Community acknowledged the importance of the protection and welfare of animals used for scientific purposes at international level.

(4) The European Parliament in its resolution of 5 December 2002 on Directive 86/609/EEC called for the Commission to come forward with a proposal for a revision of that Directive with more stringent and transparent measures in the area of animal experimentation.

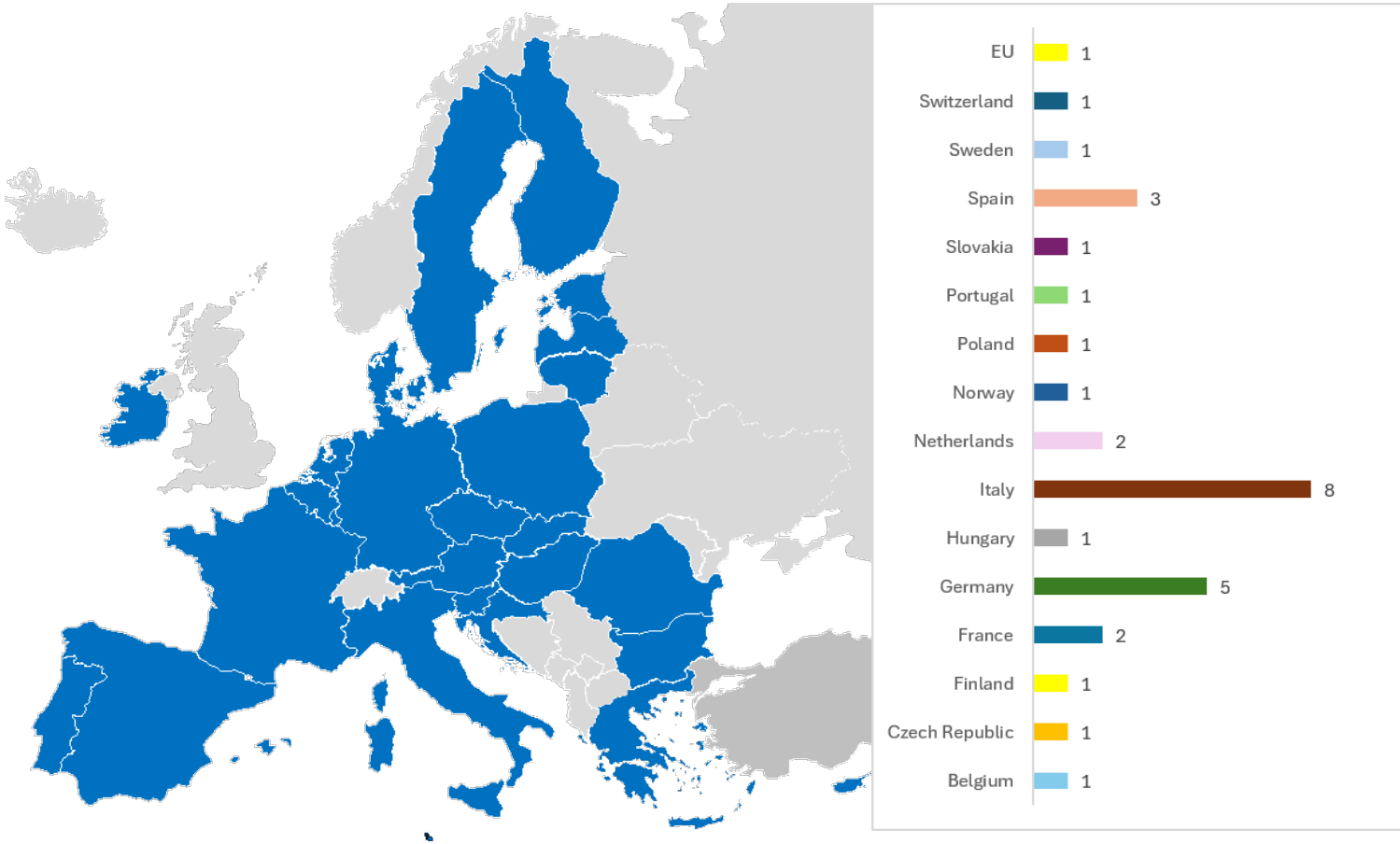
(5) On 15 June 2006, the Fourth Multilateral Consultation of Parties to the European Convention for the protection of vertebrate animals used for experimental and other scientific purposes adopted a revised Appendix A to that Convention, which set out guidelines for the accommodation and care of experimental animals. Commission Recommendation 2007/526/EC of 18 June 2007 on guidelines for the accommodation and care of animals used for experimental and other scientific purposes (5) incorporated those guidelines.

Article 47 provides the legal basis for Member State contributions to alternative approaches.

EU-NETVAL: A Collaborative Framework

The EU Network of Laboratories for the Validation of Alternative Methods (EU-NETVAL) comprises **31 specialised laboratories** supporting the European Commission's efforts to validate alternatives to animal testing.

This network provides crucial infrastructure and expertise for the validation process, helping to overcome resource limitations through collaboration.



European Commission

Preliminary Assessment of Regulatory Relevance Network (PARERE)

PARERE is a network of regulators from the EU Member States that provides EURL ECVAM with upstream input and preliminary views on potential regulatory relevance of methods or approaches submitted to EURL ECVAM for validation and/or peer review (through ECVAM's test submission process).

Explore PARERE

Find out about:

- Role of PARERE
- Representation in PARERE
- Meetings and operation
- List of meetings with agendas and minutes

Quick access

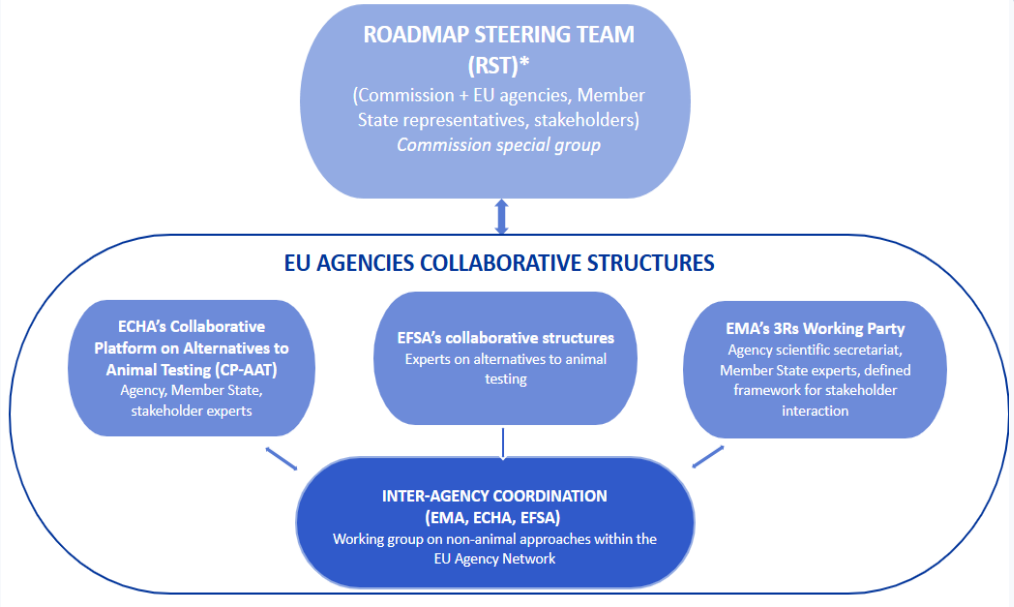
PARERE

Scan the QR code

European Commission

Positioning of PARERE and EU-NETVAL in the new context

1. Roadmap Governance



2. Establishment of the OSOA subgroup on TDV

OSOA subgroup's tasks (ToR):

1. identification of regulatory needs;
2. identification of priorities for method development and method validation, qualification or standardisation towards regulatory acceptance;
3. overseeing the coordination of validation efforts, where appropriate, and monitoring of progress towards regulatory acceptance;
4. identification and mobilisation of resources and recommendations for alignment of financial mechanisms and recommendations for allocation of resources supporting validation, qualification or standardisation.

European Commission

Non-Animal Methods in Science and Regulation

EURL ECVAM Status Report 2025





EN

Joint Research Centre

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Home > ... > EU Reference Laboratory for alternatives to animal testing (EURL ECVAM) > Support to the roadmap towards phasing out animal testing for chemical safety assessments

Support to the roadmap towards phasing out animal testing for chemical safety assessments

The EU Reference Laboratory for alternatives to animal testing (EURL ECVAM) is contributing significantly to the implementation of the roadmap.

Page contents

Overview
EURL ECVAM activities supporting roadmap actions
Policy background
Related links
Contact us

Overview

The European Commission presented the roadmap towards phasing out animal testing for chemical safety assessments in June 2026.

This roadmap sets out clear objectives and concrete steps to transition from traditional animal testing to innovative non-animal approaches, while ensuring high levels of protection for human and animal health and the environment.

The Joint Research Centre, through our EU Reference Laboratory for alternatives to animal testing (EURL ECVAM), contributed significantly to the development of the roadmap and is playing an active role in its implementation.

EURL ECVAM activities supporting roadmap actions

Transitional initiatives

We have established a dynamic catalogue of transitional initiatives to inform prioritisation efforts and foster communities of practice in regulatory science. You are encouraged to notify the JRC about your initiative.

Support to the roadmap towards phasing out animal testing for chemical safety assessments - Joint Research Centre



Thank you

valerie.zuang@ec.europa.eu

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EU Science Hub
joint-research-centre.ec.europa.eu

European Commission

Drivers for updating OECD GD 34

- **Outdated Practices**
  Still based on 1996 concepts; science and regulation have moved on

- **Simplify**
  Remove repetitions and improve claritiy and readibility

- **Boost NAM Uptake**
  Speed adoption of new, fit-for-purpose non-animal methods

- **Explicit Guidance**
  Provide more/better guidance on key aspects of validation studies (quality assurance, data integrity, method description, chemicals selection etc.)

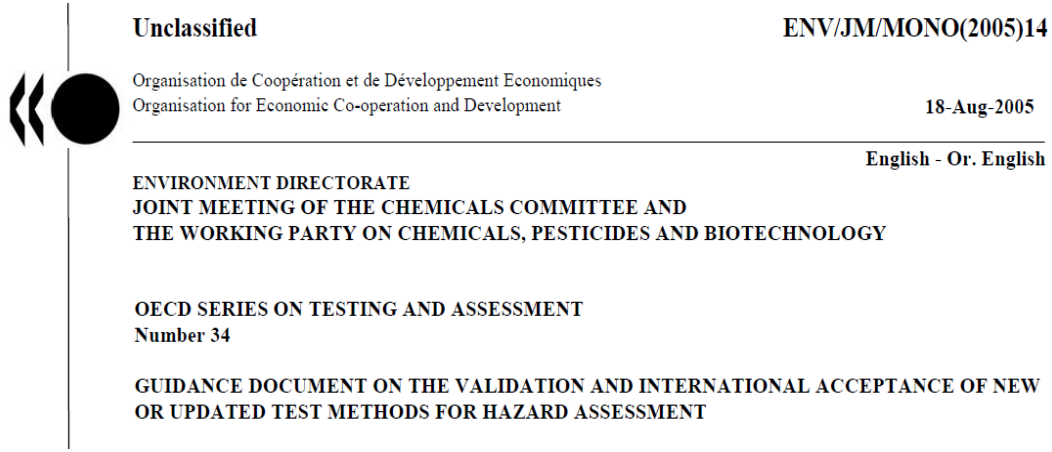
- **Address Defined Approaches**
  Provide guidance on how to validate non-stand-alone mechanistic methods and defined approaches

- **Efficient Reproducibility Testing**
  Increase the efficiency and cost-effectiveness of demonstrating reproducibility and robustness

- **Adapting to Innovation**
  Include tech breakthroughs such as Organ-on-Chip, Machine Learning, AI tools, etc.

- **Evolve Performance Standards**
  Update Performance Standards for broader use

- **Modern Regulations**
  Support animal-free, cost-effective safety testing



Unclassified ENV/JM/MONO(2005)14

Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

18-Aug-2005

English - Or. English

ENVIRONMENT DIRECTORATE
JOINT MEETING OF THE CHEMICALS COMMITTEE AND
THE WORKING PARTY ON CHEMICALS, PESTICIDES AND BIOTECHNOLOGY

OECD SERIES ON TESTING AND ASSESSMENT
Number 34

GUIDANCE DOCUMENT ON THE VALIDATION AND INTERNATIONAL ACCEPTANCE OF NEW OR UPDATED TEST METHODS FOR HAZARD ASSESSMENT