

# Non-animal alternative methods in the 21st century

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# Model development is a special type of research

- Based on good science
- Based on need
  - Priority setting given together with or outside the scientific community (regulators, industry)
- Research has to be taken beyond scientific proof
  - From scientifically solid to validated routine models
  - Economically viable
- Means:
  - Combining innovative research with systematic model development
  - National centres should be established. They would help/participate in feasibility evaluation and prevalidation/validation of the models
  - Network of national centres with ECVAM would participate in priority setting
  - Funding

# Method development and validation process

- Research model: scientifically solid model.  
**Deliverable:** publication  
↓
- Optimised model: all conditions optimized, method tested with the chemical substances it will be used by end users. **Deliverable:** SOP  
↓
- Validated model: validation under GLP and according to relevant guidelines. **Deliverable:** intra-laboratory validated method

# Human cell and tissue based models/methods

When modeling effects to man

Means:

- Cells isolated from primary tissues
- Adult stem cells
- Embryonic stem cells
- Induced pluripotent cells

# Automation

- It is expected that a large number of in vitro assays are needed to cover an animal test.
- Therefore, automation possibility is an important part that should be included into model/test development.
- Today's techniques enable automation of cell culture tests and even tissue models

# Knowledge and information sharing, education and training

A bottleneck for the development and use of alternative models is their poor awareness

Means:

- It is important that all key players i.e. students, researchers, and decisions makers in industry and regulatory bodies are involved
- Active knowledge and information sharing
- Organized systematic education and training
- The centers that focus on alternatives would have an important role

# Congratulations to 20-years old ZEBET !!



20th Anniversary of Zebet at BfR,  
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