FICAM – The Finnish Centre for Alternative Methods
Non-animal alternative methods in the 21st century

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The common goal in all research is to replace animal experiments with non-animal alternatives as soon as possible and preferably within the time frames set by EU-regulations, without jeopardising safety and efficacy in testing of chemical and biological substances concerning both human health and safety of environment. We regard the following points crucial to obtain alternatives soonest possible into the routine testing and basic and applied research:

1. Systematic and coordinated development of alternative methods.
In this context, maybe the most important role is played by Directive 86/609/EEC, which is now being updated. Obligation to the member countries to nominate a body of expertise (a centre or reference laboratory) that focus on development of alternative non-animal methods, validate those and give education and training would be an important instrument together with ECVAM to promote systematic and coordinated development.

Naturally, sufficient funding of large multinational projects is critical. The new funding in FP-7 will be very welcome.

2. Human cell and tissue based methods
The generally accepted principle is that a new method (alternative method) must be at least as relevant and reproducible as the existing methods if it is to replace them. In evaluation of the safety of chemical substances in man, human-based cell and tissue models will be needed to replace animal experiments.

3. 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. Already now techniques enable automation of cell culture tests and even tissue models.

4. Validation and GLP
The test performed must give reliable and reproducible results. The test conditions must be traceable. Therefore, validation of test methods and performance in compliance with GLP are the crucial elements.

5. Knowledge and information sharing, education and training
Risk assessment is today mainly based on animal experiments. Thus knowledge and information sharing, education and training are essential in promoting alternatives. It is important that all key players i.e. students, researchers and decisions makers in industry and regulatory bodies are involved. In this the roles of centers that focus on alternatives, the network of the centers, university education and regularly organised national and international meetings are of utmost importance.