## Animal Experiment Authorisation: Searching for Literature and Information on Alternative Methods

Barbara Grune (Presenting Author), Andreas Luch, Antje Doehrendahl, Susanne Skolik, and Daniel Butzke ZEBET at the Federal Institute for Risk Assessment

The European Directive regulating the use of sentient animals for experimental and other scientific purposes requires that live animals may only be used if the specific scientific goals pursued cannot be achieved by any other means (i.e. non-animal procedures). In case animal research is permissible the methods applied must ensure that both numbers of animals used and suffering of individual animals are kept at the lowest level possible.

As a result there are legal requirements for identifying and harnessing all appropriate methods available to replace, reduce and refine such animal use. Scientists are obliged to undertake a valid indispensability search prior to applying for an animal experiment at authorising bodies. The aim of an indispensability search is to exclude all possibility of the presence of (i) a suitable alternative method that can be applied instead, (ii) usable results from comparable previous animal experiments, and (iii) results from other research suited to anticipate the outcome of the planned experiment. This obligatory search has to consider the current state of scientific knowledge exhaustively. Only when the availability of a suitable alternative method or usable scientific results has been excluded in a valid search procedure, and based upon the current state of knowledge, an animal experiment may be approved indispensable to reach a vindicatory scientific objective.

The amount of accessible information grows rapidly and largely uncontrolled. Buried within this ever-growing "thicket" important innovative ideas and seminal research have become hidden over time. Scientific meta-databases like *PubMed* provide the opportunity to search almost 20 Million documents at the same time via simple and usually general keywords. After retrieving the hit list, great efforts are thus necessary to sort out irrelevant literature, to elaborate effective combination of search terms (search strategy) for subsequent queries and at the same time taking care of not losing the track. Thus, a structured search for scientific literature on a specific candidate alternative method is key in the effort to ease the handling of the ever-growing literature and to demonstrate compliancy with animal protection obligations.