





Theme 4 Information systems and databases

Session 4.1 3Rs database and services – developments worldwide

ECVAM's Database Service on Alternative Methods (DB-ALM) – Online

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Summary

The Db-ALM of ECVAM, requested by the European Commission and Parliament, provides ready-to-use information on various aspects of animal alternatives on evaluated data sheets. The first Internet version has been available since 2001 (<http://ecvam-sis.jrc.it>). In 2006, access shall be provided, in addition, to the INVITTOX protocol collection, to method-summary descriptions, test results, details on validation studies, and to a new data sector on (Q)SARs. The Db-ALM information content is created in collaboration with external experts or originates from validation studies. The current Internet version can refer to 4667 registered users from 67 countries with a 26 % increase over the past 12 months. The progress of Db-ALM is monitored by ECVAM's Scientific Advisory Committee.

Keywords: European policies, ECVAM, factual databases, animal use alternatives, toxicity tests, *in vitro*, QSAR

Rationale

The establishment of DB-ALM (formerly known as the “SIS” – Scientific Information Service) is one of the principal objectives of the European Centre for the Validation of Alternative Methods (ECVAM), created by the European Commission in response to a requirement of Directive 86/609/EEC (1986) on the protection of animals used for experimental and other scientific purposes. The DB-ALM shall provide information on the use of animal alternatives in biomedical sciences and serve Commission Services, National Authorities, Industry, the Animal Welfare Movement, as well as scientists.

Information content and supplementary activities

The DB-ALM is characterised by ready-to-use information provided as evaluated data sheets. It covers various aspects of animal alternatives at any stage of development or validation (Janusch and Balls, 1999; Roi and Burke, 2004). A recent ini-

tiative led to the extension of DB-ALM to include also information on computer modelling, such as (Q)SARs, in addition to the *in vitro* techniques. The DB-ALM focus on toxicity assessments and a short *résumé* of the main data files, together with an overview of the current information content referring to 21 different topics, are included hereafter:

In Vitro techniques

Methods

The DB-ALM provides full method-descriptions, based on extensive literature reviews with information on the topic area, rationale for the method development and its applications, basic procedure, type of tested materials including the state of development, validation or regulatory acceptance. To address various user profiles, which turned out to be very heterogeneous, the method descriptions are provided at various levels of information content, either as summary record or as detailed protocols (INVITTOX protocol collection (Janusch et al., 1997; Ungar, 1993) for their performance in laboratories.



Tests

Tests are described with their experimental details and results carried out with methods/test systems included in DB-ALM.

Validation studies

One of the main tasks of ECVAM is to assess the scientific validity of tests for specific purposes through the co-ordination of complex international validation studies. The DB-ALM provides details on these studies, including summary descriptions of the study, the test protocols and results, and also indicates the participating organisations and lists the background documentation.

Computational modelling – (Q)SARs

A new data sector on (Q)SARs is under development and will provide information on evaluated (Q)SAR models as summary records, together with the training and test set of chemicals, and, where available, summary descriptions of validation exercises.

Supplementary activities

Based on the competence and experience gained in the specific field, the DB-ALM staff is responsible for two additional activities that are briefly outlined hereafter. Both are supported by either the available database tools or by the data content of DB-ALM itself and together make DB-ALM a comprehensive information service on animal alternatives of ECVAM.

The ECVAM website

The ECVAM website, established in 2002, provides details on in-house and international collaborative activities of the entire validation centre. An overview of all validation activities is given, and all validated methods are reported together with a list of the main publications of ECVAM. The website is an interactive service with various download facilities and now also provides support to the various international working groups of ECVAM. An easy-to-use registration facility is available for those who want to be updated regularly on news from ECVAM.

The Thesaurus

A pilot project has been undertaken and concluded by the international Task Force on Alternatives Databases of ECVAM to identify, based on a selected set of publications, the terminology most commonly used by scientists active in animal alterna-

Tab. 1: DB-ALM Information content “*In vitro* techniques” (August 2005)

Data file	Data sheet number
Method Summary Descriptions	65
INVITTOX protocols	126
Evaluation/Validation Studies	32
Test Results	4219
Bibliographic References	3781

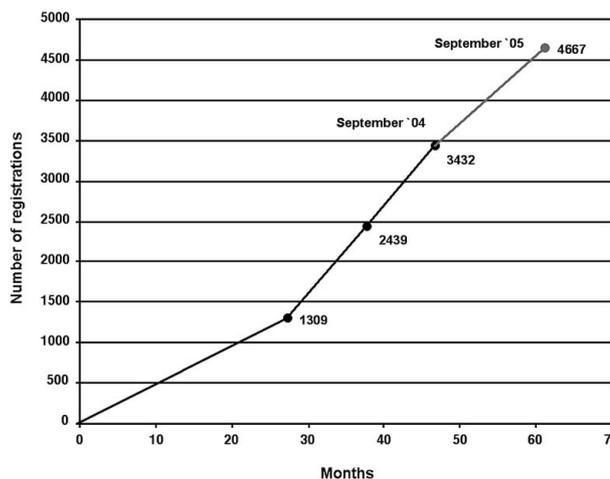


Fig. 1: Registration Tendency (September 2005)

tives topic area. This also in reply to the recommendations outlined in the ECVAM workshop on Alternatives Databases (Janusch et al., 1997; Grune et al., 2004). The availability of this thesaurus, first as an open source list, for practical applications by the end-user, is linked to the release on the Internet of the new DB-ALM version, which is foreseen for the end of 2005/start of 2006.

Origin of information

The proper running of the DB-ALM relies on two main “pillars”: Compilation of data sheets (creation and updating of the database contents) and Informatics (software developments and hardware requirements for data management and access).

The DB-ALM operates in collaboration with external experts engaged by study contracts and by bilateral contacts between the DB-ALM staff and scientists (particularly for the definition and updating of the *INVITTOX* protocols). It also incorporates the information provided by formal validation studies (Janusch and Balls, 1999).

The priority topics for DB-ALM are defined on the basis of a proposal put forward by the co-ordinator of the DB-ALM at the beginning of each year. The progress of the DB-ALM is monitored by the ECVAM Scientific Advisory Committee (ESAC) and DB-ALM Advisory Board.

Impact analysis of DB-ALM

The user profiles turned out to be very heterogeneous and a statistical impact analysis of DB-ALM in September 2005 revealed that DB-ALM can now refer to 4667 registered users from 67 countries, with a 26% increase in registrations during the past 12 months (fig.1). The current DB-ALM went online first in 2001. Major customers are the USA (22%), UK (15%), India (13%), Germany and Italy (7% each), and France and Spain (6% each). User profiles include: Academia (45%),

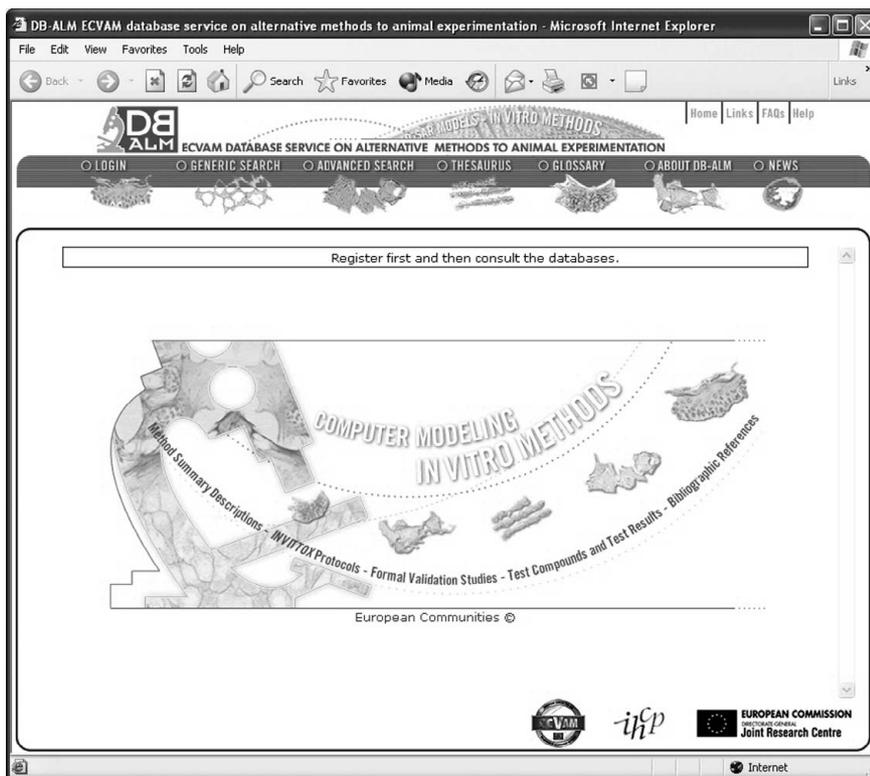


Fig. 2: New Homepage DB-ALM <http://ecvam-dbalm.cec.eu.int> (valid in 2006)

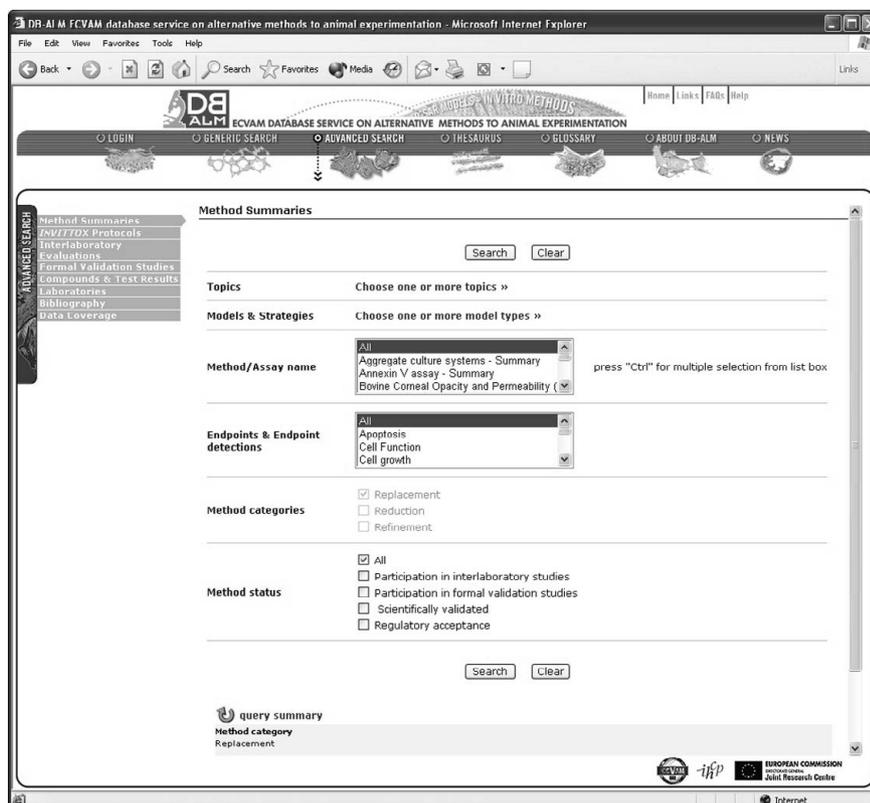


Fig. 3: Method summary search screen

Industry (31%), National Authorities and Commission Services (14%), and others.

Internet addresses

Current DB-ALM version: <http://ecvam-sis.jrc.it> (until 2006)

ECVAM website: <http://ecvam.jrc.it>

DB-ALM in 2006

The new version of DB-ALM is already running internally at ECVAM for trial and has been used for the first time also for external data entry by external international experts. In 2006, public access will be opened to this entirely revised Internet version of ECVAM's database service, which will replace the current Internet version known as "SIS (<http://ecvam-sis.jrc.it>)". A preview of the new homepage, the main portal to all data sectors, together with a few database displays is included hereafter. In addition to the already available *INVITTOX* protocol collection, method-summary descriptions will be included, as well as details on formal validation studies and test results. Furthermore, access to the newly developed data sector on (Q)SARs will also be allowed (fig. 2, 3, 4 and 5).

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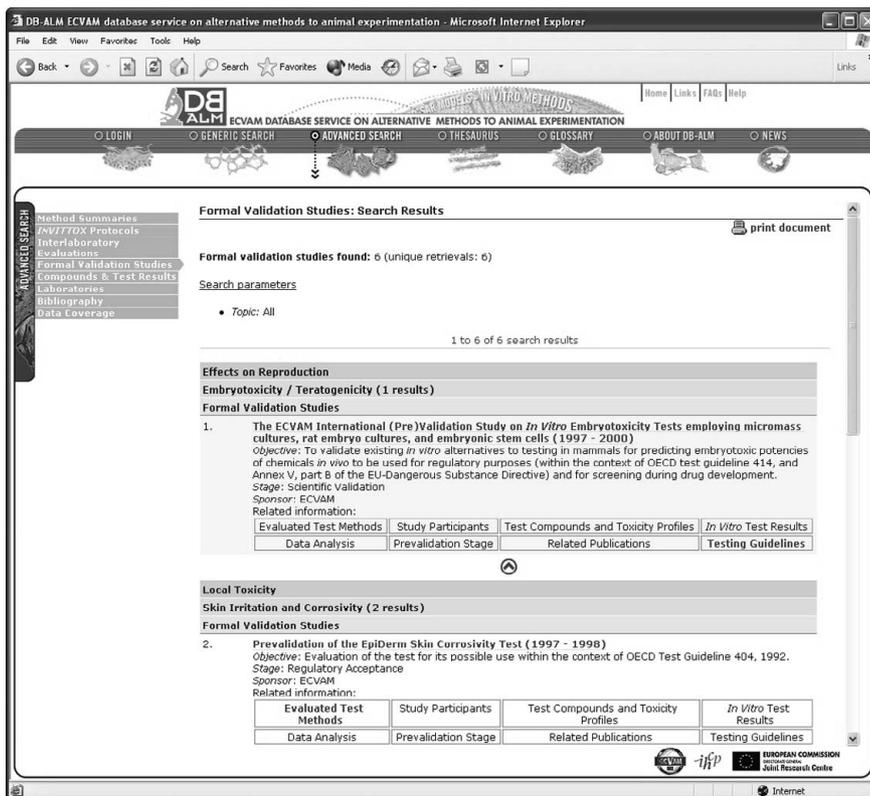


Fig. 4: Method Summary Database: display of search results and access to the related information

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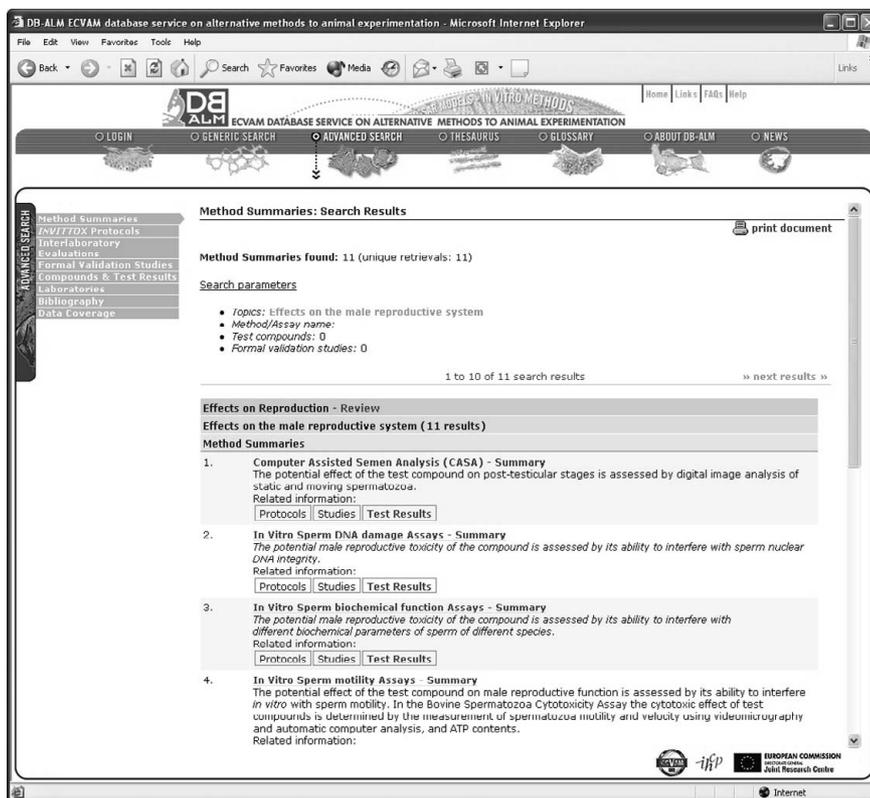


Fig. 5: Validation Study Database: display of search results and access to the related information