

DLE - Drug Laboratory Effects

Drug Laboratory Effects Knowledge Base

The effect of drugs on laboratory tests can make the interpretation of the test difficult, but Drug Laboratory Effects knowledge base offers a comprehensive solution that brings financial and time savings to organisations. The DLE knowledge base is a product for hospitals and clinical laboratories. DLE is highly detailed and constantly up-to-date and it is developed by experts to experts. DLE is a unique product in Europe.

In some cases the drug can have a drastic effect on a laboratory test result. Clinicians don't always have time or opportunity to check the possible effects of drugs on the results of laboratory tests. This may lead to erroneous conclusions, unnecessary additional laboratory tests and examinations, and even unnecessary drug treatments. In many handbooks and databases there is information about drug effects on laboratory tests, but this information does not always reach clinicians.

The DLE coding scheme has turned out to be a very suitable way to describe the knowledge of drug effects on laboratory tests in a format used by computer software. Drugs are coded using both the ATC code, which is the international standard for drug coding, and generic drug name in English.

The first laboratory tests to be coded were the ones which most often are subject to misinterpretations. The most important of those are hormones, enzymes and proteins.

The work will never be finished, as new information about drug effects on laboratory tests as well as information about totally new drugs is collected continuously. The previously coded laboratory tests are continuously updated as new information about drug effects is obtained.

The coding of the DLE knowledge base is carried out by experts in laboratory medicine. Each coded drug effect on a laboratory test is based on a consensus of at least two independent experts. The DLE knowledge base also includes a list of the references which have been used in the coding process.

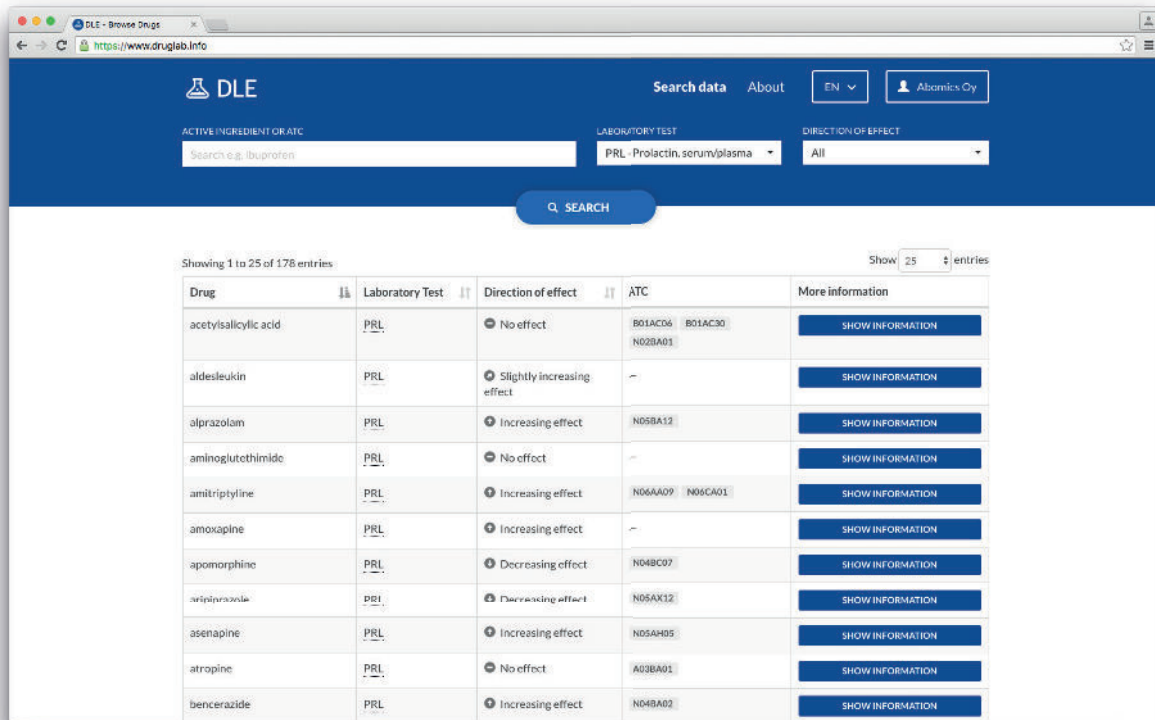
The DLE knowledge base is unique in Europe. The aim is to develop a language independent knowledge base which could be included in any laboratory information system.



Features of each drug effect on a laboratory test:

1. Route of administration (oral, parenteral)
2. Direction and strength of effect
3. Level of documentation
4. Sex of patient (males, females, or both)
5. Age of patient (children, adults, or both)
6. frequency of effect
7. Clinical significance of effect

Cloud-based Web Solution



The screenshot shows the DLE web application interface. At the top, there is a search bar with the text "Search e.g. ibuprofen" and a "SEARCH" button. Below the search bar, there are filters for "LABORATORY TEST" (set to "PRL - Prolactin, serum/plasma") and "DIRECTION OF EFFECT" (set to "All"). The main content area displays a table with 178 entries, showing the first 25. The table has columns for Drug, Laboratory Test, Direction of effect, ATC, and More information. Each row includes a "SHOW INFORMATION" button.

Drug	Laboratory Test	Direction of effect	ATC	More information
acetylsalicylic acid	PRL	No effect	B01AC06 B01AC30 N02BA01	SHOW INFORMATION
aldesleukin	PRL	Slightly increasing effect	~	SHOW INFORMATION
alprazolam	PRL	Increasing effect	N05BA12	SHOW INFORMATION
aminoglutethimide	PRL	No effect	~	SHOW INFORMATION
amitriptyline	PRL	Increasing effect	N06AA09 N06CA01	SHOW INFORMATION
amoxapine	PRL	Increasing effect	~	SHOW INFORMATION
apomorphine	PRL	Decreasing effect	N04BC07	SHOW INFORMATION
aripiprazole	PRL	Decreasing effect	N05AX12	SHOW INFORMATION
asenapine	PRL	Increasing effect	N05AH05	SHOW INFORMATION
atropine	PRL	No effect	A02BA01	SHOW INFORMATION
bencezazide	PRL	Increasing effect	N04BA02	SHOW INFORMATION

The DLE user interface is intuitive and simple, showing only the necessary information for the user. The search can be made based on active ingredient or ATC code. The search results can be filtered based on a laboratory test or the direction of effect. DLE is available as cloud-based web application or integrated solution (XML).

Features of each drug effect on a laboratory test:

- Seven different features of each effect are included in the code
- Drugs are coded using both the ATC code and generic names
- Every code is based on a consensus of at least two independent experts
- A complete list of references is included
- Developed by acknowledged experts in laboratory medicine and medical informatics
- Can easily be linked to other medical software or hospital information systems
- The DLE knowledge base contains over 5500 coded drug effects

Database maintained by 

Abomics Ltd – Genomic Medicine Expertise

Abomics is a health technology firm that provides healthcare professionals with new approaches to personalized medicine. The company was founded in 2013 in Turku, Finland and comprises of admitted specialists in several fields of science. Abomics designs cutting-edge integrated decision support tools in collaboration with providers of EHR systems and laboratory IT systems. All Abomics' products have been designed to meet the extensive requirements of healthcare professionals.



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