

Prepared for publication by
JOHN DUFFUS, RITA CORNELIS, RENÉ DYBKÆR, WOLF KUELPMANN,
MONICA NORDBERG, IVAN BRUUNSHUUS

Part XX. Properties and units in clinical and environmental human toxicology
(IUPAC Technical Report)

Abstract:

This document describes the introduction of the concept of property in the field of clinical and environmental human toxicology for the presentation of results of clinical laboratory investigations. It follows the IFCC-IUPAC systematic terminological rules and attempts to create a common base for communication between the clinical chemist, the medical practitioner, the human toxicologist, and the environmental toxicologist.

The term designating a substance being a toxicant may be an international nonproprietary name (INN), a generic name, a registered trade name, a fantasy name, or other. This causes difficulties in the transmission of requests and reports on properties involving such substances in biological fluids and environmental media to and from laboratories, to the end user, and in the collating of this information from different sources.

The document comprises a list of properties of human and environmental systems involving toxicants for use in transmitting medical laboratory data. The document recommends terms based on the format developed by the IFCC and IUPAC to facilitate interaction between disciplines and unambiguous interpretation of data, e.g. for purposes of risk interpretation. Systematic terms are presented together with a code (identified by the letters NPU) for each.

The complete C-NPU Database may be found at: <http://dior.imt.liu.se/C-NPU>

PROPERTIES AND UNITS IN THE CLINICAL LABORATORY SCIENCES

Coding scheme for clinical laboratories

Since 1995, the Commission of Nomenclature, Properties and Units (C-NPU of IUPAC and IFCC) has published nine papers on a coding system (i.e. a structure or a frame for the pairs of codes and meaning) and a coding scheme (i.e. the pairs of codes and their meaning), for clinical laboratories. "Meanings" can be descriptions of quantities which are measured or observed in laboratory medicine. A further four papers are now added with codes in the domains of Allergology, Microbiology, Pharmacology and Clinical chemistry. The codes offer a unique and sufficient information about the quantities and is therefore extremely valuable in the transfer of information between laboratories and to the end users of laboratory information. The codes make it possible to automatically translate the data to any language. So far the meanings have been translated into 18 languages, including many of the European languages, Arabic and Cantonese.

The coding scheme thus comprises a total of 10083 pairs with the international coding scheme identifier "NPU" for properties, and a further 13379 pairs for elements. These latter ones are for use primarily as results of taxonomic investigations; example:

NPU16294 Secr(Orophar)- Bacterium+fungus; taxon = ATCC12600(Staphylococcus aureus).ATCC12344(Streptococcus pyogenes).

NPU04062 U-Benzodiazepines; taxon = CAS846-49-1(Lorazepam); CAS439-14-5(Diazepam)

In order to test the functionality, the coding scheme has been successfully mapped to the various codes which are presently used in 45 different clinical laboratories in Denmark. To accommodate local needs some new codes identified by 'DNK' have been added.

The domains presently covered by the IUPAC/IFCC coding scheme are Allergology, Clinical Chemistry, IOC prohibited Drugs, Microbiology, Pharmacology, Reproduction and Fertility, Thromboses and Haemostasis, Trace Elements. The schemes have been prepared in collaboration with professional groups and organisations which represent the various specialities.

To be prepared are coding schemes for Molecular Biology, Blood banking, Tissue Typing, Inborn Errors, Tumor Markers.

The coding scheme is accessible on www.ifcc-iupac.suite.dk.

Henrik Olesen

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The following documents are available for download as microsoft word for windows files. Due to their technical nature these documents are generally very long.

[X. PROPERTIES AND UNITS IN GENERAL CLINICAL CHEMISTRY](#)

[VIII. PROPERTIES AND UNITS IN CLINICAL MICROBIOLOGY](#)

[XII. PROPERTIES AND UNITS IN CLINICAL PHARMACOLOGY AND TOXICOLOGY](#)

[XVI. PROPERTIES AND UNITS IN CLINICAL ALLERGOLOGY](#)