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**PROPERTIES AND UNITS IN THE CLINICAL
LABORATORY SCIENCES:
Part III. Elements (of properties) and their code values**

(Technical Report)
(IUPAC—IFCC 1997)

Prepared for publication by

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Properties and units in the clinical laboratory sciences: Part III. Elements (of properties) and their code values (Technical Report)

Synopsis

We have prepared a coding scheme for the elements (concepts) in the subject field "clinical laboratory sciences". The scheme uses code values taken from international coding schemes that provide code values for the elements in the various subspecialties which are represented in the subject field.

The coding scheme for elements is accessible on Internet from the C-NPU Home page address:
http://inet.uni-c.dk/home/ifcc_iupac_cnpu

Preface

The present document is the third part of a series on properties observed in the clinical laboratory sciences initiated in 1987.

The series will comprise the five general parts (I-IV and XI) and a series of special parts:

- I Syntax and semantic rules
- II Kinds-of-property
- III Elements (of properties) and their code values
- IV Properties and their code values
- V Properties and units in Thrombosis and Haemostasis
- VI Properties and units in IOC prohibited Drugs
- VII Properties and units in Inborn Errors of Metabolism
- VIII Properties and units in Clinical Bacteriology
- IX Properties and units in Trace elements
- X Properties and units in General Clinical Chemistry
- XI Coding systems - structure and guidelines
- XII Properties and units in Clinical Pharmacology and Toxicology
- XIII Properties and units in Reproduction and Fertility
- XV WWW databases
- XVI Properties and units in Clinical Allergology

The size and complexity of part III, IV and XV is such that they will be presented in electronic format.

The overall aim is access by electronic media of:

"Compendium of terminology and nomenclature of properties in clinical laboratory sciences" [1].

"Glossary of terms in quantities and units in clinical chemistry" [2].

"Properties and units in the clinical laboratory sciences" .

DEFINITIONS

code value: result of applying a coding scheme to an element in a coded set [3]

coding scheme: collection of rules that maps the elements of one set on to the elements of a second set [3]

international coding scheme identifier, ISCI: identifier assigned to uniquely identify a registered coding scheme for use in information interchange [3]

subject field: section of human knowledge, the borderlines of which are defined from a purpose-related point of view [4]

NOTE - In terminology science and its practical applications, the subject field is determined through the establishment of systems of concepts

term list: collection of terms to be subjected to further terminology work [4]

INTRODUCTION

Authoritative coding schemes in the health care domain are much needed for the electronic exchange of information on assays across language and cultural barriers.

In the clinical laboratory sciences there is a tradition for systematic expression of laboratory examination [5] and the number of examinations performed is considerable, that is 5 to 10 per inhabitant per year.

To facilitate data exchange, a coding scheme for terms indicating properties has been prepared (part IV of this series). The elements (words, concepts, building blocks) of these terms for properties are listed as a term list in the present document in the form of a coding scheme comprising:

1. An international coding scheme identifier, and a code value representing a concept.
2. The linguistic expression of the concept in English and in some other language.

The listings are given both in code value order and in alphabetic order. The size of the listings is considerable, and they are therefore accessible on Internet only. This also facilitates updating.

The reason for codifying is threefold:

1. The code value mostly refers to a concept defined by the authority issuing the coding scheme.
2. The concept can be expressed directly in the local idiom, without need of translation.
3. The code value ensures a correct expression and spelling throughout the terms for properties.

The sources of code values are:

ATCC	American Type Culture Collection
CAS	Chemical Abstract Service. Spelling of pharmaceutical substances is primarily according to INN
CCUG	Culture Collection, University of Göteborg, Sweden
CIP	Collection de l'Institut Pasteur, Paris, France
EC	Enzyme Commission of the International Union of Biochemistry and Molecular Biology. Enzyme Nomenclature, Recommendation (1992)*
IAM	Institute of Applied Microbiology, Tokyo, Japan
JCM	Japan Collection of Microorganisms
MSH	Medical Subject Headings, National Institutes of Health, National Library of Medicine, Bethesda, USA
NCTC	National Collection of Type Cultures, Colindale, United Kingdom
QU	Given by IFCC-IUPAC/C-NPU
ECRI	Universal Medical Device (UMD) Nomenclature System™. Product Categories Thesaurus 1996. Copyright 1995 by ECRI.

* The term aminotransferase (EC 2.6.x.x) used in Recommendations 1964, 1978 and 1984 has been altered to transaminase in the 1992 recommendation. Chemical Abstract Service has no plan to change their preferred nomenclature for aminotransferases to transaminases, and this stand has been followed by C-NPU.

The list will be supplemented on an ad hoc basis, in particular with code values for viruses, and anatomical sites.

In some cases both a CAS and an EC code value are available. In these cases priority is given to the CAS code value, and the EC code value is given as a note.

While CAS code values are at hand for acids and bases, these compounds occur as anions and cations in biological fluids. For these QU code values apply.

EXAMPLES

CAS69-72-7	Salicylic acid
QU60927	Salicylate
CAS99-66-1	Valproic acid
QU60926	Valproate

The bulk of the code values are for use in the result part of a clinical laboratory report, for example the outcome of a microbiological examination, the findings in doping control, the identification of an unusual haemoglobin or identifying an inborn error of metabolism.

EXAMPLE

[NPU06073]

U—Bacterium; taxon = *Escherichia coli* (ATCC11775) ; *Proteus vulgaris* (ATCC13315)

The code values may also be used in constructing further code strings for properties when the need arises.

The term list is not for publication in paper form, but is for access on the Internet from the C-NPU

Home page address:

http://inet.uni-c.dk/home/ifcc_iupac_cnpu

REFERENCES

- [1] IUPAC–IFCC (International Union of Pure and Applied Chemistry–International Federation of Clinical Chemistry), 1995. Compendium of terminology and nomenclature of properties in clinical laboratory sciences. "The Silver Book". Prepared for publication by Rigg JC, Brown SS, Dybkær R, Olesen H. Oxford: Blackwell Science, 290 pp.
- [2] IUPAC–IFCC (International Union of Pure and Applied Chemistry– International Federation of Clinical Chemistry, Commission/Committee on Quantities and Units(in Clinical Chemistry)), 1995. Glossary of terms in quantities and units in clinical chemistry. Prepared for publication by Lehmann HP, Fuentes-Arderiu X, Bertello, LF. *Pure and Appl Chem* 1996; 68: 957-1000. *Biochim Clin* 1995; 19: 471-502.
- [3] International Standard ISO/IEC 7826-1:1994. Information technology - General structure for the interchange of code values. Part 1: Identification of coding schemes.
- [4] International Standard ISO 1087:1990. Terminology - Vocabulary.
- [5] IUPAC–IFCC (International Union of Pure and Applied Chemistry–International Federation of Clinical Chemistry), 1967. Quantities and units in clinical chemistry including Recommendation 1966. Prepared for publication by Dybkær R, Jørgensen, K. Copenhagen: Munksgaard, 102 pp.

SAMPLE PAGE

English; alphabetic order

CAS77337-76-9		Acamprosate
MSH95D000048		Acanthamoeba
QU66000		Acanthamoeba astronyxis
QU66001		Acanthamoeba castellanii
QU66002		Acanthamoeba culbertsoni
QU66003		Acanthamoeba polyphaga
QU66004		Acanthamoeba rhyssodes
CAS56180-94-0		Acarbose
CAS37517-30-9		Acebutolol
CAS34381-68-5		Acebutolol Hydrochloride
CAS77-66-7		Acecarbromal
CAS827-61-2		Aceclidine
CAS89796-99-6		Aceclofenac
CAS77-46-3		Acedapsone
CAS80-03-5		Acediasulfone
CAS127-60-6		Acediasulfone Sodium
CAS15302-00-8		Acefylline Piperazine
CAS642-83-1		Aceglatone
CAS12607-92-0		Aceglutamide Aluminium
CAS53164-05-9		Acemetacin
CAS152-72-7		Acenocoumarol
CAS61-00-7		Acepromazine
CAS78273-80-0		Aceroxatidine
CAS93793-83-0		Aceroxatidine Hydrochloride
CAS75-07-0		Acetaldehyde
EC1.2.1.10		Acetaldehyde dehydrogenase (acetylating)
EC3.5.1.51	4-	Acetamidobutyryl-CoA deacetylase
CAS97-44-9		Acetarsol
EC2.8.3.8		Acetate CoA-transferase
EC2.7.2.1		Acetate kinase
EC2.7.2.12		Acetate kinase (pyrophosphate)
EC6.2.1.1		Acetate-CoA ligase
EC6.2.1.13		Acetate-CoA ligase (ADP-forming)
CAS59-66-5		Acetazolamide
CAS1424-27-7		Acetazolamide Sodium
CAS299-89-8		Acetiamine
ATCC33288		Acetivibrio cellulolyticus
ATCC33324		Acetivibrio ethanolgignens
ATCC49731		Acetivibrio multivorans
EC4.1.1.4		Acetoacetate decarboxylase
EC6.2.1.16		Acetoacetate-CoA ligase
MSH94D000090		Acetoacetate
EC3.1.2.11		Acetoacetyl-CoA hydrolase
EC1.1.1.36		Acetoacetyl-CoA reductase
ATCC14835		Acetobacter liquefaciens
ATCC29683		Acetobacterium woodii
ATCC33488		Acetogenium kivui
CAS968-81-0		Acetohexamide

SAMPLE PAGE

English; coding scheme identifier order

ATCC14835		Acetobacter liquefaciens
ATCC29683		Acetobacterium woodii
ATCC33288		Acetivibrio cellulolyticus
ATCC33324		Acetivibrio ethanolignens
ATCC33488		Acetogenium kivui
ATCC49731		Acetivibrio multivorans
CAS12607-92-0		Aceglutamide Aluminium
CAS127-60-6		Acediasulfone Sodium
CAS1424-27-7		Acetazolamide Sodium
CAS152-72-7		Acenocoumarol
CAS15302-00-8		Acefylline Piperazine
CAS299-89-8		Acetiamine
CAS34381-68-5		Acebutolol Hydrochloride
CAS37517-30-9		Acebutolol
CAS53164-05-9		Acemetacin
CAS56180-94-0		Acarbose
CAS59-66-5		Acetazolamide
CAS61-00-7		Acepromazine
CAS642-83-1		Aceglatone
CAS75-07-0		Acetaldehyde
CAS77337-76-9		Acamprosate
CAS77-46-3		Acedapsone
CAS77-66-7		Acecarbromal
CAS78273-80-0		Aceroxatidine
CAS80-03-5		Acediasulfone
CAS827-61-2		Aceclidine
CAS89796-99-6		Aceclofenac
CAS93793-83-0		Aceroxatidine Hydrochloride
CAS968-81-0		Acetohexamide
CAS97-44-9		Acetarsol
EC1.1.1.36		Acetoacetyl-CoA reductase
EC1.2.1.10		Acetaldehyde dehydrogenase (acetylating)
EC2.7.2.1		Acetate kinase
EC2.7.2.12		Acetate kinase (pyrophosphate)
EC2.8.3.8		Acetate CoA-transferase
EC3.1.2.11		Acetoacetyl-CoA hydrolase
EC3.5.1.51	4-	Acetamidobutyryl-CoA deacetylase
EC4.1.1.4		Acetoacetate decarboxylase
EC6.2.1.1		Acetate-CoA ligase
EC6.2.1.13		Acetate-CoA ligase (ADP-forming)
EC6.2.1.16		Acetoacetate-CoA ligase
MSH94D000090		Acetoacetate
MSH95D000048		Acanthamoeba
QU66000		Acanthamoeba astronyxis
QU66001		Acanthamoeba castellanii
QU66002		Acanthamoeba culbertsoni
QU66003		Acanthamoeba polyphaga
QU66004		Acanthamoeba rhyodes