Abbreviations for names of enzymes of diagnostic importance¹

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The International Union of Biochemistry (IUB) has recommended for enzymes the appropriate use of code numbers, systematic names, and trivial names, but not abbreviations (Enzyme Commission of IUB, 1965). Its Commission on Biochemical Nomenclature has recently affirmed its discouragement of abbreviations for names of enzymes (E. C. Webb, personal communication). Nevertheless the haphazard use of such abbreviations is widespread. It is not unusual to see a book, or journal, or proceedings of a symposium (in medicine, chemical pathology, or biochemistry) containing two or more different abbreviations for the same enzyme. In clinical biochemistry this is of great importance because of the use of these abbreviations in clinical reports, a tendency which is becoming unavoidable with the introduction of computer-controlled data processing systems.

The Association of Clinical Biochemists, the Association of Clinical Pathologists, and the Royal College of Pathologists recently set up a joint working party to make recommendations concerning the standardization of enzyme assay procedures for clinical biochemistry. Because of the confusion over abbreviations, the members of the working party (not acting as representatives of the sponsoring organizations) decided that it would be useful to prepare a provisional list for those enzymes most frequently assayed in clinical biochemistry laboratories. The abbreviations (strictly contractions) follow a consistent pattern and are in all instances of two or three letters for simplicity and to permit their use in laboratory computers of restricted word length. They are in capital letters, without full stops, following the convention for abbreviations for the names of chemical substances such as ACTH (Ellis, 1971).

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EC Number	Trivial Name	Abbreviation
1.1.1.1	Alcohol dehydrogenase	AD
1.1.1.14	Iditol dehydrogenase	ID
1.1.1.27	Lactate dehydrogenase	LD
	Hydroxybutyrate dehydrogenase	HBD
1.1.1.37	Malate dehydrogenase	MD
1.1.1.42	Isocitrate dehydrogenase	ICD
1.1.1.43	Phosphogluconate dehydrogenase	PGD
1.1.1.49	Glucose-6-phosphate dehydrogenase	GPD
1.2.1.12	Triosephosphate dehydrogenase	TPD
1.4.1.3	Glutamate dehydrogenase	GMD
1.6.4.2	Glutathione reductase	GTD
1.11.1.6	Catalase	CTS
2.1.3.3.	Ornithine carbamoyl transferase	OCT
2.2.1.1	Transketolase	TKT
2.3.2.1	Glutamyltransferase	GMT
2.6.1.1	Aspartate transaminase	AST
2.6.1.8	Alanine transaminase	ALT
2.7.1.40	Pyruvate kinase	PK
2.7.3.1	Creatine kinase	CK
2.7.4.3	Adenylate kinase	AK
2.7.5.1	Phosphoglucomutase	PGT
2.7.7.12	Hexose-1-phosphate uridylyl transferase	HUT
3.1.1.3	Lipase	LPS
3.1.1.8	Cholinesterase	CHS
3.1.3.1	Alkaline phosphatase	ALP
3.1.3.2	Acid phosphatase	ACP
3.1.3.5	5'-Nucleotidase	NTP
3.2.1.1	Amylase	AMS
3.2.1.31	β-Glucuronidase	GRS
3.4.1.1	Leucine aminopeptidase	LAS
3.4.4.1	Pepsin	PPS
3.4.4.4	Trypsin	TPS
3.5.3.1	Arginase	ARS
3.5.4.3	Guanine deaminase	GDS
4.1.2.13	Aldolase	ALS
4.2.1.1	Carbonic anhydrase	CAS
5.3.1.1	Triosephosphate isomerase	TPI
5.3.1.9	Glucose phosphate isomerase	GPI

Notes

1 We recommend the use of terminal D and not

DH as the abbreviation for dehydrogenase. This is unambiguous, it saves a letter, and avoids confusion with the recognized use of terminal H as an abbreviation for hormone, as in ADH: antidiuretic hormone.

2 We should prefer the trivial name 'sorbitol dehydrogenase', abbreviation SD, for this enzyme.

3 Assay for 'heart-specific' lactate dehydrogenase is frequently preferred using a different substrate, and this name and abbreviation are in common use as a functional description.

4 In clinical work the term 'aminotransferase' has not been widely accepted and both physicians and laboratory workers are continuing and will continue to talk of serum 'transaminase'. The use of the shorter aspartate- and alanine- is becoming accepted. It is logical to suggest terminal T as an abbreviation for both transferase in general and transaminase in

particular. We therefore recommend AST and ALT as the abbreviations (which are quite widely used) and not ASAT and ALAT. The use of GOT and GPT should be duly abandoned. SGOT and SGPT should certainly never be used; they give rise to such tautologies as 'plasma SGOT'.

5 This is preferred to LAP because terminal P is used for phosphatase.

6 The IUB trivial name is fructosediphosphate aldolase. However, all mammalian aldolases use both fructose-1,6-diphosphate and fructose-1-phosphate as substrates.

References

- Enzyme Commission of I.U.B. (1965). *Enzyme Nomenclature*. Amsterdam, Elsevier.
Ellis, G. (1971) ed. *Units, Symbols, and Abbreviations*. London, Royal Society of Medicine.