ENZYME NOMENCLATURE
1984

RECOMMENDATIONS OF THE NOMENCLATURE COMMITTEE
OF THE INTERNATIONAL UNION OF BIOCHEMISTRY
ON THE NOMENCLATURE AND
CLASSIFICATION OF ENZYME-CATALYSED REACTIONS

This edition is a revision of the Recommendations (1978) of the Nomenclature Committee of IUB, and has been approved for publication by the Executive Committee of the International Union of Biochemistry

Copy prepared for publication by Edwin C. Webb

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Number	Recommended Name	Reaction
2.8.3.10	Citrate CoA-transferase	Acetyl-CoA + citrate = acetate + (3*S*)-citryl-CoA
2.8.3.11	Citramalate CoA-transferase	Acetyl-CoA + citramalate = acetate + (3*S*)-citramalyl-CoA
2.8.3.12	Glutaconate CoA-transferase	Acetyl-CoA + (*E*)-glutaconate = acetate + glutaconyl-1-CoA
2.8.3.13	Succinate—hydroxymethylglutarate CoA-transferase	Succinyl-CoA + (*S*)-3-hydroxy-3-methylglutarate = succinate + 3-hydroxy-3-methylglutaryl-CoA

3. HYDROLASES

These enzymes catalyse the hydrolysis of various bonds. Some of these enzymes pose problems because they have a very wide specificity, and it is not easy to decide if two preparations described by different authors are the same, or if they should be listed under different entries.

While the systematic name always includes 'hydrolase', the recommended name is, in most cases, formed by the name of the substrate with the suffix *-ase*. It is understood that the name of the substrate with this suffix means a hydrolytic enzyme.

3.1 ACTING ON ESTER BONDS

The esterases are subdivided into those acting on carboxylic esters (3.1.1), thiolesterases (3.1.2), phosphoric monoester hydrolases, the phosphatases (3.1.3), phosphodiester hydrolases (3.1.4), triphosphoric monoester hydrolases (3.1.5), sulfatases (3.1.6), and diphosphoric monoesterases (3.1.7). The nucleases, previously included under 3.1.4, are now placed in a number of new subclasses; the exonucleases (3.1.11-16) and the endonucleases (3.1.21-31).

3.1.1 CARBOXYLIC ESTER HYDROLASES

3.1.1.1	Carboxylesterase	A carboxylic ester + H_2O = an alcohol + a carboxylic acid anion

Number	Other Names	Basis for classification (Systematic Name)	Comments	References
2.8.3.10		Acetyl-CoA:citrate CoA-transferase	The enzyme is a component of EC 4.1.3.6. Also catalyses the transfer of thioacyl carrier protein from its acetyl thioester to citrate	820
2.8.3.11		Acetyl-CoA:citramalate CoA-transferase	The enzyme is a component of EC 4.1.3.22. Also catalyses the transfer of a thioacyl carrier protein from its acetyl thioester to citramalate	818
2.8.3.12		(*E*)-Glutaconate CoA-transferase	Glutarate, (*R*)-2-hydroxyglutarate, propenoate and propanoate, but not (*Z*)-glutaconate, can also act as acceptors	474
2.8.3.13		Succinate:(*S*)-3-hydroxy-3-methylglutarate CoA-transferase	Malonyl-CoA can also act as donor, more slowly	760
3.1.1.1	Ali-esterase, B-esterase, Monobutyrase, Cocaine esterase, Procaine esterase, Methylbutyrase	Carboxylic-ester hydrolase	Wide specificity. Also hydrolyses vitamin A esters	145, 225, 320, 479, 1594, 3301

Number	Recommended Name	Reaction
3.1.1.2	Arylesterase	A phenyl acetate + H_2O = a phenol + acetate
3.1.1.3	Triacylglycerol lipase	Triacylglycerol + H_2O = diacylglycerol + a fatty acid anion
3.1.1.4	Phospholipase A_2	Phosphatidylcholine + H_2O = 1-acylglycerophosphocholine + a fatty acid anion
3.1.1.5	Lysophospholipase	2-Lysophosphatidylcholine + H_2O = glycerophosphocholine + a fatty acid anion
3.1.1.6	Acetylesterase	An acetic ester + H_2O = an alcohol + acetate
3.1.1.7	Acetylcholinesterase	Acetylcholine + H_2O = choline + acetate
3.1.1.8	Cholinesterase	An acylcholine + H_2O = choline + a carboxylic acid anion

[3.1.1.9 Deleted entry: Benzoylcholinesterase; a side reaction of EC 3.1.1.8]

3.1.1.10	Tropinesterase	Atropine + H_2O = tropine + tropate
3.1.1.11	Pectinesterase	Pectin + n H_2O = n methanol + pectate

[3.1.1.12 Deleted entry: previously Vitamin A esterase, now believed to be identical with EC 3.1.1.1]

3.1.1.13	Cholesterol esterase	A cholesterol ester + H_2O = cholesterol + a fatty acid anion
3.1.1.14	Chlorophyllase	Chlorophyll + H_2O = phytol + chlorophyllide
3.1.1.15	L-Arabinonolactonase	L-Arabinono-1,4-lactone + H_2O = L-arabinonate

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