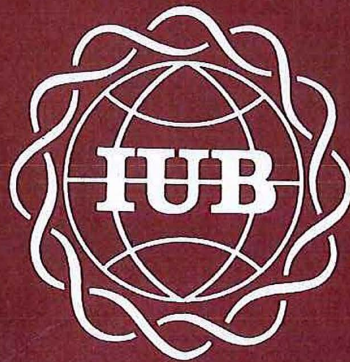


ENZYME NOMENCLATURE

*Recommendations (1978)
of the Nomenclature Committee
of the International Union of Biochemistry*



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ENZYME NOMENCLATURE
1978



RECOMMENDATIONS OF THE NOMENCLATURE COMMITTEE
OF THE INTERNATIONAL UNION OF BIOCHEMISTRY ON THE
NOMENCLATURE AND CLASSIFICATION OF ENZYMES

This edition is a revision of the Recommendations (1972) of the IUPAC-IUB
Commission on Biochemical Nomenclature, and has been approved for
publication by the Executive Committee of the International Union of
Biochemistry.



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Number	Recommended Name	Reaction	Number
<p>While the systematic name always includes 'hydrolase', the recommended name is, in most cases, formed by the name of the substrate with the suffix <i>-ase</i>. It is understood that the name of the substrate with this suffix means a hydrolytic enzyme.</p>			
<p>3.1 ACTING ON ESTER BONDS</p>			
<p>The esterases are subdivided into those acting on carboxylic esters (3.1.1), thioesterases (3.1.2), phosphoric monoester hydrolases, the phosphatases (3.1.3), phosphodiester hydrolases (3.1.4), triphosphoric monoester hydrolases (3.1.5), sulphatases (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 sub-groups: the exonucleases (3.1.11-16) and the endonucleases (3.1.21-31).</p>			
<p>3.1.1 CARBOXYLIC ESTER HYDROLASES</p>			
3.1.1.1	Carboxylesterase	A carboxylic ester + H ₂ O = an alcohol + a carboxylic acid anion	1111
3.1.1.2	Arylesterase	A phenyl acetate + H ₂ O = a phenol + acetate	1112
3.1.1.3	Triacylglycerol lipase	Triacylglycerol + H ₂ O = diacylglycerol + a fatty acid anion	1113
3.1.1.4	Phospholipase A ₂	A lecithin + H ₂ O = 1-acylglycerophosphocholine + an unsaturated fatty acid anion	1114
3.1.1.5	Lysophospholipase	A lysolecithin + H ₂ O = glycerophosphocholine + a fatty acid anion	1115
3.1.1.6	Acetyesterase	An acetic ester + H ₂ O = an alcohol + acetate	1116
3.1.1.7	Acetylcholinesterase	Acetylcholine + H ₂ O = choline + acetate	1117
3.1.1.8	Cholinesterase	An acylcholine + H ₂ O = choline + a carboxylic acid anion	1118

Number	Other Names	Basis for classification (Systematic Name)	Comments	Reference
3.1.1.1	Ali-esterase, B-esterase, Methylbutyrase, Monobutyrase, Cocain esterase, Procaine esterase	Carboxylic-ester hydrolase	Wide specificity. Also hydrolyses vitamin A esters	133, 202, 288, 425, 1371, 2874
3.1.1.2	A-esterase, Paraoxonase	Aryl-ester hydrolase	Acts on many phenolic esters; the enzyme from sheep serum also hydrolyses paraoxon	47, 136, 2056, 347
3.1.1.3	Steapsin, Tributyrase, Triglyceride lipase, Lipase	Triacylglycerol acylhydrolase	The pancreatic enzyme acts only on an ester-water interface; the outer ester links are preferentially hydrolysed	1764, 2023, 2911, 3081
3.1.1.4	Lecithinase A, Phosphatidase, Phosphatidolipase	Phosphatide 2-acylhydrolase	Also acts on phosphatidylethanolamine, choline plasmalogen and phosphatides, removing the fatty acid attached to the 2-position	672, 736, 919, 1175, 2272, 2895
3.1.1.5	Lecithinase B, Lysolecithinase, Phospholipase B	Lysolecithin acylhydrolase		574, 665, 855, 3527
3.1.1.6	C-esterase (in animal tissues)	Acetic-ester acetylhydrolase		47, 268, 1499
3.1.1.7	True cholinesterase, Choline esterase I, Cholinesterase	Acetylcholine acetylhydrolase	Acts on a variety of acetic esters; also catalyses transacetylations.	134, 269, 1928, 2324, 3852, 540
3.1.1.8	Pseudocholinesterase, Butyrylcholine esterase, Choline esterase II (unspecific), Benzoylcholinesterase	Acylcholine acylhydrolase	Acts on a variety of choline esters and a few other compounds	134, 136, 1732, 2324, 2931, 3259

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