BIOCHEMICAL JOURNAL LETTERS

Nomenclature of esterases

The official IUB nomenclature (NC-IUB, 1984) concerning general esterases [carboxylesterases (EC 3.1.1.1), arylesterases (EC 3.1.1.2) and acetylerases (EC 3.1.1.6)] is not satisfactory. The classification based on substrate characteristics has no practical value for workers in this field. Several authors (Junge & Krisch, 1973; Walker & Mackness, 1983) have argued against this classification, but with little success. A perfect solution for classification of general esterases is hard to give. Firstly, the substrate *in vivo* of most esterases is unknown. Secondly, substrate preferences are highly overlapping between the defined classes of general esterases. Thirdly, most esterases are highly polymorphic enzymes. Fourthly, enzymes with non-esterase main activities and even proteins not generally known as enzymes, like serum albumin (Erdős & Boggs, 1961), may possess esterase activity. Fifthly, only a few esterases have been purified extensively and consequently structural information is lacking.

To circumvent some of the classification problems a single group of general esterases is proposed in which all esterases with an unidentified substrate and/or with no known relation to other esterases or proteins are brought together. This group should contain at least the above-defined general esterases. Any subdivision in this group is meaningless. Enzymes should only be transferred

from this group to form a new class when the substrate *in vivo* is known or when mutual relationships are clearly established on the basis of unambiguous structural information and the substrate *in vivo* is not known to be different.

Based on this proposition the juvenile hormone esterases (De Kort & Granger, 1981) should form a separate group because the substrate *in vivo* (juvenile hormone) is well-defined. Esterase-6 from *Drosophila melanogaster* is another esterase whose substrate *in vivo* (*cis*-vaccenyl acetate, an anti-aphrodisiac pheromone) is known (Mane *et al.*, 1983).

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De Kort, C. A. D. & Granger, N. A. (1981) *Annu. Rev. Entomol.* **26**, 1-28

Erdős, E. G. & Boggs, L. E. (1961) *Nature (London)* **190**, 716-717

Junge, W. & Krisch, K. (1973) *Mol. Cell. Biochem.* **1**, 41-52

Mane, S. D., Tompkins, L. & Richmond, R. C. (1983) *Science* **222**, 419-421

NC-IUB (Nomenclature Committee of the International Union of Biochemistry) (1984) *Enzyme Nomenclature 1984*, pp. 271-278, Academic Press, Orlando

Walker, C. H. & Mackness, M. I. (1983) *Biochem. Pharmacol.* **32**, 3265-3269

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