NADPH. It is also illustrated by the effects of $0.66 \mu\text{M-Hg}^{2+}$ (which inhibits glutathione reductase incompletely) and of $2 \mu\text{M-Hg}^{2+}$ (which inhibits completely) on analogous assays in our Table 2 (Levy & Christoff, 1983).

In our previous paper (Levy & Christoff, 1983) we reported absorbance changes during 10 min assays so that our results could be compared directly with those of Eggleston & Krebs (1974). All our assays, however, were conducted with a recording spectrophotometer. This provided additional opportunities to observe the opposing effects of glucose-6-phosphate dehydrogenase and glutathione reductase on absorbance changes at 340 nm and to confirm our conclusion that GSSG acts only indirectly on the former. When GSSG was added to our glucose-6-phosphate dehydrogenase assay mixtures, the absorbance increase was distinctly biphasic, with a slow rate preceding a faster one. The duration of the slow phase was proportional to the concentration of GSSG; it was abolished by adding $2 \mu\text{M-Hg}^{2+}$; and it did not occur in partially purified preparations lacking glutathione reductase. The most reasonable interpretation of this phenomenon is that the slow phase reflects the net absorbance change resulting from the simultaneous actions of glucose-6-phosphate dehydrogenase and glutathione reductase on the interconversion of NADP^+ and NADPH. When GSSG, which is always present in concentrations much lower than that of glucose 6-phosphate, is completely reduced, the production of NADPH from NADP^+ proceeds more rapidly, unhindered by the opposing, glutathione reductase-catalysed, NADPH reoxidation.

The communication of Rodriguez-Segade *et al.* (1985) demonstrates, once again, that one must use great caution in interpreting the effects of GSSG on glucose-6-phosphate dehydrogenase in a crude system that contains glutathione reductase. As we stated earlier (Levy & Christoff, 1983), the possibility that GSSG modulates animal tissue glucose-6-phosphate dehydrogenases is an attractive one that should not be summarily dismissed. Unfortunately, however, our earlier statement is still true: evidence for such a mechanism has yet to be established.

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Nomenclature: a possible solution to the 'peptidase anomaly'

The term 'peptidase' is used in two distinct senses in the general biochemical literature, and also in IUB-recommended nomenclature. This situation gives rise to confusion, and should be resolved if possible.

In one sense, 'peptidase' is taken to be synonymous with exopeptidase, i.e. to refer to a peptide (bond) hydrolase that acts specifically near the *N*- or *C*-terminus of a polypeptide. This usage can be traced back to the early German literature (Grassmann & Dyckerhoff, 1928), and has continued to be popular because exopeptidases often seem to be active preferentially against 'peptides' – small polypeptides. The reason for this is often simply that at a given weight concentration a small polypeptide affords a higher molar concentration of the susceptible end-groups than a larger one. Nevertheless, this is a usage of the term peptidase that has historical priority and is recognized by the Nomenclature Committee of the IUB (NC-IUB, 1984, line 10).

The second way in which 'peptidase' is used is as a short form of 'peptide (bond) hydrolase'. This sense was introduced by Bergmann (Bergmann & Ross, 1936; Bergmann & Fruton, 1937), who also used the root '-peptidase' in coining the terms 'exopeptidase' and 'endopeptidase' which also form part of the IUB recommended nomenclature (NC-IUB, 1984).

The conflict between the two meanings of peptidase is clearly seen if one considers the question 'Is an endopeptidase a peptidase?'. In Grassmann's terminology it is not, but in Bergmann's it is.

Hence it is suggested that we follow Bergmann in using peptidase as a general term for 'peptide (bond) hydrolase', and do not restrict it to enzymes acting preferentially on small polypeptides. Put another way, peptidase should be synonymous with 'protease' and not with 'exopeptidase', and would be analogous to 'glycosidase' for the hydrolases of glycosidic links. The original narrow use of peptidase by Grassmann was based on an imperfect understanding of the reason for the apparent selectivity of the enzymes for small polypeptides, and can reasonably be thought of as obsolete.

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