Biochemistry of Sulfur

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Preface

There can be few elements with a biochemistry as coherent as that of sulfur. This important element is crucial to myriad aspects of metabolism, catalysis, and structure. The plurality of functions in which sulfur is involved derives squarely from the numerous oxidation states in which it may exist, some having great stability, some being capable of ready redox interconversions, and yet others having great instability. As a result, the flux of sulfur from the geosphere through the various kingdoms of life leaves few biochemical processes unaffected.

Although there are large gaps in the fabric of our basic knowledge of sulfur biochemistry, it is sufficiently framed to allow a unified and organized story, a story which many of the best-known names in biochemistry have helped to write. It has been both a task and a privilege to try and summarize this story, one that is enormous, complex, fast-moving, still developing and, above all, exciting. I suppose that no monographer of such a vast subject could be satisfied with his efforts. It is unfortunately probable that in attempting this task I have made as many errors as a Stilton cheese has blue streaks, and as many omissions as a Swiss cheese has holes. Perfection is not to be achieved in a monograph. Inasmuch as I have succeeded, the credit belongs to those whose efforts gave us the knowledge we have. Where I have failed, the fault is only mine.

All enzyme control numbers are taken from E. C. Webb, *Enzyme Nomenclature* (Academic Press, 1984).

Ryan J. Huxtable

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Abbreviations

ACP	acyl carrier protein
AdoHcy	<i>S</i> -adenosylhomocysteine
AdoMet	<i>S</i> -adenosylmethionine
APS	adenosine phosphosulfate
bp	boiling point
CA	cysteic acid
CNS	central nervous system
CSA	cysteine sulfinic acid
Cys	cysteine
Cysta	cystathionine
DTT	dithiothreitol
GSH	glutathione
GSSG	oxidized glutathione
h	hour
Hcy	homocysteine
MeSAdo	methylthioadenosine
Met	methionine
mol	mole
mp	melting point
MW	molecular weight
PAP	phosphoadenosine phosphate
PAPS	phosphoadenosine phosphosulfate
THF	tetrahydrofolate
SH	sulfhydryl group