

*Mechanisms, Regulation and Special Functions of Protein Synthesis in the Brain*

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It has been recognized for some time that protein turnover in brain is high relative to other organs in the body, being comparable to that in liver. However, unlike the liver, secretion of proteins is not a major function of the brain. Within the brain, the importance of proteins can be clearly seen in their contribution to specialised structures like nerve axons and terminals, in the presence of high concentrations of neurotransmitter enzymes and of specific proteins such as the basic protein of myelin. Myelin itself contributes to the exceptionally high concentration of lipo-protein membranes, a characteristic feature of brain tissue. The intriguing relationship of protein metabolism to brain function has occupied the attention of a large number of neurochemists and this book contains reports of a recent meeting devoted to this problem.

The book is divided into three sections:

- (1) Synthesis and axonal transport;
  - (2) Specific proteins and brain function;
  - (3) Neurohumoral and neuropathological aspects.
- The reports are from 5–20 typewritten pages and vary in the quality of their presentation and nature of contents. For example, the article by Zomzely-Neurath and Keller is a long, well-written discussion of the properties of rat brain enolase including evidence for the occurrence of a neurone-specific form, the concentration of which appears to alter

with behavioural modifications. The brief article of Erhlich and colleagues, on the other hand, is representative of a number of reports. Here, preliminary experiments on the effects of morphine on phosphorylation of proteins of synaptic membrane fractions are presented. Reports of this kind would normally constitute research communications. However, there are also a few informative reviews, such as that by Dunlop and colleagues, which is a concise and valuable discussion on measurements of brain protein synthesis.

With 38 different contributions, it is obviously difficult to have detailed and considered analyses of the three main sections covered. Much more impact could have been made if some of the more closely-related reports, e.g., those on the effects of neuroactive agents on protein synthesis were integrated and critically reviewed by one or more of the established workers present at the meeting. Nevertheless, the book does illustrate some of the current interests in the relationship of protein synthesis to brain function. Most of the reports are clearly written but the inclusion of preliminary work in a book of this kind is open to question. A final but quite appropriate consideration is the price, which is a hefty one.

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