

Oscillatory dynamics of vesicle-bound enzyme systems

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Chemical and biochemical oscillations are generally studied under homogeneous conditions. However, in the cell, most enzymes are bound to or incorporated into phospholipid membranes. In order to study the enzymatic oscillations in a more “natural” environment, we perform studies on three enzyme and biomimetic enzyme model systems, where the enzyme is always incorporated into vesicles (or micelles). Examples of the dynamics of a biomimetic cytochrome P450 model system, the membrane-bound peroxidase-oxidase reaction, and the effect of micelles on the hemin system will be presented. Different effects are found to take place.