

AFCoKaRE Practice Problem 9.3

Purpose: This problem allows you to practice generating a rate expression for a non-elementary reaction that involves an enzyme. It also allows you to practice generating rate expressions from mechanisms using the Bodenstein steady state approximation and assuming a rate-determining step.

Problem Statement: Suppose the combination of substrate A, SA, and substrate B, SB, to form the product P, reaction (1), is catalyzed by an enzyme, E, according to the mechanism given in reactions (2) through (4). Reactions (2) and (4) are reversible. Compare the rate expression that results if reaction (3) is effectively irreversible to the rate expression that results if reaction (3) is rate-determining.

