



RESEARCH ARTICLE

Significance of dimeric surfactant on kinetic study of organophosphorus compounds

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Abstract

Dimeric surfactants have shown significant role on hydrolysis of organo-phosphorus compounds. In this study, we have studied the kinetic hydrolysis of *p*-nitrophenyl acetate (PNPA), *p*-nitrophenyl benzoate (PNPB), and *p*-dinitrophenyl diphenyl phosphate (PNPDPP) in presence of novel dimeric surfactants 12-4-12, 2Br⁻ (butanediyl-1,4-bis(dimethyldodecylammonium bromide), 12-4(OH)-12, 2Br⁻ (2-butanol-1,4-bis(dimethyldodecylammonium bromide) with conventional nucleophiles, benzohydroxamic acid (BHA), and salicylhydroxamic acid (SHA) by spectrophotometry at 27°C. Kinetic study on effect of micelles on reaction rates have been investigated and rationalization effects of micelles determination using kinetic model. The experimental kinetic data were fitted with micellar pseudophase model for determination micellar substrate binding and parameters. The second order rate constant is processed for comparing the reactivities in aqueous and micellar pseudophase.

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DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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