

ABSTRACT

**Kinetics Comparison Study of Hydrolysis Reaction of
O-(4-methoxybenzoyl)salicylic acid and
O-acetylsalicylic acid at pH 11**

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O-(4-methoxybenzoyl)salicylic acid has great potency to be developed furthermore, because its analgesic activity is greater than *O*-acetylsalicylic acid. This research has been done to compare the kinetics of hydrolysis reaction of *O*-(4-methoxybenzoyl)salicylic acid and *O*-acetylsalicylic acid to study the stability of the compounds. The stability was determined by studying the degradation of these compounds by comparing their kinetic parameters, those are reaction rate constant (k), half-life period ($t_{1/2}$), and shelf life (t_{90}). The degradation of these compounds was done at various times in condition pH 11. The quantitative analysis was done by using spectrophotometry UV method. The results showed that the *O*-(4-methoxybenzoyl)salicylic acid had k value lower than *O*-acetylsalicylic acid, while $t_{1/2}$ and t_{90} higher than *O*-acetylsalicylic acid. It was obtained that in condition pH 11 *O*-(4-methoxybenzoyl)salicylic acid is more stable than *O*-acetylsalicylic acid.

Keywords: *O*-(4-methoxybenzoyl)salicylic acid, *O*-acetylsalicylic acid
UV spectrophotometry, kinetics of hydrolysis