Zucker–Hammett hypothesis

This hypothesis states that, if in an acid catalysed reaction, lg k_1 (first-order rate constant of the reaction) is linear in H_0 (Hammett *acidity function*), water is not involved in the *transition state* of the *rate-controlling step*. However, if lg k_1 is linear in lg $[H^+]$ then water is involved. This has been shown to be incorrect by Hammett himself.

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