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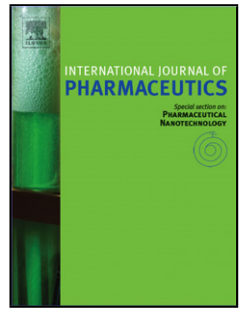

Title: Acyclovir Chemical Kinetics with the Discovery and Identification of Newly Reported Degradants and Degradation Pathways Involving Formaldehyde as a Degradant and Reactant Intermediate

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ACCEPTED MANUSCRIPT

Acyclovir Chemical Kinetics with the Discovery and Identification of Newly Reported Degradants and Degradation Pathways Involving Formaldehyde as a Degradant and Reactant Intermediate

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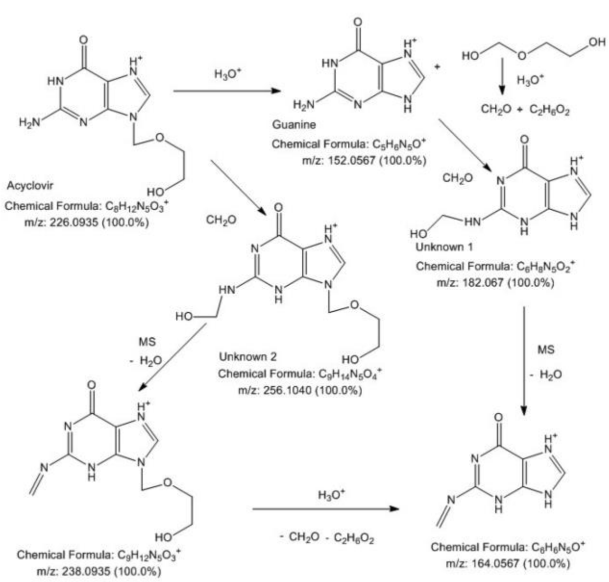
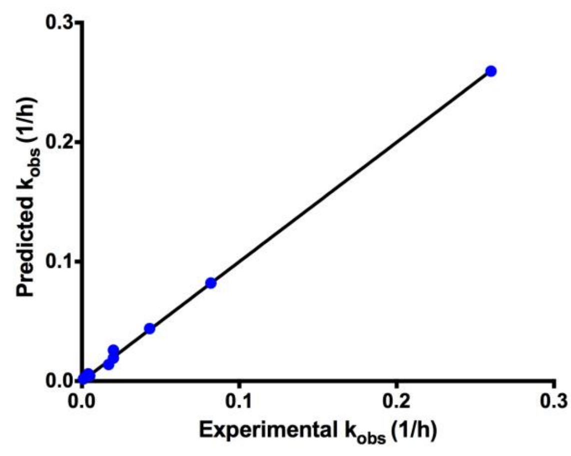
Graphical abstract



Proposed acyclovir degradation scheme under acidic conditions showing guanine, methyl acetal ethylene glycol, formaldehyde, ethylene glycol, acyclovir-formaldehyde adduct, and guanine-formaldehyde adduct as degradation products.



Linear correlation (slope= 0.997, R^2=0.999) between predicted k_{obs} and experimental k_{obs} using proposed rate law

$$k_{obs} = k_{H1} f_{SH} [H^+] + k_{H2} f_S [H^+]$$

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