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**Overcoming the stability, solubility and extraction challenges in reversed-phase
UHPLC-MS/MS bioanalysis of a phosphate drug and its prodrug in blood lysate**

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Highlights:

- LC-MS/MS bioanalysis of a phosphate drug and its prodrug in blood lysate
- A stabilization strategy using a cocktail of phosphatase and kinase inhibitors
- Solubilized the phosphate drug using a combination of surfactant and weak base
- Protein precipitation followed by solid-phase extraction for sample extraction
- Supported multiple pre-clinical toxicity studies using the validated method

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