

Thesis title: Investigation and Development of Analytical Methods to Characterize and Quantify Physico-chemical Incompatibility between Drugs

Thesis Summary: We are seeking a highly motivated and skilled PhD candidate to join our research team to explore the fascinating field of physico-chemical incompatibility between drugs. This research aims to investigate and develop innovative analytical methods that enable the characterization and quantification of drug incompatibilities, ultimately contributing to the improvement of pharmaceutical formulation and drug development processes.

The objective of this thesis is to investigate the intricate interactions and transformations that occur when multiple drugs are combined within a single formulation or delivery system. The successful candidate will have the opportunity to work on advancing our understanding of physico-chemical incompatibilities, focusing on identifying the underlying mechanisms, predicting potential drug-drug interactions, and developing analytical tools to evaluate the extent of incompatibility.

Key Responsibilities:

- *Literature Review:* Conduct an in-depth review of existing scientific literature to identify the current state-of-the-art in drug incompatibility research and analytical techniques.
- *Experimental Design:* Design and execute experimental protocols to investigate the physico-chemical interactions between drugs, utilizing a combination of spectroscopic, chromatographic, and thermal analysis techniques.
- *Method Development:* Develop novel analytical methods, including spectroscopic analysis, chromatography, and thermal profiling, to characterize and quantify drug incompatibilities in various formulations and delivery systems.
- *Data Analysis:* Analyze and interpret experimental data to gain insights into the mechanisms underlying drug incompatibilities, and propose innovative approaches to predict and mitigate adverse interactions.
- *Collaboration:* Collaborate with interdisciplinary teams to integrate the developed methods into the drug development process, working closely with formulation scientists and pharmaceutical engineers.
- *Documentation and Communication:* Prepare scientific reports, present research findings at conferences, and publish research outcomes in reputable scientific journals, contributing to the advancement of knowledge in the field.

Requirements:

- A Master's degree in pharmaceutical sciences, organic chemistry, analytical chemistry.
- Strong knowledge of pharmaceutical sciences and drug development processes.
- Experience with analytical techniques such as spectroscopy, chromatography, and thermal analysis.
- Experience in private sector is very welcomed
- Excellent written and verbal communication skills (French and English).
- Ability to work independently and as part of a collaborative research team.

Contact:

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