Postdoc Drug Product Development Data/Computational Scientist Oligonucleotide Platform

Job ID
REQ-10049112
Μαι 14, 2025
Switzerland

Περίληψη

We are seeking a highly motivated and talented post-doctoral fellow who will bring their engineering creativity and scientific curiosity to engage in the development and application of predictive methods to oligonucleotide formulation development and characterization.

About the Role

This is a unique opportunity to work in a highly interdisciplinary environment at the intersection of pharmaceutical sciences, analytics, molecular and process modeling and data science. In this role you will become part of the digital transformation to drive modelling-driven decision making and optimization of the drug development process. Your scientific expertise will be used to deliver value to drug formulation projects in terms of speed, quality, cost, and sustainability.

The successful candidate will join a dynamic team and collaborate with other experts across different functions.

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Location : Campus Basel

Duration : 2 years

Start : as soon as possible

Your responsibilities will include:

- Develop and validate computational models, mechanistic, data-driven or phenomenological, to evaluate formulation properties, specifically viscosity, as a function of the formulation composition, i,e, the structure of the active pharmaceutical ingredient, pH, temperature, concentration, added salts.
- Analyze and interpret the rheological behavior of oligonucleotide formulations under various stress conditions.
- Develop and validate computational models for the manufacturing and delivery (injectability) of oligonucleotide formulations.
- Work closely with experimental teams in defining synergistic experiments and simulations and their

tangible outcomes.
- Communicate your work in a clear manner to both experts and nonexperts in the field.
- Prepare and present research findings in scientific publications and conferences.
- The successful candidate will join a dynamic team and collaborate with other experts across different functions.

Minimum Requirements:

What You'll Bring to the Role:

- PhD in chemical/mechanical engineering, pharmaceutical sciences, material sciences, process engineering or similar.
- 0-5 years post-degree experience in academia or industry.
- Knowledge of rheology and its application to pharmaceutical formulations.
- Strong background in computational modeling and simulation techniques, for example computational fluid dynamics, Monte Carlo simulations, finite element analysis, dissipative particle dynamics.
- Experience with solutions comprised of charged particles.
- Good understanding of chemical properties of molecules and materials and their contribution to solution and suspension properties.
- Proficiency in programming languages such as Python, C++.
- Strong communication skills (English) and data visualization skills.
- Excellent analytical and organizational skills; effective and creative problem-solver.
- Flexible and open minded.
- Ability to work independently and in collaboration with multiple teams, ability to work in multidisciplinary teams and multicultural environment.

Of advantage:

- Experience in working with oligonucleotides or peptides
- Experience in molecular modeling
- Understanding of formulation unit operations and processes
- Understanding of mass, momentum and heat transfer phenomena
- Expertise in data science applied to scientific problems

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