Principal Scientist, Structural and Biophysical Analytics

Job ID
REQ-10041575
Feb 20, 2025
USA

Summary

The Structural BioAnalytics (SBA) group within Global Discovery Chemistry at Novartis Biomedical Research in Emeryville, CA (San Francisco Bay Area) is seeking a self-motivated, highly skilled scientist with extensive experience in structural biology analytical techniques. Candidates with a strong background in one or more of the following technologies are strongly encouraged to apply: protein mass spectrometry (MS) techniques such as hydrogen-deuterium exchange MS (HDX-MS), native MS (nMS), hydroxyl radical protein footprinting (HRPF) or Biomolecular NMR (Bio-NMR). We expect the successful candidate to be curious about new drug discovery approaches, eager to learn and to adapt quickly to the evolving needs and priorities of the SBA group. While solid hands-on experience of LC-MS, HPLC/UHPLC is preferred, we invest in our employees' growth and offer various professional development opportunities including technical training and mentorship programs. Knowledge of other biochemical, biophysical and cellular screening techniques for small molecule characterization and development is a plus.

About the Role

Position Location: onsite, Emeryville, CA

Internal Job Title: Principal Scientist I/II

The Structural BioAnalytics (SBA) group within Global Discovery Chemistry at Novartis Biomedical Research in Emeryville, CA (San Francisco Bay Area) is seeking a self-motivated, highly skilled scientist with extensive experience in structural biology analytical techniques. Candidates with a strong background in one or more of the following technologies are strongly encouraged to apply: protein mass spectrometry (MS) techniques such as hydrogen-deuterium exchange MS (HDX-MS), native MS (nMS), hydroxyl radical protein footprinting (HRPF) or Biomolecular NMR (Bio-NMR). We expect the successful candidate to be curious about new drug discovery approaches, eager to learn and to adapt quickly to the evolving needs and priorities of the SBA group. While solid hands-on experience of LC-MS, HPLC/UHPLC is preferred, we invest in our employees' growth and offer various professional development opportunities including technical training and mentorship programs. Knowledge of other biochemical, biophysical and cellular screening techniques for small molecule characterization and development is a plus.

SBA is a multidisciplinary team with expertise in biomolecular nuclear magnetic resonance (Bio-NMR), small molecule NMR, nMS and HDX-MS. Our group collaborates closely with other structural and biophysical groups across Novartis to investigate new drug targets and identify and validate small molecule compounds from biochemical, biophysical and cellular screens. Together we collaborate with scientists at the frontiers of chemical biology, chemical genomics, data sciences and disease biology to identify opportunities for next

generation therapeutics. Our goal is to find and develop small or large molecules with the potential for modulating diseases, and we support or lead drug discovery projects in various therapeutic areas like oncology, immuno-oncology, virology, parasitical, cardiovascular, immunological and neurological diseases.

The Principal Scientist will be an integral member of structure-based drug discovery teams. They will provide structural MS and/or NMR expertise to advance early drug discovery efforts, design and conduct HDX-MS, native MS and/or Bio-NMR experiments to solve key scientific questions, communicate effectively and efficiently in team meetings, review sessions, and collaboratively work with other scientists to develop innovative medicines. This role will impact our local discovery efforts and the global discovery portfolio through bench-level and strategic contributions. The successful candidate will be expected to implement novel structural MS and/or Bio-NMR techniques to answer drug discovery questions related to protein dynamics/folding, mutant analysis, epitope/paratope mapping, and protein/nucleic acid-small molecule interactions.

Key Responsibilities:

- Interpret data, present results and provide strategic input to internal project teams and global stakeholders to help drive our drug discovery projects
- Prepare HDX-MS samples as well as record and analyze deuterium labeling data of proteins in complex with peptides, nucleic acids or small molecules
- Prepare, execute and analyze native MS experiments
- Design, execute and interpret Biomolecular NMR experiments
- Independently support multiple drug discovery projects in parallel
- Working closely with scientists in Protein Sciences to creatively design and generate protein constructs suitable for nMS, HDX-MS or Bio-NMR experiments
- Participate in maintaining our HDX-MS automation platform with associated computing and robotics
- Work with in-house structural biology and drug discovery databases
- Share lab and office tasks, such as ordering reagents, organizing inventories and keeping experimental records, with other team members
- Contribute intellectually to structure-based drug discovery projects and collaborate with partners from other disciplines like disease biology, biochemistry, chemistry, bioinformatics, CADD and IT

Minimum requirements

- A degree in Biophysics, Chemistry, Biochemistry or related field. B.S. or M.S. with at least 10 years, or Ph.D. with at least 2 years of relevant post-graduate experience in either an academic or industrial setting
- Solid background in one or more of the following techniques: analytical chemistry, mass spectrometry, Biomolecular NMR, protein biochemistry, or separation science as demonstrated by authored publications in peer-reviewed journals
- Successfully demonstrated initiative, teamwork, collaboration and can-do attitude
- Flexibility to accommodate to rapidly changing priorities and deadlines, with strong interpersonal, written & oral communication and problem-solving skills

Desired Skills

- Hands-on experience with the operation and troubleshooting of mass spectrometers used for structural MS and associated equipment, in addition to experience with Trajan HDX automation platforms
- Protein design, expression and purification knowledge as well as conceptual familiarity with one or more structural biology techniques such as, XRC, cEM, SPR, DSF, ITC
- Familiarity with mass spectrometry peptide mapping techniques like Top N and Data-Independent

Acquisition (DIA) workflows
- Knowledge of R and python for MS data analysis

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Novartis Compensation and Benefit Summary: The pay range for this position at commencement of employment is expected to be between $103,600 to $192,400/year for Principal Scientist I, and $114,100 to $211,900/year for Principal Scientist II; however, while salary ranges are effective from 1/1/25 through 12/31/25, fluctuations in the job market may necessitate adjustments to pay ranges during this period. Further, final pay determinations will depend on various factors, including, but not limited to geographical location, experience level, knowledge, skills, and abilities. The total compensation package for this position may also include other elements, including a sign-on bonus, restricted stock units, and discretionary awards in addition to a full range of medical, financial, and/or other benefits (including 401(k) eligibility and various paid time off benefits, such as vacation, sick time, and parental leave), dependent on the position offered. Details of participation in these benefit plans will be provided if an employee receives an offer of employment. If hired, employee will be in an "at-will position" and the Company reserves the right to modify base salary (as well as any other discretionary payment or compensation program) at any time, including for reasons related to individual performance, Company or individual department/team performance, and market factors.

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