Position: Associate Scientist - Technical Development Microfluidic Production of Gene Therapy (AAV/Lentivirus) in US Molecular Biology Dept.
Location: Piscataway, New Jersey, US

The Associate Scientist - Technical Development Microfluidic Production of Gene Therapy (AAV/Lentivirus) contributes to the plasmid development activities for gene therapy vector production. This includes, but may not be limited to, cloning, NGS library preparation and sequencing, plasmid optimization, amplification, cell banking, bacterial strain selection, mammalian cell culture, transfections, ELISAs, PCR and AAV characterization.

Key Responsibilities:

1. Contributes to activities for both internal and external projects, primarily as it relates to the execution of gene therapy programs.
2. Works with analytical and process development on strategies in gene therapy product characterization to ensure supply of quality raw materials for the generation of AAV/lentivirus vector for drug development.
3. Design characterization and operations of synthetic DNA assemblies used in AAV/Lentivirus/CRISR CAS9 manufacturing of gene and cell therapy products.
4. Maintains synthetic assembled dsDNA and resulting plasmids and their glycerol stock associated cell bank stocks.
5. Maintains cell culture lines for AAV vector generation and assay development.
6. Determines expression efficiency of gene-of-interest constructs.
7. Applies relevant scientific principles and techniques to research problems.
8. Maintains detailed and up to date laboratory notebooks, with the emphasis on electronic notebooks.
9. Complies with all safety requirements. Contributes to general lab operations.
10. Technical platform operations for plasmid, minicircle, nanoplasmid, linear long dsDNA euchromatin/chromosome, and ssDNA production platform operations for mammalian cell transfection

11. Excellent data analysis skills and experience with a variety of scientific software applications (including Microsoft Office JMP or Prism, Geneious Prime, VB, Python, C++, C-prime, and Adobe Photoshop).
12. Experience with laboratory automated liquid handlers including but not limited to Hamilton, Tecan, Hudson Robotics, Perkin Elmer, Sias, Unchained, Eppendorf, SPT, Molecular Devices and / or Beckman liquid handers
13. Experience with integrated platforms from at least one but not limited to one of the following or equivalent ABB, Fanuc, Mitsubishi, Kuka, Beckman, Thermo, Yaskawa, High Res Bio, Staubli, Bionex, Molecular Devices, Universal Machine and Engineering, Calvary Robotics, Beckman, ThermoCRS, Hudson Robotics, and/ or BioNex
14. Experience with microfluidic platforms using custom control and chip combinations of modular standardized plug-and-play fluidic circuit board (FCB) for operating microfluidic building blocks (MFBBs) from, but not limited to, ElvFlow, uFluidix, Enplas Life Tech, Festo, Aline, Creoptix, Fluigent, Darwin Microfluidics, Atomica
15. Operation of Artel quality control of microfluidic chips

Qualifications:

1. A Master's or Bachelor's degree in Bacterial Genetics, Biochemical Engineering, Biochemistry, Virology, Molecular Biology or other relevant discipline and demonstratable automated production/laboratory expertise and/or gene therapy process development experience.
2. Demonstrated competency with cell and molecular biology laboratory techniques for any or all of the following techniques: cDNA library production using RT, synthetic dsDNA euchromatin assemblies, high level expression amplicons for IVT and IVTT.
3. Proficiency with Microsoft Office.
4. Excellent verbal and written communication skills.

5. Ability to work independently and collaboratively, as required.
6. Analytical thinker with excellent problem-solving skills and the ability to adapt to changing priorities and deadlines.
7. Excellent planning, organizational, and time management skills.
8. Knowledge of GLP and GMP requirements as they pertain to plasmid manufacturing for gene therapy products.
9. Demonstrated ability to characterize AAV vectors and the corresponding gene-of-interest for the drug product.
10. Experience with viral vectors (including lentiviral vectors and adeno-associated viral vectors (AAV)) and nonviral delivery methods, gene editing technologies (e.g. CRISPR, TALON, etc.), cell engineering, and cell line generation.

Key words: dsDNA euchromatin assemblies, automated IVT and IVTT expression templates, cDNA library production using RT, and gene therapy AAV/lentivirus