JUSTIN BELLER, PH.D.

631-902-1867 • JABeller@gmail.com

Career Objective:

As a pharmacologist I am passionate about translating basic science findings into clinical diagnostics and therapies.

I am experienced in biotherapeutic process optimization, drug formulation, nanotechnology, neuroscience, pharmacology and toxicology. Demonstrated ability to educate, collaborate, and build relationships with a wide range of pharmaceutical industry specialists. Experienced in designing and optimizing cell-based assays. Extensive experience in assessing novel drugs, recombinant protein production, purification, and whole animal surgery. Experienced in the design, implementation and leadership of interdisciplinary projects. Experience with the management of large data sets. I am looking for a position that allows me to combine my extensive skill set with my passion for pharmacological analysis.

EXPERIENCE

Senior Scientist 2014 - Present

Biosolutions, Bend Research

DUTIES

- Development of PLGA nanoparticle based platform for the delivery of oral vaccines.
- Design and execution of the formulation of and *in vitro* testing of orally active therapeutic enzyme candidates.
- Designing, conducting, and overseeing internal research projects to understand variables in the biotherapeutic production process that dictate product quality attributes.
- Developing, optimizing and executing $C^{13}H^{1}$ HSQC NMR Metabolic Tracing experiments.
- Conducting experimentation to increase understanding of sugar regulation and the effect of N-glycosylation of mAbs.
- Collaborating with mathematicians linking multivariate models to underlying cell biology.
- Inspecting and accountability for the quality of generated data.
- Managing and performing contracted research projects.

ACCOMPLISHMENTS

- Developed in-house analytical methods for the purification of monoclonal antibodies.
- Developed in-house analytical technique for the isolation and purification of N-linked oligosaccharides.
- Developed in-house analytical technique for determining the structure of antibody bound N-linked oligosaccharides.
- Successfully managed and conducted client projects, leading to client driven patent applications.
- Developed spectral methodology for measuring pH in downstream manufacturing.

RELATED SKILLS

- Downstream and upstream manufacturing of biotherapeutics.
- Management of external and internal research projects.
- Developing and meeting budgetary expectations of projects.
- Developing and meeting timely expectations of projects.
- Understanding and interpreting results from multivariate modeling analysis.
- Drug/ Protein therapeutic formulation and delivery.
- Leadership in an industrial research laboratory.

Postdoctoral Associate 2011 - 2014
Laboratory of Dr. Diane M Snow, Spinal Cord and Brain Injury Research Center
Department of Anatomy and Neurobiology - University of Kentucky, Lexington, KY

DUTIES

- Producing and purifying "designer" recombinant proteoglycans for further scientific characterization (i.e. neurite outgrowth effects, structural attributes).
- Producing new cell lines through stable transfection of mammalian cells
- Evaluating the therapeutic potential of a lentiviral administration of a proteoglycan-degrading enzyme following dorsal column spinal cord injury in rats.
- Molecular characterization of gene expression.
- Measuring neurite outgrowth in an environment resembling the injured spinal cord in vitro.
- Design and manage experiments.
- Train and manage 6 junior researchers and 2 laboratory technicians.
- Interpret and analyze data.
- Author manuscripts and book chapters.

ACCOMPLISHMENTS

- Graduate Certificate in Clinical and Translational Science
- Certificate in Analytical Analysis of Glycosaminoglycans
- Certificate in Clinical Research Coordinator Training
- Invited Presentation at the Kentucky Spinal Cord and Brain Injury Research Trust Symposium (2013).
- Developing a High-throughput analysis of neurite outgrowth to reliably construct dose-response curve for molecules and drugs of interest.
- As Project manager and Trainee-Faculty liaison successfully co-managed and co-organized a "Wheelchair-For-A-Day" event.
- Receiving a Kentucky Bioinformatics Research Infrastructure Network pilot grant

RELATED SKILLS

- Experience with chromatographic techniques including HPLC, LC MS/MS, anion-exchange and affinity chromatography.
- Protein Production and Purification
- Analytical Analysis of Proteins and carbohydrates
- Biochemical techniques including Western blotting, ELISA, immunohistochemistry, immunocytochemistry
- Molecular techniques including rt-PCR, qPCR, whole transcriptome RNA-seq analysis, Ion Torrent, recombinant protein expression and production
- Cell culture, transient transfection and generation of stable transfectants
- Experience developing cell-based assays
- Experience with dorsal column hemisection spinal cord injury surgical procedure.
- Experience with pellet retrieval task, and sticker sensory task used to measure upper limb motor and sensory function.
- Aseptic rodent survival surgery, behavioral analysis, and histology.
- Statistical Data Analysis
- Authoring scientific manuscripts
- Presenting scientific data
- Computer proficiency including MS Office, IBM SPSS, Adobe Acrobat, Adobe Photoshop, Internet-based research.

Graduate Student Research Associate 2006 - 2011
Laboratory of Dr. Bruce Lyeth
Department of Neurological Surgery - UC-Davis, Davis, CA
2007-2010 Graduate Student Representative for the Pharmacology and Toxicology Graduate Group

DUTIES

- Measure glutamate transporter protein levels following lateral fluid percussion brain injury in different regions of the rat brain.
- Evaluate experimental agents' ability to enhance glutamate uptake into astrocytes by increasing glutamate transporter expression.
- Evaluate the potential of enhanced astrocytic glutamate uptake to protect neurons from excitotoxicity.
- Evaluate the potential of experimental agents to protect neurons following traumatic brain injury and neurodegenerative disease.
- Manage and train 3 undergraduate/junior researchers.
- Author and manage radioactive use agreement.
- Design and manage experimentation.
- Analyze and interpret resulting data.
- Author manuscripts and dissertation.
- Teaching courses in Environmental Toxicology, Introductory Biology, and Leadership.

ACCOMPLISHMENTS

- Recipient of a National Institute of Environmental Health Training Grant
- Discovered neuroprotective potential of a novel metabotropic glutamate receptor agonist (2R,4R APDC).
- Further supported the neuroprotective mechanism of ceftriaxone, now in clinical trials for the treatment of Amyotrophic Lateral Sclerosis.
- Developed an assay to measure glutamate uptake kinetics using radioactive glutamate.
- Developed an in vitro analysis of neuroprotection using neuron-astrocyte mixed cultures to measure neuroprotection in vitro.
- Received 5 invitations for oral presentations.
- Recipient of a University of California Travel Grant.
- Recipient of four teaching assistant fellowships.
- Published dissertation and manuscript.

RELEVANT SKILLS

- Performing lateral fluid percussion traumatic brain injury in rat.
- Working knowledge of controlled cortical impact traumatic brain injury (cci-tbi) in rat.
- Performing Morris Water Maze, Novel Object Recognition, and Barnes Maze.
- Developing cell culture assays.
- Developing enzyme activity assays.
- Performing TUNEL staining.
- Scientific Teaching
- Scientific Authorship
- Scientific Presentation

Education & Honors

UNIVERSITY OF KENTUCKY, Lexington, KY
Graduate Certificate, Clinical and Translational Sciences

UNIVERSITY OF CALIFORNIA DAVIS, Davis, CA
Ph.D., Pharmacology and Toxicology

STATE UNIVERSITY OF NEW YORK STONY BROOK, Stony Brook, NY
B.S., Pharmacology, Cum Laude with Departmental Honors

Job Related Training

AbSciEx Mass Spectrometry Training (10/2014)
Clinical Research Design (12/2012)
Ethics in Clinical Science (12/2012)
Grant Writing Workshop (3/2012)
Analysis of Glycosaminoglycans (8/2011)
Leadership Development (12/2005)

Professional Memberships

National Neurotrauma Society
Society For Neuroscience
Regulatory Affairs Professional Society
Phi Sigma Biological Honor Society

Dissertation

Beller JA. Glutamate Transporters Potential To Reduce Excitotoxicity in CNS Injury and Neurodegenerative Disease [Ph.D. dissertation]. United States -- California: University of California, Davis; 2011. Available from: ProQuest: Dissertations & Theses: Full Text. Accessed February 1, 2012, Publication Number: AAT 3466495.

Peer-Reviewed Manuscripts

Hering TM, Beller JA, Calulot CM, Centers A, Snow DM. 2015. Proteoglycans of reactive rat cortical astrocyte cultures: Abundance of N-unsubstituted glucosamine-enriched heparin sulfate. Matrix Biology. 41(2015) 8-18.

Beller JA and Snow DM, 2014. Proteoglycans: Road Signs for Neurite Outgrowth. Neual Regeneration Research. 9(4) 343 -355.

Beller JA, Kulengowski B, Kobraei E, Curinga G, Calulot CM, Bahrami A, Hering TM, Snow DM. 2013. Comparison of sensory neuron growth cone and filipodial responses to structurally diverse aggrecan molecules, in vitro. Experimental Neurology. 247 (2013) 143-157.

Beller JA, Cragg. J, Khaing Z, McCreedy, D, 2013. Guest Editorial: Novel Ways to exploit stem cells for recovery of CNS function: Stem cell derived radial glial cells in magnetically aligned scaffold for repair after spinal cord injury. Journal of Rehabilitation Research & Development. http://dx.doi.org/10.1682/JRRD.2012.12.0224

Beller JA, Gurkoff GG, Berman, RF, Lyeth BG, 2011. Pharmacological enhancement of glutamate transport reduces excitotoxicity in vitro. Restorative Neurology and Neuroscience, 29(5) 331-46.

Book Chapters

Beller JA, Hering TM, Snow DM. "Techniques For Examining The Effect Of Substrate Bound Proteoglycans On Neurite Outgrowth *In Vitro*." Neuromethods: Extracellular Matrix. Humana Press

Beller JA, Hering TM, Snow DM. "High-throughput Quantitative Assay for Analyzing Neurite Outgrowth on a Uniform Substratum: The Cell-Substratum Assay." Neuromethods: Extracellular Matrix. Humana Press