

JOHNNY CASH

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RELEVANT RESEARCH EXPERIENCE

Cool Hip University: Stem Cell and Biomaterials Engineering Laboratory

California Institute for Regenerative Medicine Scholar

Biotech Hotbed

July, 2014 – August, 2015

- Created dual expression plasmid and improved protein expression by 50% in transiently transfected adipose derived stem cells as detected by RT-qPCR and Western Blot using nanopolymers and different cloning techniques.
- Determined optimal drug load for maximum synergetic pro-apoptotic effect in conjunction with recombinant adipose derived stem cells against patient derived diffuse intrinsic pontine glioblastoma cells as determined by viability assays and statistical analysis like three way ANOVA.
- Traced tumor sphere progression and reduction in mouse brains inoculated with patient derived glioma cells and subsequently treated with genetically modified adipose derived stem cells using Hematoxylin & Eosin-Y staining, and immunofluorescent staining.
- Established replicability of 3D Poly-ethylene glycol hydrogel cultures of patient derived diffuse intrinsic pontine glioblastoma cell lines by tracking viability and development using colorimetric cell-based assays, and microscopy using ImageJ software and GraphPad Prism 6.0.
- Presented research project updates on a bi-weekly basis in a group setting and trained replacement on best operating practices and widely used lab protocols.

Not so Cool University: Microbiology Laboratory

Undergraduate Research Assistant

MiddleofWoods, CA

October, 2012 – July, 2014

- Cloned genes for purification of essential enzymes for biosynthetic pathways.
- Optimized protein expression and solubility using IPTG induction, SDS-PAGE and Western Blot of recombinant E. coli transformed with cloned genes of interest.
- Purified enzyme of interest using anion exchange and size exclusion column chromatography and performed enzyme kinetic assays on byproduct formation using HPLC and UV-VIS spectrophotometry.

SKILLS

- ELISA, Western Blot and RT-qPCR
- Cryosectioning, immunohistochemistry and fluorescence microscopy
- Molecular cloning and DNA sequence analysis
- Mammalian cell culture (tumor and stem cell)
- Bacterial cell culture and recombinant protein expression and purification
- DNA and RNA purification using Prep kits
- HPLC, Spectrophotometry, and microplate reader operation
- Drug screening cell-based assays
- Fluent in Spanish
- Statistical analysis using MS Excel and GraphPad Prism 6.0

EDUCATION

Not so Cool University

Bachelor of Science in Biology: Cellular and Molecular

GPA: 3.51

MiddleofWoods, CA

Fall 2012 – Spring 2014