

Richard Tsai

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EDUCATION:

University of Pennsylvania, Philadelphia, PA
School of Engineering and Applied Sciences
Master of Science Biotech, Biomedical Technologies Track (Summer 2004)
Cumulative GPA 3.67/4.0

University of California, Berkeley
Bachelor of Science Chemical Engineering, Biotechnology Specialization (May 2001)
Honors: Dean's List, Student Award for Research Training

RESEARCH EXPERIENCE

University of California, San Francisco, San Francisco, CA June 2001 – August 2003
Research Associate II, Laboratory Supervisor, Department of Anesthesia, School of Medicine
Advisor: James D. Marks, MD, PhD

- Successfully engineered antibodies to potent neutralize botulinum neurotoxin using novel phage and yeast display technology within the desired project time frame.
- Studied the effects of protein folding by PCR mutagenesis to increase the specificity to targeted antigens.
- Reorganized the laboratory data infrastructure to reduce the number of duplicate protocols and organized data which expedited search time and increased research productivity.
- Developed novel methods to evolve antibodies towards improved specificity to target sites and engineer higher affinity antibodies using yeast surface display using flow cytometry.
- Federal select agent control officer for Botulinum Neurotoxin at UCSF

University of California, Berkeley, Berkeley, CA August 2000 – May 2001
Research Associate, Department of Biochemical Engineering
Advisor: David Schaffer, PhD

- Quickly learned and utilized molecular and histological techniques and adapted existing protocols to improve experimental results.
- Independently optimized protocols and experimented with different packaging vectors for gene therapy.

University of California, Berkeley, Berkeley, CA June 1999 – May 2000
Research Assistant, Department of Chemical Engineering
Advisors: Jay Keasling, PhD and Douglas Clark, PhD

- Analyzed the structure and formation of biofilm by using GFP on a microfluidic device.
- Developed a model simulating the formation of biofilm by using C language and Matlab.

PROFESSIONAL EXPERIENCE

Hewlett Packard Company, Palo Alto, CA Aug. 1998 – Sep. 2000
Retail Training Manager

- Coordinated and mobilized a technical training team in the San Francisco bay area to educate small business and retail technicians to facilitate increased retail presence and sales.
- Effectively managed territory to maximize field efficiency that exceeded the company's target.
- Secured and conducted formal and informal trainings customizable to address product features and benefits.

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Exelixis Pharmaceuticals Inc., San Francisco, CA

Apr. 2000 – July 2000

DNA Sequencing Scientist

- Developed a system to maximize and streamline sequence results from in-house scientists to efficiently analyze sequence results.
- Administer robotic and sequencing equipment ensuring efficient operations that reduced downtime and increased productivity.
- Provided training and help desk support and assisted in preparing user documentation to integrate departments to a uniform procedure.

University of California, Berkeley, Berkeley, CA

June 1999 – Jan. 2000

Residential Computing Consultant

- Network administration, general troubleshooting of both PC and Mac, computer cluster support.
- Organized and prepared enrichment lecture for computer consultant interns.
- Conducted training seminars in the areas of programming and network debugging.

PROFESSIONAL SOCIETIES

Penn Nanotechnology Professional Group (Project Manager & Industrial Rep.)

2003 - Present

American Institute of Chemical Engineers

Omega Chi Epsilon National Honor Society (Co-founder Beta Xi Chapter)

Tau Beta Pi National Honor Society

PRESENTATIONS

High-Affinity Antibodies Which Neutralize Botulinum Neurotoxin From Libraries of Single Chain Displayed on Yeast. Antibody Engineering, Forging the Future of Antibody Therapeutics, November 2003

Selection of high affinity human antibody against botulinum neurotoxin from a large Fab library created by yeast mating. 14th International Antibody Engineering Conference, December 2003

Finding High Affinity Monoclonal Antibodies by PCR mutagenesis and the affects of neutralizing Botulism. Marks Lab, Department of Anesthesia, UCSF, August 2002

Antibody Affinity Maturation & Epitope Mapping of Monoclonal Antibodies on Binding Domain of Botulism Neurotoxin. Marks Lab, Department of Anesthesia, UCSF, February 2002

The Efficiency and Benefit of Methanol Powered Fuel Cell Vehicle. University of California, Berkeley, Dept of Chemical Engineering, Berkeley, CA, May 2001

PUBLICATIONS

1. Lou JL, Tsai R, Nielsen UB, Adams GP, and Marks JD. Avidity matters in tumor targeting----comparing scFvs with their corresponding IgG for ErbB2. (In Preparation)
2. Lou JL, Tsai R, Garrison JL, Heitner T, and Marks JD. Fully human antibodies for ErbB3. (In Preparation)
3. Geren I, Tsai R, Razai A, Smith T, Feldhaus MJ, Lou JL, and Marks JD. In vitro affinity maturation of scFv for Botulism neurotoxins by yeast display. (In Preparation).

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CERTIFICATIONS

BD FACSAria Operator Training	April 2003
Beckman Coulter Epics Elite Operator Training	September 2002
BiaCORE Training	July 2001

LABORATORY SKILLS

Chemical: Chromatography (GC, HPLC, TLC), Spectrophotometer (UV, VIS), Spectroscopy (NMR, IR), BiaCore (Kinetics)

Biological: Flow Cytometry, DNA Sequencer, Yeast Display, Phage Display, protein purification techniques, and cell culture

COMPUTER EXPERIENCE

Software: AutoCAD, ChemCAD, Fluent, KaleidaGraph, MathCAD, MS-Office, AutoCAD

Operating Systems: Linux, DOS, Windows 3.x/9.x/NT, Mac OS 8.x/9.x/10.x

Computer Language proficiencies: C, FORTRAN and Matlab

Languages: Spanish, Chinese (Mandarin)