Maureen Beth Ibañez

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Objective:

- Utilize my strong background in drug discovery in the development of new immunotherapies.

Skills:

- **Cell culture:** culturing of a broad array of cells including primary hepatocytes, lymphocytes, dendritic cells, and *Plasmodium* parasite cultures, transient transfection and stable transfections, siRNA and shRNA transfections, HIV, MLV and HCV pseudoparticle transduction, HCV live virus (JFH1) infection, single cell cloning, cell sorting by Ficoll gradient, FACs and magnetic beads, intracellular and cell surface staining, virus production, BSL-3 level experiments with HIV virus and handling of HIV patient serum, p24 assay, chromium release assay.
- **Protein:** western blot, affinity column protein purification, protein quantification, protease assay, ELISA and AlphaLISA assay, TR-FRET assay, Meso Scale Discovery and Bioplex multiplex cytokine and chemokine assays, Becton Dickenson cyotometric bead array, Cell Titer Glo toxicity assays and Brightglo luciferase assays, SYBR Green assay, Opera High Content Imaging assay.
- **Molecular Biology:** DNA and RNA extraction, DNA cloning, siRNA construction, Northern blot, PCR, TaqMan assay, RNAse protection assay, CAT assay.
- **Animal work:** received training in small animal handling, tracheotomies, eye bleeds, heart puncture, bone marrow extraction, tail vein injections, anesthesizing, spinal dislocations, mosquito dissections.
- **Automation:** cell dispensing systems, automated pipetting systems , Minitrak and Echo liquid handling system.
- **Computer:** proficient knowledge of MS Word, Excel, Excel Fit, Powerpoint, Prism Graph, database curve fitting programs and data entry system, electronic laboratory notebook.
- **Communication:** excellent writing and presentation skills.

Research Experience:

Scientific Associate II **Apr 2013 to present**
Genomics Institute for the Novartis Foundation, San Diego, CA, Case McNamara, Ph.D.

Screened libraries of small molecules for their inhibitory activity in both the blood & liver stage of the malarial parasite *Plasmodium* (*P. falciparum, berghei & yoelii*). Optimized the blood stage SYBR Green assay conditions for high-throughput screening in 1536-well format. Evaluated a new liver cell line that could potentially increase the throughput of the liver stage assay and improved the assay quality. Implemented a cell-based luciferase inhibition test to identify false-positive results from luciferase-based assays. Validated lead compounds in a *P. berghei* & *yoelii* high content imaging assay. Confirmed the mode of action of PI4K inhibitory compounds through mutant PI4K and PI4K pathway *P. falciparum* lines. Synchronized *P. falciparum* cultures to test lead compounds in stage of action studies. Developed drug-resistant *P.falciparum* Dd2 lines. Isolated genomic DNA mutant and parental *P.falciparum* Dd2 lines for lidentification of novel drug targets through gene array. Coordinated screening efforts with the compound management and high throughput screening group and UCSD collaborators. Provided comprehensive reports of biological screens and assay development to chemistry team.

Scientific Associate II/Scientist I **Sep 2006 to Sep 2011**
Genomics Institute for the Novartis Foundation, San Diego, CA, Bishnu Nayak, Ph.D.

Screened a library of small molecules for their potential use as vaccine adjuvants and anti-inflammatory agents in an immortalized murine dendritic cell line (mDC). Identified agonist and antagonist compounds targeting innate immune response receptors, including toll-like receptors (TLRs) and tested for mouse and human cross-reactivity, MyD88 dependency, and mechanism of action (TLR specificity). Participated in a secretomics project testing a panel of secreted proteins for agonist and antagonist activity in the mDC line. Optimized HTRF assay conditions for high-throughput screening in 384-well and 1536-well format and implemented a SOP screening for autofluorescent and HTRF-false-positive results. Produced MyD88 knockdown and MyD88/Trif knockout dendritic cell clones. Characterized the mDC cell line and mDC knockout clones by their surface markers expression and cytokine and chemokine footprint.

Optimized siRNA transfection conditions and the HCV live virus protease assay for screening of a siRNA library for inhibition HCV infection. Gained experience in the use of automated equipment. Presented research progress in team meetings and coordinated projects with other teams.

Research Associate II/ Research Associate III **Jan 2004 to Aug 2006**
Immusol, San Diego, CA, Rene Rijnbrand, Ph.D.

Worked closely with chemists and tested novel compounds in our small molecule high-throughput screen (96-well) for HCV viral entry inhibitors . Analyzed Chinese herbal extracts for medicinal use. Studied mechanisms of action of compound inhibition of viral entry. Performed in vitro metabolism and toxicity assays. Optimized and developed SOPs for a HCV pseudoparticle entry assay and virus production. Screened an siRNA library in our HCV pseudoparticle entry assay. Tested efficiency of virus infection by immunufluorescent intracellular staining. Isolated single cell clone of a dual luciferase expressing Huh-7 cell line. Validated possible HCV receptors by siRNA transfection, antibody treatment, peptide treatment and antagonistic drugs. Constructed siRNAs with an Ambion siRNA construction kit. Identified cell surface receptor expression profiles for different cell lines by FACs analysis and western blot. Produced heterokaryon cells. BSL-3 associate safety officer. Managed and trained student researcher. Presented research progress in company wide scientist meetings and summarized research in monthly reports.

Graduate Student **Sep 2001 to Jun 2003**
Yale University, New Haven, CT, Michael Cappello, M.D.

Gained experience in PCR and analyzed sequence data of HIV long term non-progressor patient's viral DNA. Cultured Leishmania pifanoi and purified on an affinity column a Leishmania membrane protein antigen, P-8, and tested P-8's ability to induce nitric oxide production in macrophages. Cloned a mutant form of a hookworm Anclystoma ceylanicum protein, AceKI. Purified rAceKI on both a nickel column and HPLC column and performed multiple kinetic assays characterizing rAceKI mutant's ability to inhibit serine proteases: chymotrypsin, trypsin, human neutrophil elastase, and pancreas elastase. Assisted in teaching courses in microbial pathogenesis and parasitology.

Staff Research Associate I **Oct 1999 to Jun 2001**
University of California San Diego (UCSD), La Jolla, CA, Andreas Gruber, Ph.D.

Developed HIV- specific T cell using dendritic cell transduced with a HIV-1 lentiviral vector as an antigen presenting cell. Gained experience with tetramer staining. Gained experience with molecular cloning techniques in plasmid preparation. Received mouse training which included tail anesthetizing, vein injections and eye bleeds. Managed, maintained, and trained co-workers in the BSL-3 facility.

American Melanoma Foundation Research Fellow **Jun 1998 to Aug 1999**
Wayne State University, Detroit, MI, June Kan-Mitchell, Ph.D.
Howard Hughes Honors Thesis Student **Sep 1997 to Jun 1998**
UCSD, La Jolla, CA, June Kan-Mitchell, Ph.D.

Characterized dendritic cell cytokine and chemokine expression by Rnase protection assay. Performed experiments involving the in vitro immunization of cytotoxic T cells with cancer and HIV-specific proteins. Maintained cell cultures of jurkat cells, Hela, 293T cells, T cells, dendritic cells. Gained experience in cell isolation by Ficoll gradient and Dynal magnetic beads, FACs staining and using Becton Dickinson FACs scan for FACs analysis, antibody production and the chromium release assay. Gained experience in using BL-3 technique in performing calcium-mediated and liposome-mediated transfection of a HIV-1 viral vector into 293 cells, titering the HIV-virus supernatant with the Hela cells and transduction of the HIV-1 virus into dendritic and jurkat cells. Managed and helped start-up lab at Wayne State University gaining experience in purchasing, hiring of student help, and training of a post-doctoral fellow and students.

Howard Hughes Summer Research Student **Jun 1997 to Aug 1997**
UCSD, La Jolla, CA, Cecilia Cheung, Ph.D.

Worked on project to inhibit VEGF expression by antisense RNA. Gained experience in cell culture of JEG-3 cells, Trizol RNA isolation and Northern Blotting.

Harvard School of Public Health Summer Research Student **Jun 1996 to Aug 1996**
Harvard University, Boston, MA, Mark Perrella, M.D.

Identified the Oct-1 site and NF-kB site & HMGIY as important transcription factors for iNOS gene. Maintained cell culture of rat aortic smooth muscle cells. Gained experience in transient transfections, CAT assays, and rat dissection for another experiment.

Publications:

Pellacani AU, Chin MT, Yet S-F, Hsieh C-M, Ibanez M, Reeves R, Lee M-E, and Perrella MA.
Regulation of an Architectural Transcription Factor, High Mobility Group-I(Y) by Inflammatory Cytokines in Vascular Smooth Muscle Cells. Circulation 96: I-298, 1997.

Pellacani A, Chin MT, Wiesel P, Ibanez M, Patel A, Yet S-F, Hsieh C-M, Paulauskis JD, Reeves R, Lee M-E, Perrella MA.
Induction of high mobility group-I(y) protein by endotoxin and interleukin-1b in vascular smooth muscle cells: role in activation of inducible nitric oxide synthase. J. Biol Chem, 1999; 274:1525-1532.

Perrella MA, Pellacani A, Wiesel P, Chin MT, Foster LC, Ibanez M, Hsieh C-M, Reeves R, Yet S-F, Lee M-E.
High mobility group-I (y) protein facilitates nuclear factor-kB binding and transactivation of the inducible nitric oxide synthase promoter/enhancer. J Biol Chem, 1999; 274:9045-9052.

Gruber A, Looney DJ, Ibanez M, Wong-Staal F.
Altered immunophenotype of dendritic cells generated from HIV infected subjects. Immunol Lett. 2001 Oct 1;78(3):209-11.

Chu, D, Bungiro, RD, Ibanez, M, Harrison, LM, Campodonico, E, Jones, BF, Mieszczanek, J, Kuzmic, P, Cappello, M.
Molecular characterization of Ancylostoma ceylanicum Kunitz-type serine protease inhibitor: evidence for a role in hookworm-associated growth delay. Infection and Immunity, 2004; 72:2214-2221.

Patents:

U.S. Patent Pending
Novel HCV entry inhibiting compounds.

Educational Background:

- **M.S. Epidemiology and Public Health**, Yale University, New Haven, CT
- **B.S. Molecular Biology**, cum laude, UCSD, La Jolla, CA