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**CALIFORNIA PACIFIC MEDICAL
CENTER INSTITUTE**
Sutter Health Affiliate

California Pacific Medical Center Research Institute

The California Pacific Medical Center combines clinicians and researchers in order to discover upgraded treatments and diagnostic technologies for patients. Clinical and translational scientists merge their research interests according to the needs of the CMP's medical center, hence providing the patients with improved care. In addition, this expertise is an advantage for peer institutes as they are learning from and partnering with the investigators in national and international studies and programs.

Principle investigators are focused on a wide range of disorders and conditions, leading research in cancer, aging, arthritis, cardiovascular disease, diabetes, epilepsy, infectious diseases, drug addiction, neurobiology of pain, neurodegenerative diseases and osteoporosis. Moreover, patients are offered an access to an extensive portfolio of studies that are suited to their health concerns by over 350 clinical trials initiated through the Office of Clinical Research.

My Research Group

I was working in the Kashani Lab that currently consists of 10 members that include PhD's and volunteers. The group is focused on studying the signalling pathways in which these markers promote cancer progression, as well as investigating the molecular subtypes of various cancers where they are enriched. The role of these genes as targets for treating solid tumours (including melanoma, breast cancer, glioblastoma, and lung cancer), either alone or in combination with targeted agents is also being defined.

My Work

During my stay at the California Pacific Medical Center I was working with my Supervisor Altaf Dar and investigated the functional significance of miR-1976 in Melanoma cell lines, melanocytes and investigating the role of miRNA-1976 in the growth, survival and progression of Melanoma. The general goal was to determine the expression of microRNA-1976 in melanoma cell lines and normal melanocytes, the determination of the effect of miRNA-1976 on the growth and proliferation of melanoma cell lines. As well as the effect of miRNA-1976 on the apoptosis of melanoma cell lines and the determination of the target action of miRNA-1976 in melanoma cell lines.

This study will employ various techniques to achieve the aims of this project. First of all, melanoma cell lines were grown in their specific media. Then the miRNA will be extracted and quantified by using the miRvana miRNA isolation kit and assayed using the TaqMan MicroRNA Assay in accordance with the manufacturer's instructions. Furthermore, target specific stem loop reverse transcription primers for three prime extended templates were employed by the standard TaqMan MicroRNA Assay, those continue to cover a range of certain species by the appliance of standard TaqMan Assay-based real-time PCR.

For real-time PCR, total RNA was isolated using the RNeasy mini kit, and single-stranded cDNA will be subsequently synthesized using the iScript cDNA synthesis kit. Moreover, gene-specific primers were used for TaqMan analysis. We employed MTT cell proliferation, colony formation assay and fluorescence activated cell sorting (FACS) assays for growth and proliferation analysis. Cell cycle analysis was carried out by using FACS analysis. Apoptosis detection was carried out by using TUNEL (terminal deoxynucleotidyl transferase-mediated nick-end labeling) assay. The expression of target gene(s) was assessed at the mRNA and protein level by quantitative real time-PCR and Western blot analysis. Western blotting was carried out to determine the expression of different proteins by using specific antibodies.

I practised the techniques and methods that I were being used for my project. I have been working with another lab member and my supervisor, who's main focus was to make me gain knowledge rather than just working without even knowing what is going on during my internship. Both are very supportive and encouraging and I can confidently say that I have become more comfortable with laboratory.

San Francisco is a beautiful city, but there are certain things you need to take in account before going out since it is not as safe (and clean) as Austria. Apart from that, there are a lot of things to do around here in the city, so you will not get bored. My host family is also really friendly. I got to travel beautiful places and made new friends. I look forward to going back to San Francisco to pursue a career in research.