

Ravi Dinesh, PhD
Stanford University
Department of Pathology



Project Title

Delineating Determinants of NK-cell Mediated Killing of Tumor Cells Through Functional Genomics

Type of Cancer

Not Site-Specific Cancer

Area of Research

Natural Killer (NK) cells are a type of immune cells with the capability to attack and destroy cancer cells. However, cancer cells develop strategies to avoid being killed by NK cells. How cancer cells evade NK cells is incompletely understood. One part of my project aims to use CRISPR technology to remove or increase the amount of every known gene on the surface of a cancer cell and see if this makes the cancer cell more or less likely to be killed by NK cells. Using this information will help us identify factors on the surface of cancer cells that can be targeted by drugs. Blocking or removing these detrimental factors with newly developed drugs should empower NK cells to find and destroy cancer cells. A second part of my project aims to again use CRISPR technology to find the genes in NK cells that prevent them from being fully active against cancer cells. Recently, scientists have begun transferring NK cells into cancer patients in the hopes of eliminating tumors. Discovery of factors that prevent NK cells from being fully active will allow us to modify the genes coding for these factors before putting them into patients, ensuring that patients are getting treated by highly active NK cells with high tumor-killing activity.



Ravi Dinesh, PhD
Stanford University



Grand View League
A FUNDRAISING BRANCH OF THE AMERICAN CANCER SOCIETY