GFP targeting by cytotoxic herbicide

Authors: Michelle Jensen Lauren White Hannah Mitchell Kevin Sullivan Jo Faulkner

Published Date: 11-12-2018

University of California-Santa Barbara

School of Physics

This specific target has limited options for targeting as most of the other targets are glutamine and opiates targets, which are used and inhibited in terms of drug delivery and toxicity.

There are two molecules that target GFP, referred to as activated GFP and arrested GFP and they were being used by cancer researchers at the time of this study.

A therapeutic prodrug called halviaam received from UCSF and obtained from the Japanese Pharmaceutical and Medical Sciences Co. Limited (SMED). This also has cytotoxic effects on human cancer cells. With surgical intervention this prodrug was able to target and inhibit the expression of histone deacetylase (HDAC) at specific points during histone deacetylation.

This type of therapeutic prodrug targets up to a tumor suppressor gene called GFP-induced GFP protein (GFPIP).

Harmonized with a molecularly manipulated strain of human breast cancer cells, this therapeutic prodrug decreased GFP transcription activity in the breast tumor. This modified gene is contained in the left breast duct and is expressed in the white blood cells of the breast.

In mice with the conjugated halviaam in a mice model of human breast cancer, GFP numbers were reduced as well as infiltration of antigen expressed cancer cells.

When GFP protein expression was measured by secretion markers (surface tags) such as KMT10 (suspended snellate 10 (KMT10)) at high D1 concentration, mammary tumors were reduced and tumor shrinkage was seen in breast tissue from vaccinated mice. These observations suggest that the cytokine krillaxin, which is secreted by the lung (bronze bronchioles) is more effective in inducing reduced GFP expression in breast cancer cells than chemotherapy.

Keep up with the latest research like fellow oncologists, ICRI!

A Bird Perched On Top Of A Tree Branch