C3 / Pedal the Cause 2016

"Targeting KRAS Mutant lung cancer with biphosphonated/statins and rapamycin analogs"

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Abstract:
Lung cancer is the most common human malignancy and leads to about one-third of all cancer-related deaths. There are three major genetic mutations found in lung cancers: EGFR, EML4-ALK and KRAS. The latter, KRAS, is more common in Caucasians, males and smokers, and does not currently have good therapeutic options. Previous studies have shown that select drugs prescribed for bone resorption, when used in combination with rapamycin (an immunosuppressant commonly used to prevent the body from rejecting organ and bone marrow transplants), could successfully prevent tumor growth and prolong survival. PEDAL15 grant funding will allow scientists to test the drug combination in metastatic lung tumors with KRAS mutations, as well as decipher what makes a tumor more sensitive to this drug combination. Additionally, it has been found that certain drugs designed to lower blood cholesterol (statins) could also inhibit protein modification. This grant will make it possible for scientists to test combinations of statins with rapamycin. Scientists hope to develop a viable combination therapy to combat lung cancers with KRAS mutations and demonstrate the power of immediate translation of results into the clinic.