Tumor Types Care: Single Failure Can Cause Huge Negative Impact

Authors: Teresa Roberts Michelle Castillo Samuel Frank Patrick French Michael Miller

Published Date: 02-26-2015

Jacksonville State University

School of Computer Science

Associate Editor Ivo del Zotto over at Celularity got a recent e-mail from a reader whoâ€™s working on cancer research who wrote to me â€œâ€¦The benefit of targeting standard cancer-related factors is to improve the efficacy of drugs used to treat the patient (and to eliminate toxicity issues.)â€ He saw a link I wrote on a study that looked at the potential beneficial effect of leukemia drugs known as Fsk inhibitors. Based on this discussion, I decided to click over to this abstract to find out more:

The primary objective of this study was to provide evidence that monoclonal antibodies (MAb) can selectively target and destroy chronic myeloid leukemia cells in vitro without damage to normal B cells. This study used T cell cells to determine that many more targets than those previously identified by blocking CTLA-4 function are targetable using inhibitors of FSK, including human and mouse leukemia cells derived from normal B cells. Only one out of three clinically relevant sites (acute lymphocytic leukemia, chronic myeloid leukemia, and a non-operative, acute myeloid leukemia model) were completely affected by these monoclonal antibodies. In this study, inhibition of FSK or targeting of marker protein- FSKS by IV and oral monoclonal antibodies induced toxicity that was limited to nuclear factor receptors (NIR) 3.4 and 9 (DefsinIn) and epithelial gene fusion protein (Ep1F), respectively. Treatment of these cells with FSK inhibitors resulted in normalcy and enhanced survival for both CML and indolent CML cells when these inhibitors were also administered with an oral agent (Achilliazin). Considering the therapeutic potential of monoclonal antibodies against cancer, the results of this study have important implications for the design of future clinical trials that evaluate monoclonal antibodies in patients with leukemia and other solid tumor types.

The reason I found this topic interesting, at least to me, is that my area of interest is oncology, and when you think about the threat of drug interactions in oncology, this is definitely a positive news. While many drugs are always on the market and widely accepted for their use, sometimes drugs are on clinical trials that have side effects that are sometimes problematic for patients who are exposed to these compounds. The challenge is then to see if you can understand why these drugs are having side effects and whether you can tailor them to prevent these side effects, or if you can simply limit their effects in individual patients. To see more about it, I read this post on Celularity about the findings of the study referenced above. As it stands, Iâ€™m inclined to go see if thereâ€™s more to this story, but just to be on the safe side, my colleague Xwei-Siu Kranin and I have spent some time in the past learning more about the potential side effects of these compounds. For our colleagues who might have trouble keeping up with this 24/7 news, the easiest place to check up on the day-to-day developments in cancer research and development would be the InnoCentive.org, a free public site that is a repository of research proposals that contain some level of experimental data and is moderated to increase the likelihood of presenting well-organized and well-researched research (itâ€™s like an online VC contest; however, itâ€™s not a VC â€“ itâ€™s a data repository that is far more limited in the data it has access to than VentureBeatâ€™s databases of VC investing). Iâ€™ll be posting additional articles on news and research in this area of medicine that I find of interest. Hereâ€™s to making 2012 and 2013 the year that cancer breakthroughs hit and an era in which cancer research isnâ€™t limited to scientists using fairly simplistic terms like oncology, pathophysiology, and virology.

A Close Up Of A Red And White Fire Hydrant