

# THE ULTIMATE SELF-CARE: UNLOCKING OUR OWN IMMUNE SYSTEMS TO FIGHT CANCER

The human body is a fortress of self-defenses, particularly at the cellular level, where immune cells known as “T-cells” protect the body from infection. Research has shown that T-cells may even help fight cancer, which (among other things) would provide another alternative to radiation and chemotherapies.

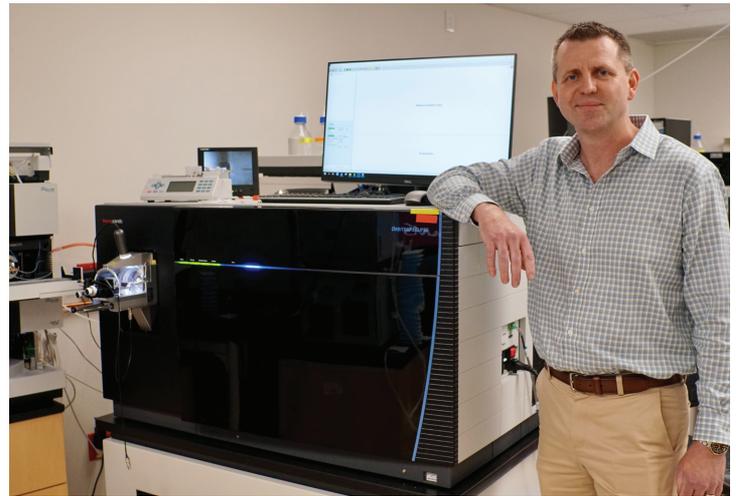
However, cancer cells can be as deceptive as they are cruel. Immune checkpoints in the body can essentially send an “off” signal to the T-cells, preventing the immune system from doing one of its jobs – destroying cancer cells.

Dr. Alan Tackett, Arkansas Research Alliance (ARA) Academy member and professor of biochemistry and molecular biology at University of Arkansas for Medical Sciences (UAMS), leads a research team dedicated to discovering the secrets to inhibiting immune checkpoints to help T-cells kill cancer cells more effectively. The science is known as “Immune Checkpoint Therapy,” which works to increase the activity of the patient’s immune cells to attack tumor cells. Tackett is especially interested in using this science in the treatment of melanomas, the most serious types of skin cancer that causes about 8,000 American deaths yearly.

“The harsh environment in a solid tumor, like a melanoma, impacts the ability of immune cells to function,” Tackett explained. “If we can figure out how to alter the environment or increase the fitness of the immune cells, we may be able to increase the effectiveness of immune checkpoint therapy and save lives.”

In the case of melanoma, immune checkpoint therapy provides a durable response in up to half of patients, but the other half of patients show no clinical benefit at all. Why? It is a perplexing question, and one that Tackett hopes to soon answer because immune checkpoint therapy could be the key to defeat a wide variety of solid tumor cancers beyond melanoma.

Beyond his research focusing on increasing the effectiveness of immune checkpoint therapy, Tackett serves as deputy director of the UAMS Winthrop P. Rockefeller Cancer. The UAMS institute is seeking National Cancer Institute (NCI) designation, which will enable access to the best therapies and cut-



Dr. Alan Tackett, University of Arkansas for Medical Sciences

ting-edge clinical trials in Arkansas. These trials, which could include immune checkpoint therapy help ensure that care is available in state and that the economic benefit of world-class treatment stays here also. “For Arkansas cancer patients and their families, we are striving to provide opportunities for them to stay in Arkansas and close to home for treatment – rather than having to seek treatments and clinical trials out of the state,” said Tackett.

The benefit to extensive cancer research extends beyond health and wellness. A byproduct of working toward and achieving NCI designation will be a positive impact on Arkansas’ economy. “Because our state’s capability in drug discovery and research is growing, UAMS is already experiencing a rapid expansion of the number of researchers, clinicians and staff needed to ramp up cancer research and care operation to the level needed for designation,” Tackett said.

“This explosion of new faculty and staff, many of which are recruited from out of state, fuels our local economy in a variety of ways,” explained Tackett, whose team has already received millions of dollars in grants to explore his important research. 