How does your skin fight cancer?

Cancer has become more and more prevalent over the years. It is a disease that does not discriminate and often has deadly results. Because of its high mortality rate, people throughout the world have tried to develop a cure, but have yet to be successful in their quest. That being said, the treatment of cancer has come a long way, to the point where doctors can develop a plan in order to treat cancer to the best of their ability. At this time, the best of their ability means a person going into remission. This is not curing cancer but containing the problem in a small area and removing it through some combination of chemotherapy, radiation, medicine, and surgery. There is always a chance that it could come back. Finding a cure for cancer has been one of the most pressing issues in the medical community. Since it is such an important problem, many different studies have been conducted on cancer. I was fortunate enough to meet with David Kim Burnham, Ph.D. in order to discuss the research he has done for the advancement of cancer research.

Dr. Burnham is currently an associate professor at Oklahoma State University. He was involved in a study called *The Impact of Meth-A-fibrosarcoma derived EMAP II on Dendritic Cell Migration* that focused on dendritic cell migration as a result of a specific tumor, meth-a-fibrosacoma, found in the body. Dendritic cells are cells that provide your immune system with the antigen or “code” needed for your immune system to be activated. This study focuses on the skin’s dendritic cells, which are referred to as Langerhans cells. Langerhans cells are only found in the skin that is activated by some source of infection on the skin.

The reason the tumor is able to cause dendritic cells to migrate is because of a certain protein that signals the start of migration. This protein is called endothelial monocyte-activating polypeptide II. When I asked Dr. Burnham about this I stuttered over the name. To which, Dr. Burnham joking told me, “that’s why we call it EMAP II for short.” He then went on to explain what he did for this study and the results that were concluded from his research.

During the interview, it was discovered that the research conducted was the first of its kind. This is because the results of this experiment showed that EMAP II activates Langerhans cell migration, something that no other study had yet to discover. What this means is that our Langerhans cells are attracted to the tumor because the tumor is producing EMAP II. This is a significant find because it shows that finding a way to produce more EMAP II will cause the Langerhans cells to be able to find and destroy a tumor quicker, thus eliminating the need for harmful radiation. This study was able to open up a whole new avenue of research, all of which have contributed to furthering the cure for cancer.

Skin is the first line of defense when it comes to anything that could harm you. Doesn’t it make sense to find out how to stop an attack on the outer shield before it can go any further? This thought could have been on the minds of the scientists who conducted this experiment. Or they could have been wondering how to destroy a tumor from within. Whatever the reason, I am thankful that there are people like Dr. Burnham who take the initiative and do the work necessary to advance the field of medicine.

Haridas, S, Bowers, M, Tusano, J, Kirkpatrick, M, Mehojah, J and DK Burnham. The impact of Meth a fibrosarcoma derived EMAP II on dendritic cell migration*.* 2008.*Cytokine* 44:304.