



Ovarian Cancer
Support Group

Boosting Immunity

OCRA-Funded Study Reveals Promising
Therapeutic Option for Boosting
Ovarian Cancer Immune Response *



Targeting a specific oncogene associated with the most common type of ovarian cancer may help increase a patient's immune response to tumors, according to recent findings from researchers at The Wistar Institute and their colleagues at University of Pennsylvania and The University of Colorado Anschutz Medical Campus.

An oncogene is a mutated version of a gene that would typically be involved in normal cell growth. The change in the gene can be either inherited or caused by environmental factors. This mutated gene or oncogene may contribute to the development of a cancerous tumor.

KDM5A is an oncogene often involved in epithelial ovarian cancer (EOC). Prior studies have shown that KDM5A is highly expressed in EOC, which is the most prevalent type of ovarian cancer. And in EOC, KDM5A is known to switch off multiple genes involved in tumor suppression.

In a promising breakthrough for targeted therapy, The Wistar Institute researchers and their colleagues have discovered that inhibiting KDM5A may help boost a patient's immune response to tumors by restoring the function of a particular biological pathway that activates tumor-killing immune cells.

"Understanding the basic mechanism guiding the infiltration of tumor-killing immune cells into the tumor microenvironment is key to leveraging the power of the immune system to fight against cancer," said Dr. Rugang Zhang of The Wistar Institute, who led the research. This study was made possible in part by OCRA grants to Dr. Zhang and Dr. Wei Zhou, also of The Wistar Institute. The research team additionally included OCRA grantees Dr. Jianhuang Lin of The Wistar Institute, Dr. Ronny Drapkin of University of Pennsylvania, and Dr. Benjamin Bitler of The University of Colorado Anschutz Medical Campus.

According to the team's findings, which have been published as a research paper in *Cancer Immunology Research*, the KDM5A oncogene specifically represses genes involved in the biological pathway known as the antigen processing and presentation pathway. A biological pathway is an ordered series of molecular interactions in a cell that leads to a certain end point or cell function. The antigen processing and presentation pathway plays a crucial role in identifying tumor cells and activating the immune system to kill them.

"Tumor cells find a way to downregulate this antigen presentation pathway, and by doing so, they evade immune surveillance," said Dr. Sergey

One to One is devoted to the on-going support of those newly diagnosed, those in remission and those in recurrence.

100% of contributions directly benefit our group by providing activities and paying for expenses.

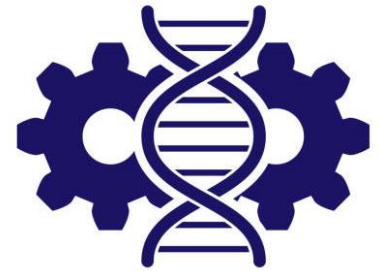
Donations are gratefully accepted and can be made by check payable to **One to One Ovarian Cancer Support Group** c/o Marilyn Brozovic 4793 Alton Dr. Troy, MI 48085

A receipt will be provided for tax purposes.

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Karakashev of The Wistar Institute, who co-authored the paper. “One of the main questions for this paper was, ‘How can we restore the function of the antigen presentation pathway to promote immune infiltration and immune cell activation?’” Karakashev explained.

The researchers conducted in vitro studies during which they knocked out KDM5A. When they inactivated this oncogene, the genes involved in the antigen presentation pathway were upregulated. The scientists then conducted in vivo studies using mice and mouse ovarian cancer cells that validated the findings of their in vitro experiments. When they knocked down KDM5A in the in vivo studies, the researchers saw an increase in the presence and activation of CD8+ T cells, which are immune cells that kill cancer cells. The study results also showed that KDM5A inhibition reduced the tumor burden and improved survival of tumor-bearing mice.



“Our findings provide a scientific framework to target KDM5A to overcome immune evasion employed by cancer cells,” said Dr. Zhang. “In addition to ovarian cancer, the pathway appears to be broadly applicable to many cancer types. Thus, we believe the findings are broadly applicable and may have far-reaching implications in developing cancer immunotherapy.”

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A HINT FROM CAROLE

Carole Kabrin professes that she usually doesn't like to listen to her doctor's advice, but she is happy that she finally did. After a recent bout of constipation, and after trying a number of remedies that didn't work for her, Carole's doctor told her to "listen to your doctor!" Here are Carole's exact words:

"I've been back on the two Senna pills in the morning and two at night ..plus the Miralax in my morning coffee .. all of which is really helping..."

I went to the workout club and did machines this evening , specifically arm weights and torso twisting..... boy that really got things moving!!!

I will have to do that every day!"

Thanks for sharing with us, Carole!



PROFILE IN *Courage*

By Marcia Gurche

Dana McCarius is a woman with extensive knowledge and many interests. Interviewing her was fascinating since I was able to get the inside track on electric vehicles. Dana is an engineer for Ford Motor Company in a contract position. She is currently working with a company developing the batteries for electric vehicles. Dana states she really loves electric vehicles and that there are some real benefits to them. They are fun to drive, and she particularly enjoys the thrill of the instant torque which they provide on takeoff. However, she says that, if you want to own an electric car, you really do need to have a garage with its own charging station. Additionally, long distance traveling can be a challenge since you must find places to charge the vehicle.



Given her career choice, it is surprising that Dana suffered with math anxiety in high school. While attending the University of Michigan, she enrolled in some summer math classes at the community college and discovered that she was actually quite strong in this area. She eventually switched from her original business program to the School of Engineering and then began her career at General Motors.

Growing up, Dana always loved kids, and as a young girl she spent countless hours playing school with her little brother. When she took a buyout from General Motors, she searched her soul for what she would really love to do, and she decided that teaching was her calling. Back to the University of Michigan she went to get a Masters in Elementary Education. She ended up teaching for five years in the Detroit School District in a variety of roles, including: math specialist; English as a Second Language teacher; third, fourth and sixth grade teacher; and high school math teacher. While she loved the field of education, her need for financial stability forced her to go back to engineering and she took a job with the Ford Motor Company, where she has been since 2014.



Dana has strong faith and is blessed with a wonderful church family, whose members helped her by taking her to doctor appointments and bringing her meals after her ovarian cancer diagnosis in 2019. She knows it sounds strange, but she felt like she was infused with much grace and joy at the time of her diagnosis. She was aware of the seriousness of the diagnosis since she was only 47 years old, the same age her grandmother was when she died from ovarian cancer. Dana's initial biopsy indicated that the tumor was benign, but unfortunately, when the debulking surgery was done, the result came back as positive for ovarian cancer. Her brother is an interventional radiologist, so while she was diagnosed at an early stage, he insisted that she undergo six rounds of chemotherapy, for which Dana is very grateful. She subsequently had to have three major surgeries for other issues, so her last few years have been difficult, but she keeps plugging on. The thing that really helped her the most was seeking out

people and things that made her laugh. Whether it be cartoons, funny movies or comedy shows, Dana went out of her way to find things to laugh about when she was recovering from chemotherapy and surgery.

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Dana was raised in Flint. Her parents, including her mother, **Nancy**, her stepfather, **David**, and her dad, **Jack**, are still in the Flint area. Dana's brother, **John**, has established a number of radiology offices throughout the state of Alabama, where he lives with his wife, **Lauren**, an emergency room doctor, and their three children: **Madeline**, **William** and **Claudia**.



Dana loves animals and has rescued dogs, cats, and even a duck! She presently owns a cat named **Callie** that she rescued about 11 years ago, and a new puppy, **Piper**, who is about two years old. Piper has enormous energy and requires multiple walks per day.



Dana is a strong advocate for herself. She doesn't hesitate to seek out and find the care she needs, and she has put together a good team of doctors from various health care facilities. When she was hospitalized for surgery last June, her beloved 18-year-old dog passed away. She was profoundly touched by the outpouring of

love she received from the staff on the fourth floor west at Troy Beaumont. They went above and beyond to make a terrible situation tolerable with their kindness and compassion. These are the kinds of people Dana is drawn to. She has met many other wonderful folks through her participation in online classes and bible studies.

Unfortunately, Dana has had two floods in her townhouse recently. With the difficulty incurred in dealing with restoration companies, she is going to have to call on her inner strength and watch a lot of comedies to get through the renovations. I have no doubt she will come through this with flying colors, just like she has gotten through everything else she has faced in the last three years. ♡

meeting

Group meetings are held on the **2nd Thursday** of the month at **4 pm**. Meetings are in-person at the **Berkley Public Library** and are also held via Zoom. You are welcome to join us for dinner at *The Avenue Restaurant*, located on Woodward just north of 13 Mile following the meeting.

*** August 11 ***

Guest Speaker: Daniel Devine, Licensed Acupuncturist, Beaumont Integrative Medicine and Natural Ease Acupuncture
Topic: Benefits of Acupuncture

September 8 – TBD
October 13 – TBD
November 20 – TBD



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HAPPY SURVIVORsary!



Shirley Malkiewicz	21 yrs !
Ginny Dimsa	16
Judy Nitz	12
Debbie Zemmer	10
Mary Walosin	7
Carole Kabrin	5
Diane Callaghan	4

Objectives of support group:

- ✦ *Provide a forum for ovarian cancer patients to address concerns;*
- ✦ *Support each other through initial treatment phase, during potential recurrence, and with issues related to long term survival;*
- ✦ *Establish core group of survivors willing to visit newly diagnosed patients;*
- ✦ *Increase awareness of ovarian cancer, including its symptoms and risk factors, in the hope of achieving earlier detection and treatment.*