



# Behind Pink October

**For this team at Qatar Biomedical Research Institute, demystifying breast cancer research to the general public is just as important as their work itself.**

**“At the booth and our lectures, we explained the major discoveries in cancer, their history, cancer biology and therapeutics. We also spoke about the tools being used in the research and how the researchers of the past have contributed to the treatments of today.”**

**Dr Manale Karam**  
Postdoctoral fellow  
QBRI

**T**his October, for three days only, the researchers at QBRI exchanged their white lab coats for bright pink t-shirts in order to take their work to the outside world and vice versa. “It gives us some perspective,” says Dr Julie Decock. “After so many hours in the lab, cancer can become an abstract thing. Meeting with people helps put our work back into context.”

With a booth in Villaggio Mall and two seminars at Qatar University and HBKU, the team also hopes to simplify the technicalities of cancer and cancer research, helping lessen the fear of the disease and encourage keen, young minds to consider it as a career option. “It is very important for the public not to have a negative image about cancer. The way people deal emotionally with cancer can impact the attitude of cancer patients to hopefully give them a better quality of life and may impact the outcome of the disease,” says Dr Mariam Al Muftah. “It is

important to explain in laymen terms the underlying causes of cancer, the steps in the progression of cancer, as well as the current and new therapies so that you can make the public more aware without scaring them,” Dr Decock says. “It helps people better understand how diet and environment contribute to the development and progression of cancer, and makes them more aware of the benefits of screening and early detection. This is very important because in the earlier stages breast cancer can be relatively easily treated but this becomes very difficult towards the end.”

Dr Reem Al Olaby says this is the first time QBRI is engaged in cancer outreach. “We want to engage the public, and women specifically. We want to gauge to what extent people might be hesitant to approach the booth because of fear of the word ‘cancer’, and we want to see if we can encourage people to learn more about breast cancer. This might help us get a better idea of how aware people are of breast cancer and why women might be reluctant to get screened.”

## Dr Mariam Al Muftah

**Scientist** at QBRI and Assistant Professor of Biology at Qatar University. Graduated from the UK and joined QBRI in 2012 as one of its first researchers. At QBRI, her work is focused on identifying novel immunotherapies for the treatment of breast cancer. She has also been working on understanding the progression of prostate cancer through a collaborative project with Dr. Lotfi Chouchane from Weill Cornell Medical College in Qatar.

### The brass tacks

The medical research community in Qatar is very small and the team says that it is important for all of them to work together and not operate in silos. “We have collaborative research projects with Weill Cornell Medical College in Qatar, Hamad Medical Corporation and Sidra Medical and Research Center and also hope to work with Qatar Biobank in the future,” says Dr Decock. “Qatar Biobank is a fantastic initiative and is important for the country, not only for the public but also for us as researchers. This way we have both normal and cancerous samples at our disposal to compare.

“And because the indigenous population is relatively small, samples are precious. This is why we aim for collaborations with scientists with cross-interests so that we can make the most out of every specimen,” Dr Al Muftah says.

The small size of the local population (Qatar Biobank only collects samples from Qatari and long-term residents) means a better chance for researchers to look at the genetic contributors as well and understand the biomarkers. “Using these biomarkers from the Qatari population or long-term residents, we can try to identify novel therapies that are tailored toward Qatari patients,” Dr Al Muftah says. “Our bodies are affected not only by genetics, race and ethnicity but also by environmental and geographical factors and lifestyle. These could have led to genetic differences or specific proteins that are present in Qataris and or people who have lived in Qatar for a long time which will allow us to distinguish between cancerous and non-cancerous cells,” Dr Decock adds.

The cancer team is currently focusing on immunotherapy for breast cancer. “This is a recent breakthrough in cancer treatment which uses the natural immune system to target and eradicate cancer, unlike chemotherapy which kills both healthy and cancerous cells,” says Dr Manale Karam.

Currently there are FDA-approved drugs for immunotherapy in different



**Dr Manale Karam**

**Postdoctoral fellow.** Joined QBRI in November, 2013, after obtaining her PhD in cancer biology and pharmacology from the University of Paris-Sud in France. At QBRI, her work is focused on identifying new treatments for breast cancer and leukemia by using two different approaches; immune system-based therapy or screening of natural products derived from the Qatari flora. She has collaborations with national and international research institutes; i.e. the National Center for Cancer Care & Research in Qatar and Institut Gustave Roussy in Paris, France.

types of cancers like leukaemia and melanoma, but not yet in breast cancer. “Various immunotherapeutic strategies are undergoing clinical trials and it’s a very hot area of research,” Dr Decock says. The challenge in developing immunotherapy drugs for breast cancer and cancer in general is partly due to the different ways cancer looks and behaves. “The idea of personalised medicine is to find a specific marker expressed by the patient’s cancer cells which we can target for example by the immune system. However, the immune system responds differently to different cancer types. Some cancers have a tricky way of blunting themselves not to be seen as foreigners by the immune system but as a natural part of the body. So it can be difficult to target these cells specifically,” says Dr Al Muftah. “That’s why we have been able to develop drugs for some but not for other types of cancer. Also the personalisation aspect means that if the drug works on one person it won’t necessarily work on others.” Dr Karam adds, “It’s also about accessibility to the immune system. Treatment of leukaemia (blood cancer) through immunotherapy has seen the most success because the cancerous cells and the immune cells are generated from the same sources and the proximity works favourably



**Dr Julie Decock**

**Postdoctoral fellow.** She joined QBRI in November 2013 after 5 years of postdoctoral research in the UK. Her research career has mainly focused on the biology of cancer, including breast cancer, and currently she is investigating new targets for breast cancer immunotherapy. She is collaborating with Weill Cornell Medical College in Qatar and Sidra Medical and Research Center.

in targeting the disease.”

“In addition to immunotherapy, we also aim to develop new targeted pharmacological therapies through screening of natural products specific to the Qatari flora. Together, with Dr Ameena Fakhroo (Senior scientist at QBRI), we hope to discover new compounds that specifically target defected molecules in cancer cells and limit their aberrant pro-tumoral function,” says Dr Manale Karam.

The team is in the initial stages of their research and is aware that they have a long way to go, but are very enthusiastic about the novelty of their work and the implications for this increasingly prevalent disease. All hospitals and laboratories within the GCC are now obliged to register all new cancer patients into the Gulf Centre for Cancer registration. This data has made it clear that breast cancer is the most common cancer in women in Qatar. In 2011, 150 women were diagnosed with breast cancer, of which approximately 30% are of Qatari descent and the number of new cases is anticipated to increase 60% by 2020. This increase can be partly attributed to the increasing population and changing lifestyle with increased tobacco consumption, a high fat and low fiber diet, lack of physical exercise and increased awareness ■