

The Susan G. Komen for the Cure® Tissue Bank at the IU Simon Cancer Center is a unique resource—a repository of normal breast tissue donated by women who have not had breast cancer. Scientists working in the field of breast cancer research have long expressed the need for such a resource because in order to discover what is abnormal, it is first necessary to know what is normal. Established in 2007 in response to this need, the Komen Tissue Bank (KTB) contains frozen human breast tissue, whole blood, DNA, saliva, serum, and plasma, all of which is annotated with detailed information about the donors.

The Tissue Bank's first collection actually took place a year earlier as part of a research project. This initial collection was named Mary Ellen's Tissue Bank in memory of a patient of one of the doctors involved in the Bank. In 2007, Komen for the Cure granted \$1 million to help the Bank expand its collection. Including that initial grant, Komen has committed a total of \$7 million in support for the Komen Tissue Bank, which includes the Mary Ellen Collection. Komen Affiliates also have supported the Tissue Bank by hosting blood collections at Race for the Cure events and helping recruit tissue and blood donors.

The Donors

Women who have never had breast cancer, as well as those who have, volunteer to donate and provide detailed information that will enhance the research potential for each specimen. Donors fill out a comprehensive questionnaire including menstrual history, phase of the menstrual cycle (if premenopausal) at time of donation, reproductive history, personal health history, family history and current medications.



In January 2010, 108 members of the IU chapter of Zeta Tau Alpha donated tissue. Joining them for a photo op were Komen President, Elizabeth Thompson (center left), Dr. Anna Maria Storniolo (center right), and Dr. Robert Goulet.

Three women who donated healthy tissue were later diagnosed with breast cancer and have returned to donate their cancerous tissue, as well. Another woman has donated cancerous and healthy tissue from her opposite breast. These samples are especially valuable because they provide their own control for research. Typically, when comparing normal tissue from one woman to the cancerous tissue of another, it is difficult or impossible to know which differences are caused by cancer, and which may be due to other factors. When the healthy and cancerous tissue are from the same woman, changes can more definitively be linked to the cancer.

Cancer patients, their families and friends have actively participated in fundraising and awareness campaigns for many years, but the Komen Tissue Bank offers the public a unique way to participate in research. Even though the donors will not benefit directly from their donation of tissue, blood or saliva, they are providing an invaluable resource and enabling

research to maximize its potential today and for generations to come. The donor has the right to withdraw consent for the storage or further use of any remaining specimen at any time and the right to have all data removed from the KTB database.

Research and the Komen Tissue Bank

The KTB's goal is to provide researchers with the spectrum of "normal" from puberty to menopause, including specimens from women who are pregnant, lactating and those who have recently stopped breast feeding. Combining data from these specimens with that obtained from premalignant and malignant breast specimens will provide researchers with the entire spectrum of breast carcinogenesis, from "normal" breast tissue to invasive cancer, thus enabling insight into the molecular mechanisms of malignant transformation.

Researchers can use the specimens in one of two ways:

- By submitting research proposals to the KTB; specimens and related data will be provided to scientists whose proposals are approved.
- For specimens that are prohibitively rare, KTB scientists will perform analysis (e.g., gene expression arrays) and will make this data publicly accessible and free of charge via the website.

The premise of the KTB is that a large bank of normal samples, collected, processed and stored using best practices, will accelerate the process of discovery and provide for sufficient specimens for statistical significance when comparing normal to abnormal.

The KTB's standards and guidelines also could serve as a model for tissue collection for other disease processes. The unique donor and volunteer participation in this tissue bank demonstrates the potential to establish large banks for scientific study at multiple institutions nationally and internationally.

Komen Tissue Bank Highlights

April '06	Mary Ellen's Tissue Bank is established with a blood collection
April '07	Komen awards first grant of \$1M to the Tissue Bank
Sept '09	Tissue Bank holds largest blood collection to date at Evansville Race for the Cure
March '10	Oracle commits \$1M to support development of the Virtual Tissue Bank
July '11	KTB selected as a beneficiary of the 2012 Super Bowl. The partnership, Indy's Super Cure, will increase the Tissue Bank's capacity and the number of tissue donors from diverse populations, and will highlight Central Indiana's commitment to advancing life sciences, medicine and healthcare.
Jan '12	664 samples collected at largest tissue collection event, held in conjunction with Indy's Super Cure

Sharing Research Results

Scientific data and research results are often not shared, and several researchers might conduct the same project with the same results without knowing about each other's work. The KTB leadership feels strongly that the data generated by the research done with the KTB samples should be shared widely.

Research results will be published as appropriate in various scientific journals, and links to the papers as well as presentations from scientific meetings will be published on the KTB website. The KTB plans to share all digital data generated from the specimens as part of a Virtual Tissue Bank that will be available on the internet. The Virtual Tissue Bank, made possible with generous support from Oracle, will allow researchers across the globe to access tissue data and conduct entire research projects through computer simulation.

Susan G. Komen for the Cure® is proud to support the Komen Tissue Bank at the IU Simon Cancer Center and help bring this vital resource to breast cancer researchers around the world. For more information about the Tissue Bank, visit www.komentissuebank.iu.edu.

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