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Studies of Inherited Breast Cancer Genes

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13. ABSTRACT (Maximum 200) The objectives of this infrastructure enhancement project are to establish a population-based biological specimen and companion risk-factor data bank on 225 invasive breast cancer cases, ages 35 and under. These breast cancer cases have been enrolled through the tumor incidence registries in Connecticut, Massachusetts and 7 regions in California with a total population of 21 million (8% of U.S. women). Demographic, epidemiologic and family history data have been collected on 225 cancer cases, and fresh blood specimens have been processed to produce a lymphoblastoid cell line, cDNA and plasma in years 1-3. A computerized file of the epidemiologic data and specimen data has been generated. Despite a series of initial obstacles, we have completed on schedule all activities outlined in our Statement of Work. We have announced the availability of the resource to researchers on the internet with additional data available via the email link on this site. An Outside Advisory Committee will prioritize requests for tissues and risk factor data. This resource is available to multiple investigators for detection of <i>p53</i> , <i>BRCA1/2</i> and other inherited breast cancer susceptibility genes, and studies of gene-environment interactions.				
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FOREWORD

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NA For the protection of human subjects, the investigator(s) adhered to policies of applicable Federal Law 45 CFR 46.

X In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

X In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

NA In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

Justin Li 10/21/98
PI - Signature Date

TABLE OF CONTENTS

	Page
Front Cover.....	1
Report Documentation Page.....	2
Foreword.....	3
Table of Contents.....	4
Introduction.....	5
Body.....	5
Conclusions.....	8
References.....	9
Bibliography.....	10
List of Personnel.....	11
Appendix 1.....	12
Appendix 2.....	20
Appendix 3.....	21

INTRODUCTION

Our purpose is to develop a biological specimen bank and epidemiological database of 225 early onset invasive breast cancer cases (ages 35 and under) enrolled in the population-based cancer incidence registry in Connecticut, Massachusetts and 7 regions of California (Santa Clara region, Central Valley, Sacramento, Inland Empire, San Diego, Bay Area, and Orange regions). Approximately one-third of breast cancer cases under age 35 are estimated to be carriers of an inherited gene: estimated carrier rates are 36% at ages 20-29; 29% at age 30; 28% age 31; and 24% at 35 years. The cut-off at age 35 is based on sample-size considerations. This resource will provide an infrastructure for the identification and studies of inherited breast cancer susceptibility genes, and their interactions with hormonal and environmental risk factors. The cases will be generated from a population base of 21 million (8% of entire US population) that is of special interest to breast cancer researchers. Age-adjusted cancer mortality rates, 1985-89, in Massachusetts ranks 6th highest nationwide, and Connecticut ranks 13th^{1,2}. Both States are in the high breast cancer-mortality belt that spans the Middle Atlantic and New England regions. California, the most populace state in the nation, has substantial minority populations, including Asian-Americans (9.9%), Hispanic-Americans (20.9%), and Black-Americans (6.1%) in the study regions. The racial composition of Massachusetts is 88% Whites, 5% Hispanics, 5% Blacks, 2% Asians, and 0.6% others. In Connecticut, there are 83% Whites, 8% Blacks, 7% Hispanics and 2% Asians and 0.1% others.

BODY

The objectives of the proposal are to identify all incident invasive breast cancer cases, ages 35 and under in a 3-year period, using rapid ascertainment systems available for the population covered by the cancer incidence registries of the State of Connecticut, Commonwealth of Massachusetts, and 7 regions in California that encompass 8% of the entire US population. With permission of the treating physician and patient, we planned to collect a completed questionnaire for 225 subjects, as well as peripheral blood. We proposed to use the blood sample to establish a lymphoblastoid line, produce cDNA, a plasma specimen, and store viably frozen cells along with paraffin blocks in laboratories of the PI and co-PIs in California and Massachusetts. At the end of year 3, we would make available to approved investigators all questionnaire and specimen summary data. An Outside Advisory Committee of leading scientists will prioritize requests from any breast cancer investigator for biologic specimens.

Methods were defined to uniformly collect blood specimens and questionnaire data from incident invasive breast cancer cases (age 35 and under) ascertained in Years 1-3 through the population-based cancer registries for Massachusetts and Connecticut, and 7 participating regions of California. Processing of specimens and establishment of a tissue repository and epidemiologic database for at least 225 cases was targeted. In total 499 eligible subjects were identified and physician permission was granted to contact 456 of these subjects. With physician permission, a total of 291 patients completed the risk factor questionnaire, and 261 lymphoblastoid samples were attained. Summary risk factor data for the 261 subjects who donated blood is attached (Appendix 1). From these blood samples, 211 cell lines were established (Appendix 2). Reasons for line

failures include low blood count, shipment delays and small blood volume from treated cancer patients with poor vein access, as well as technical laboratory problems. An announcement of the database has been on-line for e-mail accession, and specimens can be distributed to investigators with high priority studies. Despite initial obstacles, the project has been completed as described and later modified with DOD approval.

We had established mechanisms for rapid case ascertainment of all incident breast cancer cases within the initial 24 months of the project; obtaining informed consent from subjects; administering a standardized interview; performing a phlebotomy and processing the specimen³⁻¹⁰. Rapid case ascertainment systems differ slightly in California, Massachusetts and Connecticut. The approach in each region has been determined by cost considerations, and established resources.

In California, the project was conducted through the Cancer Surveillance Program for all 7 population-based California cancer registry regions³⁻⁵. In addition to the fact that cancer reporting is mandatory throughout the State of California, the Cancer Surveillance Program has long maintained a close working relationship with health care facilities and physicians throughout the region. Many hospitals participate in joint cooperative clinical research protocols. The Cancer Surveillance Program also circulates a newsletter that is used to inform local healthcare facilities and physicians of the study and ensure prompt enrollment of all patients. The rapid case ascertainment systems previously developed for this region have been used in all 7 population-based California cancer registry regions. The Cancer Surveillance Program staff contacted all health care facilities in the region that diagnose breast cancer cases. The Cancer Committee Chair and Tumor Registrar of each hospital of these regions were informed of the study. One individual from each facility was designated as the contact person with the Cancer Surveillance Program staff for rapid identification. The Cancer Surveillance Program staff worked with them to examine pathology reports and surgery logs on a regular basis.

In Connecticut, the rapid case ascertainment system has been used for many studies over the last decade⁶. For this project, rapid case ascertainment was used to identify cases in the 9 hospitals found in a preliminary study to have reported two-thirds of the incident early-onset breast cancers. Other patients were identified through the usual reporting mechanisms of reporting cancer incidence to the Connecticut Tumor Registry.

In Massachusetts, pilot data show that the majority of very young breast cancer cases are referred to a few specialty centers for consultation and treatment. These cases can be efficiently ascertained at lowest cost by directly approaching clinicians and hospital tumor registries of the Dana-Farber Cancer Institute (the Regional Comprehensive Cancer Center), its sister institutions in Harvard Medical School (Brigham and Women's, Massachusetts General, Beth Israel, Deaconess, and Mount Auburn Hospitals), and Dana-Farber Affiliate community hospitals. Nearly 2/3 of all incident breast cancers of early onset in Massachusetts can be rapidly ascertained through these institutions⁷. Recruitment from more than 100 community hospitals statewide proved problematic, largely because each of their Institution Review Boards (IRBs) had to be approached individually. Some had no previous experience with cancer genetic studies, and others required changes that would destroy uniformity of the study.

Recruitment of subjects, informed consent and questionnaire administration for California cases were handled through UC Irvine, and Massachusetts and Connecticut cases were through Dana-Farber. Consent to participate in this study is a 2-step process. Initially, the physician of the subject was contacted for permission to inform the patient of the study and request voluntary participation. With physician consent, the patient was sent a letter that explained the study, and subsequently telephoned. After verbal consent was obtained a telephone questionnaire was administered. In addition, arrangements were made for collection of up to 50 ml of peripheral blood by venipuncture at a facility specified by the patient.

Arrangements were made for collection and shipment of blood specimens to Boston. We have extensive experience in collecting, shipping and processing freshly collected blood samples from study subjects within the United States^{3-5, 8-11}. Cases had their blood drawn at either one of the collaborating centers, by their family doctor, oncologist or local health care facility or at a home by a member of the visiting nurse association. The physician or clinic designated by the patient was contacted, and the purpose and procedures explained. A package with consent form, blood collection and handling instructions, Leukoprep tubes, and a pre-paid shipping invoice was sent prior to the date of collection. No medical complications were encountered. These specimens were delivered to the laboratory in Boston by express mail (or by taxi for specimens collected locally). Cells were used to generate EBV immortalized lymphoblastoid cells. This process involves culturing cells over a period of 6-8 weeks before stable immortalized cells are established. A test of cell-viability was performed before the immortalized cells are considered properly frozen and stored. Requests from researchers for a cell line can either be filled directly from these frozen vials or by thawing out samples and regenerating more frozen sample vials. If available, primary lymphocytes have also been viably frozen in 10% DMSO as a reserve source of cells in case there is ever a need to regenerate a new lymphoblastoid cell line, as well as produce genomic DNA.

During the study, however, we had to modify our proposal regarding collection of breast tumor blocks. Hospitals are refusing to send us the blocks, a departure from past standard of practice. Alternatively, they were willing to cut slides, but often at charges of over \$100. A supplemental request to our award could not be made and the Project Officer agreed to drop this aspect of the project. We have met all other study objectives within the time specified in our proposal. To ensure equal access to the resources, the Outside Advisory Committee will prioritize requests. The following breast cancer researchers have agreed in writing to serve on the Committee:

Dr. Bruce Ponder, Director, CRC Human Cancer Genetics Research Group, Cambridge University, England;
Dr. Barbara Weber, Director, Breast Oncology Program, University of Michigan Medical and Genome Center; and
Dr. Anne Bowcock, University of Texas, Southwestern Medical Center.

A group of leading epidemiologists, clinical investigators, molecular biologists and geneticists has been contacted regarding their personal use of the resource to be developed under this proposal. Availability of the database and specimens has been announced on the Internet (see Appendix 3; <http://wwwicic.nci.nih.gov/breastdata/sc9dana.htm>.) Detailed information about our risk factor database and specimen availability may be provided via the e-mail link on this web site. We have

received a number of inquiries about the specimen bank through the e-mail link on this Internet site. However, no written requests to use this resource have been received to date.

CONCLUSIONS

All aspects of our study have been completed on time. Specifically, we have collected risk factor data from 291 patients under age 35, as stated in our Statement of Work. We have collected bloods from of these 261 patients. Lymphoblastoid cell lines have been successfully established when adequate volume of blood has been obtained. We have already placed an announcement on the Internet regarding the availability of the specimen resource (see attached notice). Our External Advisory Committee is prepared to review our request for utilization of the materials and data. The work has been accomplished despite multiple early problems with hospital IRBs who questioned various aspects of the DOD requirements for informed consent. This is an infrastructure grant, so no publications were expected. However, we are preparing a paper to describe the resource, and to compare risk factor data in our population based series with published data of the Cancer and Steroid Hormone (CASH) Study.

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PERSONNEL

Name	Role on Project	effort
Frederick Li, M.D.	Principal Investigator	20% 9/30/94-9/29/97 5% 9/30/97-9/29/98
Anastasia Satterfield	Data Manager	25% 9/30/94-9/29/95
Christine Henault	Data Manager	45% 9/30/96-5/31/97
Katherine Nicholls	Data Manager	25% 9/30/97-9/30/98
Nina Cardoza	Data Manager	10% 3/1/98-8/1/98

Appendix 1

SUMMARY RISK FACTOR DATA FOR ALL SUBJECTS WHO DONATED A BLOOD SAMPLE

DOD/EARLY BREAST CANCER STUDY SUMMARY OF RESULTS

DEMOGRAPHIC INFORMATION											
COLLEGE											
EDUCATION	TOTAL	<8 YEARS	8-11 YEARS	12 YEARS	SOME COLLEGE	GRAD	MASTERS	MD, PHD, JD	OTHER		
	261	0	8	52	82	79	14	3	23		
%	100	0.0	3.1	19.9	31.4	30.3	5.4	1.1	8.8		
LIVING AS											
MARITAL		SINGLE	MARRIED	SEPARATED	DIVORCED	WIDOWED	MARRIED				
	261	45	181	5	19	0	11				
%	100	17.2	69.3	1.9	7.3	0.0	4.2				
RELIGION											
		BAPTIST	EPISCOPALIAN	JEWISH	METHODIST	MORMAN	PRESBYTERIAN	PROTESTANT	CATHOLIC	UNITARIAN	OTHER
	261	12	10	8	11	1	5	28	126	1	49
%	100	4.6	4.0	3.2	4.4	0.4	2.0	11.2	50.2	0.4	19.5
ETHNIC											
		WHITE	BLACK	HISPANIC	ASIAN	AMERICAN	OTHER				
	261	204	13	28	3	1	12				
%	100	78.2	5.0	10.7	1.1	0.4	4.6				
SPOUSE EDU											
COLLEGE											
<8 YEARS	8-11 YEARS	12 YEARS	SOME COLLEGE	GRAD	MASTERS	MD, PHD, JD	OTHER				
	213	2	5	81	53	41	10	8	13		
%	100	0.9	2.3	38.0	24.9	19.2	4.7	3.8	6.1		

PREGNANCY AND FERTILITY													
	No	Yes											
EVER PREG		71	190										
		0	1	2	3	4	5	6	7				
TOTAL TIMES PREG	190		35	73	45	19	14	2	2				
LIVE PREG	326		64	86	23	6	1	1	0				
MISCAR	69		32	13	2	0	1	0	0				
STILL BIRTH	3		3	0	0	0	0	0	0				
ABORTION	94		37	21	2	1	1	0	0				
Out Come			Live	Still birth	Miscar	Abort	Multiple	Preg now					
PREG 1	190		115	0	28	47	2	0					
PREG 2	166		106	3	22	23	1	0					
PREG 3	82		57	1	8	13	2	1					
PREG 4	37		26	0	6	5	0	0					
PREG 5	17		8	0	1	6	1	1					
PREG 6	2		1	0	0	0	1	0					
	483	0	313	4	63	84	7	2					
							Early+	full term+	late +				
Duration of Pregnancy		don't know	<8	8-16	16-23	24-31	32-36	36-39	40-43	44-47	don't know		
PREG WKS 1		1	32	33	2	2	3	32	77	4	5		
PREG WKS 2		3	16	25	2	3	10	33	63	1	2		
PREG WKS 3		0	5	15	1	2	5	16	34	2	1		
PREG WKS 4		1	4	4	0	1	1	7	18	0	2		
PREG WKS 5		0	1	4	0	0	0	2	7	0	2		
PREG WKS 6		0	0	0	0	0	0	0	1	0	1		
Live born			Boy	Girl	Twin Girls	Twin Boys	Twin boy & girl						
BIRTH 1	117		63	52	1	0	1						
BIRTH 2	107		50	56	0	1	0						
BIRTH 3	69		29	28	0	2	0						
BIRTH 4	26		13	13	0	0	0						
BIRTH 5	9		5	3	1	0	0						
BIRTH 6	2		1	0	0	1	0						
	320												
Birth Weight Oz.		<80	80-88	89-96	97-104	105-112	113-120	121-128	129-136	137-144	145-152	153-160	>160
OZ 1		2	6	4	10	19	12	27	12	11	8	4	3
OZ 2		3	2	3	6	15	20	18	24	11	6	4	1
OZ 3		1	0	6	2	9	10	12	12	5	4	0	0
OZ 4		0	0	0	2	1	9	6	4	3	2	0	0
OZ 5		0	0	1	1	2	1	0	0	3	0	0	1
OZ 6		0	0	0	0	1	0	0	0	0	0	0	1
Birth Weight Oz.		<88	89-104	105-120	121-136	137-162	>162						
OZ 1		7	14	31	39	19	10						
OZ 2		5	9	35	42	17	6						
OZ 3		1	10	19	24	9	0						
OZ 4		0	2	10	10	5	0						
OZ 5		0	2	3	0	3	2						
OZ 6		0	0	1	0	0	2						
		No	Yes										
BRFEED 1	117	43	74										
BRFEED 2	107	36	68										
BRFEED 3	69	26	33										
BRFEED 4	26	11	15										
BRFEED 5	9	4	5										
BRFEED 6	2	1	1										
Weeks breast fed		1 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 139				
NURSE 1		20	16	11	11	5	8	0	3				
NURSE 2		14	21	12	7	2	3	5	4				
NURSE 3		7	7	6	6	3	1	3	0				
NURSE 4		4	5	2	1	0	1	1	1				
NURSE 5		2	1	2	0	0	0	0	0				
NURSE 6		1	0	0	0	0	0	0	0				
		48	50	33	25	10	13	9	11				
		No	Yes										
PREG MED		179	11										
Birth No.			1	2	3	4	5	6					

15

Health

		No	Yes	<10	10to14	15to19	20to24	25to29	30to35	
GALL BLADDER	261	245	16							
AGE GALL				0	0	0	4	6	6	
ACNE	261	241	20							
AGE ACNE				0	10	4	2	2	2	
DIABETES	261	257	4							
AGE DIABETES				0	1	0	0	2	1	
POLYPS	261	259	2							
AGE POLYPS				0	1	0	0	0	1	
HIRSUTISM	261	251	10							
AGE HIRSUT				0	1	3	1	1	1	
OV CYST	261	209	52							
AGE CYST				1	1	10	4	15	18	
HBP	261	253	8							
AGE HBP				0	0	2	2	2	2	
HI CHOL	261	234	27							
AGE CHOL				0	0	2	6	6	11	
PELVIC SURG	261	243	18							
				1	0	6	2	5	4	
EST		17	1							
FIBROCYSTIC	261	207	54							
AGE FIBRO				0	0	9	12	22	10	
PRIOR BX	261	232	29							
REASON BX			28	0	1					
PRIOR BX AGE				0	1	8	6	4	8	
			Benign Cyst	Malignancy	Unkn					
BX FIND			26	2	1					
BR SURG	261	249	12							
BR SIZE		3	9							
BR SURG AGE				0	0	2	3	6	1	
			Augmentation	Reduction	Other					
BR PROCED			8	2	2					
			Self	Mamogram	MD	Other				
BR FOUND	261		208	17	22	14				
SMOKING HISTORY										
		No	Yes							
SMOKE 100		153	108							
SMOKE NOW		74	34							
		0	1 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34		
SMOKE START			1	25	67	14	1	1		
SMOKE END			0	0	9	27	27	12		
DUR SMOKE		2	22	24	27	13	1	0		
		1 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	Don't Know
CIG DAY		24	13	32	27	3	4	0	1	4

HEIGHT, WEIGHT & ACTIVITY		9	10	11	12	13	14	15	16	17	18	19	20 to 24	25 to 29	30+	dk
MEN 1ST		8	12	40	74	69	35	12	6	2						3
MEN REG AGE		2	10	20	46	36	39	25	19	9	15	4	9	0	3	15
MEN REG			Natural	BC Pills	Other	Never reg										
			210	40	2	9										
			Much lower	Some what	Average	some what	much higher									
HEIGHT 12			18	38	100	57	48									
WEIGHT 12			43	59	114	39	6									
		no	yes													
VIG PHY 12		110	151		104 to	156 to	208 to	250 to	312 to	364 to						
times per year			<52	52 to 103	155	207	259	311	363	415						
VIG FREQ 12			1	4	18	31	13	42	5	35						
Req to keep wt low?		no	yes													
VIG WEIGHT 12		148	3													
MOD PHY 12		24	237		104 to	156 to	208 to	260 to	312 to	364 to						
times per year			<52	52 to 103	155	207	259	311	363	415						
MOD FREQ 12			1	12	30	47	16	55	1	69						
Req to keep wt low?		no	yes													
MOD WEIGHT 12		235	2													
			very slender	average	a little over weight	very over weight					Don't know					
BUILD 20			90	115	50	5					1					

Height	Inches	<60	60	61	62	63	64	65	66	67	68	69 >69	dont know		
HEIGHT 20		7	14	13	24	26	36	32	28	24	22	12	23	0	
WEIGHT	pounds	<90	90-99	100 to 109	110 to 119	120 to 129	130 to 139	140 to 149	150 to 159	160 to 169	170 to 179	180 to 189	190 to 199	dont know	
WEIGHT 20		1	11	35	43	69	39	23	11	8	8	4	0	5	4
		no	yes												
VIG PHY 20		174	87		104 to 109	156 to 159	208 to 209	260 to 269	312 to 319	364 to 369					
times per year		<52	52 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	110 to 119	120 to 129	130 to 139	140 to 149	150 to 159	160 to 169	170 to 179
VIG FREQ 20			5	6	8	19	15	16	5	11					
		no	yes												
VIG WEIGHT 20		80	4												
MOD PHY 20		75	186												
			<52	52 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	110 to 119	120 to 129	130 to 139	140 to 149	150 to 159	160 to 169
MOD FREQ 20			8	14	42	49	23	24	1	23					
		no	yes												
MOD WEIGHT 20		182	4								0				
		<100	100 to 109	110 to 119	120 to 129	130 to 139	140 to 149	150 to 159	160 to 169	170 to 179					
WEIGHT LO		16	42	58	62	36	14	13	10	6					
WEIGHT HI		0	6	16	30	50	33	31	25	61					
		<20	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	110 to 119	120 to 129	130 to 139	140 to 149
WEIGHT LO AGE			94	38	19	20	14	22	10	8	8	6	10	3	2
WEIGHT HI AGE		10	10	8	4	5	12	20	12	11	16	17	32	13	17
		Never over weight	below waist	around above waist	equal										
WEIGHT GAIN	261	4	142	46	69										

[illegible]

Appendix 2

DOD - Early Breast Cancer Study Summary of Responses

Eligible Subjects	499
Physician Permission	456
Interview Completed	291
Blood Received	261
Specimens Available*	235
Cell Lines Established	211

* Either frozen cell line, plasma, blood or DNA

Appendix 3

INTERNET SITE ANNOUNCING AVAILABILITY OF THE BIOLOGICAL SPECIMEN BANK AND EPIDEMIOLOGICAL DATABASE



Breast Cancer Specimen Data Information System

Welcome to the NCI Breast Cancer Specimen and Data Information System

NEW
what's new

DATA
database

INFO
about

MAIL
suggest

OTHER
resources

This database was developed by the National Cancer Institute (NCI) to help breast cancer researchers identify sources of biological specimens needed for their research. Breast cancer researchers can use this database to identify biological specimen banks or distribution systems where they can obtain specimens from patients diagnosed with breast cancer, individuals at high risk, and unaffected individuals. Specimens in these resources include breast tissue (normal and malignant), serum, urine, cells, and DNA.

The database is not intended as an exhaustive national listing of all facilities with access to breast tissue. It is limited to resources with the capability and desire to provide breast cancer specimens to the scientific community at large, generally with cost reimbursement or a requirement for scientific collaboration. Many holders of specimens, such as community hospitals and private pathology laboratories, are not able to make tissue available on request and these resources are not listed.

Cancer researchers who need additional help identifying sources of breast tissue specimens, or specimens from other tumor sites should contact the NCI Tissue Expediter.

Information about breast cancer clinical trials can be found on the NCI Cancer Trials website. The CancerNet contains a wealth of other information for cancer patients and the public, and also for health professionals.

disclaimer



Current Database Contents

RESOURCE	TISSUE TYPE(S)	OTHER DATA
<u>Dana Farber Cancer Institute</u> , Boston, MA	Frozen Cell lines	Demographic Clinical Other
<u>Duke University</u> , Durham, NC	Fresh Frozen	Demographic Clinical Outcome
<u>Georgetown University Medical Center and Lombardi Cancer Center and SPORE</u> , Washington, DC	Fresh Frozen Paraffin-embedded	Demographic Clinical Outcome
<u>National Cancer Institute of Canada - Manitoba Breast Tumor Bank</u> , Winnipeg, Manitoba, Canada	Frozen Paraffin-embedded	Demographic Clinical Outcome
<u>National Surgical Adjuvant Breast and Bowel Project (NSABP)</u>	Paraffin-embedded	Demographic Clinical Outcome
<u>NCI Cooperative Breast Cancer Tissue Resource (CBCTR)</u>	Paraffin-embedded	Demographic Clinical Outcome Other
<u>NCI Cooperative Human Tissue Network (CHTN)</u>	Fresh Frozen Paraffin-embedded	Demographic Clinical Outcome
<u>NCI Surveillance, Epidemiology, and End Results Program (SEER)</u>	N/A	Demographic Clinical Outcome
<u>New York University</u> , New York, NY	Frozen Paraffin-embedded	Demographic Clinical
<u>North Central Cancer Treatment Group Research Base at Mayo Clinic</u> , Rochester, MN	Paraffin-embedded	Demographic Clinical Outcome
<u>San Antonio SPORE - Familial Breast Cancer Registry and Gene Bank</u> , San Antonio, TX	Frozen Paraffin-embedded	Demographic Clinical Outcome
<u>San Antonio SPORE - National Breast Cancer Tissue Resource</u> , San Antonio, TX	Frozen	Demographic Clinical Outcome

<u>University of Michigan</u> , Ann Arbor, MI	Fresh Frozen Paraffin-embedded Cell lines	Demographic Clinical Outcome
<u>University of Pennsylvania</u> , Philadelphia, PA	Fresh Frozen Paraffin-embedded Cell lines	Demographic Clinical Outcome

[what's new](#) [database](#) [about](#) [suggest](#) [resources](#) [home](#)



Breast Cancer Specimen / Data Resource

Name:

Dana Farber Cancer Institute

Address:

44 Binney Street
Boston, MA 02115

Description:

The Dana Farber Cancer Institute has established a population-based biological specimen and risk factor data bank on 225 invasive breast cancer cases, who were aged 34 and under. One-third of these exceptionally young study subjects are estimated by statistical analysis to be carriers of a susceptibility gene. These 225 women have been ascertained over 3 years through the tumor incidence registries in Connecticut, Massachusetts, and 7 regions in California, with a total population of 21 million (8% of U.S. women). This work was supported by the U.S. Army Medical Research and Material Command under DAMD-17-94-J-4450.

CONTACT INFORMATION

Type(s) of Specimens Available:

Fresh blood specimens have been processed to produce:

- a lymphoblastoid cell line
- genomic DNA
- plasma
- viably frozen cells.

Number of Specimens Held:

225 cell lines and frozen blood specimens

Other Available Data:

- **Demographic:** Age, sex, race, ethnicity
- **Clinical:** Laterality (right, left, both breasts)
- **Other:** Age at diagnosis, medical history, family history, pregnancy and fertility, smoking, alcohol, prenatal

NOTE: All questionnaire data at this stage are unconfirmed.

Researcher Requirements for Obtaining Specimens/Data:

Breast cancer-related specimens/data are available or procured for distribution to outside researchers without restrictions related to collaboration. An outside advisory committee will

prioritize requests for specimens and risk factor data. All specimens sent to outside investigators will remain stripped of identifiers.

Procedures to Obtain Access to Specimens/Data:

Contact Dr. Frederick Li or Katie Nicholls for further information.

Costs to Researchers:

Approved researchers will be required to pay for the costs associated with generating and delivering all specimens, such as cell lines.

Limitations of Specimen Use:

No information that identifies an individual subject will be provided.

Consent:

Not applicable. Data provided will be non-identified.

Date of Last Update:

July 31, 1997

