

# SEARCHBreast: a new resource to facilitate sharing of resources resulting from *in vivo* experimentation in breast cancer and encourage use of 3D tissue models

Bethny Morrissey<sup>1</sup>, Karen Blyth<sup>2</sup>, Phil Carter<sup>3</sup>, Claude Chelala<sup>3</sup>, Ingunn Holen<sup>4</sup>, Louise Jones<sup>3</sup> and Valerie Speirs<sup>1</sup>.  
<sup>1</sup>Leeds Institute of Cancer and Pathology, University of Leeds, Leeds, UK. <sup>2</sup>Cancer Research UK Beatson Institute, Glasgow, UK. <sup>3</sup>Barts Cancer Institute, London, UK. <sup>4</sup>Academic Unit of Clinical Oncology, University of Sheffield, Sheffield, UK.

## What is SEARCHBreast?

Sharing Experimental Animal Resources; Coordinating Holdings in Breast Cancer

The SEARCHBreast initiative will:

- **Connect** breast cancer researchers by building a dynamic network
- Encourage **sharing** animal resources, knowledge, and ideas through the network and a dedicated website and database
- **Discover** more about breast cancer biology, increasing the quality of research

SEARCHBreast is addressing the 3Rs in breast cancer research

### Reduction • Replacement • Refinement



There is growing support amongst researchers, government, and the general community to consider the Replacement, Refinement, and Reduction (3Rs) of animals in research when designing or embarking on any *in vivo* experimentation.

## Reducing animals by sharing archived material



In cases where excess material has been archived, sharing these models to other researchers (hence preventing new models being created), will lead to fewer animals being used. SEARCHBreast has facilitated this process by bringing these materials to the public domain via a dedicated website and a virtual searchable database.

<https://searchbreast.org>

### Deposit Models

SEARCHBreast is a virtual resource, the material stays with the contributor. Deposit forms are comprehensive yet easy to populate.

**Genetically Modified (GEM) Model Submission**

Your name: Bethny Morrissey  
 Email: b.morrissey@leeds.ac.uk  
 Institute: University of Leeds  
 Model name: Big-Cre:Brc1<sup>fl</sup>p53<sup>+/+</sup>  
 Jar stock number: 012620  
 Description: Big-Cre: Brc1<sup>fl</sup> Tip53<sup>+/+</sup> mice that carry the Delta-32/knockdown Cre (B12-Cre) transgene are homozygous for floxed exons 22-24 of the breast cancer 1 (Brc1) allele, and are heterozygous for p53 tumour suppressor gene (TP53) deficiency. Expression of the  
 GEM# allele: Big-Cre: Brc1<sup>fl</sup>Tip53<sup>+/+</sup>  
 Common name: Big-Cre: Brc1<sup>fl</sup>p53<sup>+/+</sup>  
 Strain: FVB  
 Sex of animals: Female

**Develops mammary tumours**

ER: Positive  
 PR: Please select  
 HER2: Positive  
 Origin: Please select  
 CR1: Please select  
 CR2: Please select  
 p53: Positive  
 SMA: Please select  
 CK Other: Please describe if 'Other' selected

**Develops metastases**

Bone:  Peritoneum:

**Phenotypes**

**Develops primary tumours**

**Develops metastases**

**Your Models**

Name	Model Type	Model Name	Description	Select this model
SB_0049	Synthetic	Example 1	-	<input type="radio"/>
SB_0050	Xenograft	-	-	<input type="radio"/>
SB_0051	GEM	K14-Cre: Brc1 <sup>fl</sup> p53 <sup>+/+</sup>	K14-Cre recombinase mediated deletion of the Brc1 <sup>fl</sup> (exons 22-24) on a background of p53 heterozygous loss leads to mammary tumours of the adenocarcinoma (metastatic) carcinoma or malignant adenomyoepithelioma subtype.	<input type="radio"/>

## Search for models



You don't have to contribute models to request them, SEARCHBreast is for those who already use *in vivo* models and those who wish to do so. When searching for models to use for your research, general or detailed search terms can be entered, depending on your requirements.

Search all of our models with a quick word search    All model types

Or enter more details in the table and click **submit**.

**XENOGRAFT MODEL SUBMISSION**

Your name: SEARCHBreast  
 Email: b.morrissey@leeds.ac.uk  
 Institute: University of Leeds  
 Model name:  
 Strain: Other  
 Sex of animals: Female  
 Tumour/transplant site: Mammary fat pad  
 Cell line used: MDA-MB-436

**Material available:**

Tumour	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Mammary fat pad (tumour)	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Mammary fat pad (normal)	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Lung	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Lymph node	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Heart	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Spleen	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Liver	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Long bones	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Skull	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Vertebrae	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Serum	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Circulating DNA	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Other	<input type="checkbox"/>	Storage: Frozen <input type="checkbox"/> FFPE <input type="checkbox"/> Other (DNA, RNA, protein) <input type="checkbox"/>
Any	<input type="checkbox"/>	

Once the search is complete, a summary table of the matching available material will appear. Click on the SEARCHBreast ID to find more information about a model.

**Summary of search results**

#	SEARCHBreast ID	Model Type	Strain	Site	Cell Line	Model Name
1	SB_0001 (version 2)	Xenograft	BALB/c-Nude	Intracardiac	-	MDA-MB-231 Bone Metastasis Model
2	SB_0025 (version 1)	Xenograft	MF1 nude	Subcutaneous - flank	MDA-MB-436	-
3	SB_0026 (version 1)	Xenograft	CD1-Nude	Subcutaneous - flank	MDA-MB-436	-
4	SB_0027 (version 1)	Xenograft	CD1-Nude	Intra-tibial	MDA-MB-436	-

SEARCHBreast Model ID: SB\_0027 (version 1)

Model Submission Date: 2015-01-13

Model Type: Xenograft

Model Name: -

Strain: CD1-Nude

Sex: Female

Site: Intra-tibial

Cell Line: MDA-MB-436

Material Available: Tumour, Long bones

Material Storage: FFPE, FFPE

Therapy Available: Yes

Analyses: Control (0 hrs PBS), 100ug/kg doxorubicin acid, 2mg/kg doxorubicin or 100ug/kg zoledronic acid followed 24h later by 2mg/kg doxorubicin. All treatments were given once per week for 6 weeks.

## Connect



Members can request more information about models of interest by sending SEARCHBreast an email. SEARCHBreast will then alert the owner of the material of the request who will then contact the contributor. SEARCHBreast to be acknowledged for any collaborations formed in any future publications.

We are here to help!

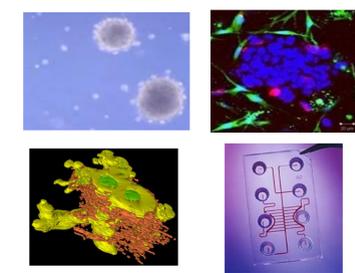


[help@searchbreast.org](mailto:help@searchbreast.org)

## Can't find a model?

## Replacing animals by using humanised breast cancer tissue

SEARCHBreast is committed to promoting the use of humanised breast tissue models as replacement alternatives to animal experiments. SEARCHBreast held a workshop entitled '3D modelling of breast cancer' where many of the perceived barriers in working with human tissue were addressed. These included sources of where to obtain, and practical advice and guidance for handling human tissue.



Cutting-edge applications on what can be achieved using human tissue were also showcased to inspire the many early career researchers at this meeting for use in their future research.

## Refinement of animal research

The website also provides on-line resources that promote emerging refinement technologies. SEARCHBreast encourage all members to share ideas on how improvements to animal welfare could be achieved.

SEARCHBreast also encourage sharing experimental expertise, potentially helping to reduce experimental redundancy, prioritising new relevant research.

## Join SEARCHBreast today!

SEARCHBreast is connecting breast cancer researchers with expertise spanning *in vivo*, *in vitro* and *in silico* models of breast cancer. This multilateral approach will enable a greater understanding of breast cancer biology whilst providing opportunities for new collaborations.

SEARCHBreast members have access to the database, and are invited to events, workshops, and more!

<https://searchbreast.org> [@search\\_breast](https://twitter.com/search_breast) [help@searchbreast.org](mailto:help@searchbreast.org)

A collaboration across 4 centres: UNIVERSITY OF LEEDS, The University of Sheffield, Barts Cancer Institute, CANCER RESEARCH UK, BEATSON INSTITUTE

With funding from: NC 3Rs National Centre for the Replacement Refinement & Reduction of Animals in Research

Contributors can enter as much information as they like and edit their models at any time.