

# K4KK: the final paddle

In 1996, five-year-old Rebecca Glenister was diagnosed with acute lymphoblastic leukaemia, a type of leukemia affecting 250 children in Australia each year. This devastating news marked the start of a heartbreaking journey of chemotherapy, daily treatment and hospital visits. Rebecca's father, Bob Glenister, refused to accept there was nothing else he could do and, in order to come to terms with his daughter's illness, Bob successfully completed a solo sea kayak paddle from Sydney Harbour to Surfers Paradise in Queensland. This was a gruelling

1,000km journey on the open seas that took 21 days to complete. In the process, Bob raised funds for research into childhood cancer and so Kayaking for Kemo Kids was born. Today Rebecca is well and is studying Nursing at university. After 12 years of adventure fundraising, including five Sydney to Brisbane Sea Kayak Challenges, K4KK had their final paddle in February 2010. Bob and his team of kayakers started at Hat Head, north of Port Macquarie, and finished in Sydney Harbour. The final paddle was solely dedicated to the Children's Cancer Research Unit and the Tumour Bank.

The K4KK final paddle was celebrated by a thank you lunch, held at the Children's Hospital at Westmead, where a cheque for \$38,000 was presented. This brings the total amount of funds raised by K4KK to an amazing \$496,000. The K4KK team explained how words cannot describe the amazing journey they have had, the people they have met and the highly valued support they have received. They are thrilled to have made a huge difference to children's cancer research. Bob Glenister would like to sincerely thank everyone who has supported K4KK over the years. Please continue to support K4KK by visiting their website at [www.k4kk.com.au](http://www.k4kk.com.au).

Kayaking 4 Kemo Kids 1996 - 2010



the children's hospital at Westmead

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 or you can email us on [TumourB@chw.edu.au](mailto:TumourB@chw.edu.au)

the children's hospital at Westmead

# the tumour bank

Newsletter Autumn 2010 Edition

## Interest rates are increasing!



**Dr Albert Chetcuti**  
 Tumour Bank Project Officer

First of all I'd like to introduce myself. I am Dr Albert Chetcuti and I have been working at The Children's Hospital at Westmead's Tumour Bank for two years. I play an important role in managing the day-to-day activities of the Tumour Bank. This may sound simple, but it's a busy role I enjoy immensely. With the start of another year, it's time to reflect back on a successful year for the Tumour Bank, both over the last 12 months and over the last 12 years.

The Children's Hospital at Westmead's Tumour Bank has enjoyed a successful period of growth. We have continued to achieve our goals in 2009 by existing as a valuable resource for scientists around the world researching childhood cancers. Interest in the Tumour Bank has been fantastic this year. We have all been very busy supporting national and international researchers that have utilised the facilities of the Tumour Bank. In 2009, we have supported seven research projects, involving a large number of childhood cancers.

In many ways, the Tumour Bank is very similar to the bank you find in your local suburb. Through the generosity of patients and their parents, the Tumour Bank receives some 500 samples each year. We like to think of these as deposits, the same way you put money into your bank account. We carefully store these samples so that some day these may be used to study cancer.

The Tumour Bank receives many applications each year for samples from leading scientists, both here in Australia and around the world. We carefully scrutinise every application and work out how best we can help in their research. We like to think of this as withdrawals, but it's a little bit different than using an ATM. Like with any bank, we also have 'interest'. But our interest is a little different from a normal bank, it increases each year because we collect more samples that enable us, and many scientists around the world, to make discoveries in cancer research.

Like any other bank, we just don't stand alone. The Children's Hospital at Westmead's Tumour Bank is a member of a large number of other Biobanks around Australasia. As a group, we collectively campaign the government and funding bodies to continue to financially support important Biobanks, such as the Tumour Bank.

As always, the Tumour Bank has been busy supporting research into childhood cancers. Professor Eileen McLaughlin from the University of Newcastle has sent us a report on her investigations into a relatively rare disease, testicular cancer. Professor McLaughlin's research team have discovered a specific chemical messenger called a 'chemokine', that is involved in testicular cancer. Please read her story on page two of this newsletter.



Kids! Bring us your artwork and it may appear in the next edition of our newsletter.

The continued efforts of the Tumour Bank have been generously supported by many foundations and organisations over the years. One such organisation has been Kayaking for Kemo Kids (K4KK), co-ordinated by Bob Glenister. On the back page of this newsletter, we detail the efforts of Bob and his group of eager kayakers who are keen to raise funds for children with cancer. I would like to personally thank all those who have supported the Tumour Bank over the years and encourage you to continue to support us into the future.

Dr Albert Chetcuti  
 Tumour Bank Project Officer

## Finding out about the causes of testicular cancer

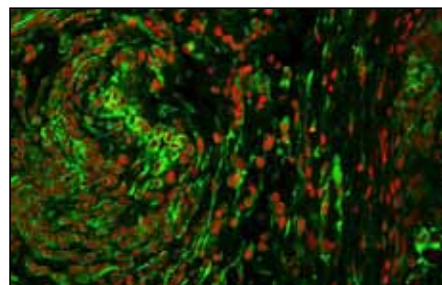


L to R: Ilana Bernstein, Dr Eileen McLaughlin, Andrew Reid, Skye McIver and Belinda Nixon

Testicular cancer is a cancer that develops in a man's testicle. Most testicular cancers start in the cells that make sperm, called germ cells. Testicular cancer is a relatively rare type of cancer but it is the second most common cancer in young men. It has long been known that having an undescended testicle or a father or brother with testicular cancer increases your risk of getting testicular cancer. However, disturbingly, the number of men diagnosed with testicular cancer in NSW has risen by 34% in the last ten years. The reasons behind this dramatic increase are a mystery.

In the human testicle, large numbers of sperm are continuously produced throughout adult life. This process, known as spermatogenesis, is dependent on the establishment in foetal development of a population of germline stem cells, from which the sperm are produced. Little is known about how these stem cells are created or how the special niche in which they reside in the testicle is defined.

Initially our research focussed on gaining an understanding of how these germline stem cells functioned in a mouse model system. Recent discoveries from our laboratory have found that a chemical messenger,

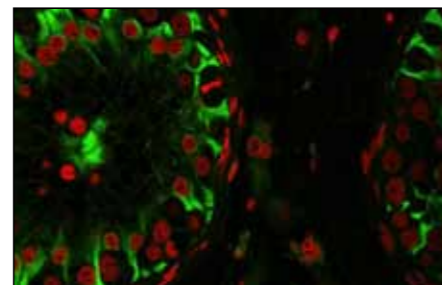


Expression of chemokine CXCL 12 in normal human testes (green)

called a chemokine, and its receptor are involved. In the testicle, this chemokine keeps the stem cells alive and guides them to their proper home. We think that disrupting this process leads to stem cells getting 'lost and confused' in the testicle and results in these cells failing to develop normally. Around the time of puberty, the 'confused' cells then react to the body's normal hormones and start growing into testicular cancers.

On discovering the possibility that this chemokine was involved in germline stem cell development in the human testicle, we contacted The Children's Hospital at Westmead's Tumour Bank and were very grateful to receive a number of samples from testicular cancer patients. We were able to confirm the presence of this chemokine in normal human testicles and increased expression of this chemical messenger in testicular tumour samples, indicating that this signalling pathway is abnormal in these cancers.

Our work now is focussing on further investigating the mechanism by which this chemokine directs tumour development and how inhibitors of the chemokine might be used to stop testicular cancers spreading.



Abnormal expression of chemokine CXCL 12 in testicular tumour (green)

# all about the tumour bank

The long-term goal of research into childhood malignancies is to reduce the incidence of cancer and to improve the outlook of children suffering with this disease. It is through research that we will gain the knowledge about cancer that will eventually lead to new approaches in therapy. However, such research is dependent upon the availability of cancer specimens for the scientists to study.

### The Tumour Bank

The Children's Hospital at Westmead's Tumour Bank is a collection of cancer specimens, donated by patients and obtained through the normal course of treatment. These samples are placed in long-term storage and made available to research scientists around the world for future investigations into the improvement in the diagnosis and treatment of children with cancer.

Since its inception in 1998, the Tumour Bank has stored over 24,000 samples from 2300 patients, representing 50 different types of cancers.

The aim of the Tumour Bank is to encourage and facilitate research to improve prevention, diagnosis and treatment of childhood cancer. By providing

samples to research groups within the Hospital, around Australia as well as throughout the world, the Tumour Bank will prove to be a valuable resource as it helps us to:

- understand the molecular mechanisms which lead to cancers in children,
- develop tests that enable screening for those children at an increased risk of cancer,
- aid the establishment of new molecular-based diagnostic tests, which will assist in the selection of the most appropriate treatments
- identify targets for potential new cancer remedies.

The Tumour Bank has already provided tumour specimens to research groups around Australia. Findings from some of these investigations will be briefly described in each edition of this newsletter.

Many people and departments throughout the Hospital play a role in the activities of the Tumour Bank. In particular, the Tumour Bank is supported by:

- Children's Cancer Research Unit
- The Oncology Department
- Histopathology and Haematology Departments

- Medical Records Department
- Computer Services
- Public Relations
- Fundraising

### Consent

Many patients and parents support the Tumour Bank through the donation of tumour tissue, blood and bone marrow samples. These samples are removed from patients in the operating theatre or in the clinic during the normal course of treatment.

A consent form tells patients and parents about the Tumour Bank. This form, once signed, gives permission for samples to be stored in the Tumour Bank and later given to scientists studying childhood cancers.

**The decision to give us permission to collect samples from your child for the purpose of research is voluntary.**

If a patient or parent decides not to give permission, or to withdraw it at a later time, the child's care will not be affected in any way.

### Collection and Storage

The Tumour Bank receives resected tumours and biopsies, as well as blood, bone marrow and cerebral spinal fluid specimens that have been removed for diagnostic purposes from patients in the operating theatre or in the clinics.

Once the diagnostic process is complete, the residual tissue specimens are transferred to special low-temperature cryogenic vials and immediately snap-frozen in liquid nitrogen. This freezes the samples very quickly and preserves proteins and genetic material within the sample. Once frozen, the samples are placed in numbered boxes and stored in a freezer at -80°C.



In some circumstances, specimens stored within other Hospital departments may be requested by the Tumour Bank to further support research applications.

### Database

Once stored, each sample is recorded on the Tumour Bank database. Information recorded includes:

- Age of the patient and age at diagnosis
- History of the cancer
- Type of cancer
- Results of pathology tests
- Type of treatment received

### Privacy

When the samples are provided for research, **the child's name will not appear on the sample.** At no time will any personal contact details (address, phone number) be issued with the specimens.

**The child and family will therefore remain entirely anonymous** to the researchers who receive any Tumour Bank specimen.

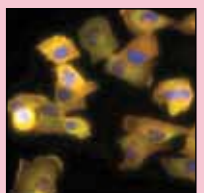
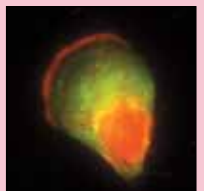
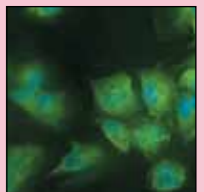
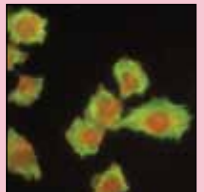
However, if the findings of the research could help us with a child's treatment, the coding on the sample will allow the Tumour Bank staff to forward the results to the doctor who is caring for the child.

### More Information

Our website address is [www.chw.edu.au/tumourbank](http://www.chw.edu.au/tumourbank) or you can email us on [TumourB@chw.edu.au](mailto:TumourB@chw.edu.au)

Cancer cells – the green colour indicates a protein associated with tumour development.

Photos courtesy of Julie Hughes



Clinical Research Associate, Amanda Rush, discussing consent with a parent.