

Kayaking for Kemo kids

Mariners support kayakers cause By Bob Foster

Through a variety of activities, a group of dedicated and hardworking people have raised a fabulous amount of money and donated the proceeds to Kayaking for Kemo Kids. The wonderful efforts of Jamie Currey, Garry Kiely, Harry Parsons, and Jan and Bob Foster have raised **\$13,579** since last Christmas, donating it to Kyaking for Kemo Kids, through Bob Glenister.

This is their story...

"Bob Glenister was first introduced to Bob Foster through Derek Morgan when Derek was a radio operator with Coast Guard Sydney and Bob was the Flotilla Commander. Bob assisted in organising the Coast Guard Bases along the NSW coast to keep an eye out for Bob Glenister and his paddlers as they braved the elements of the sea on their way along the coast to Brisbane, securing donations for the Tumour Bank.

When Bob Foster stood down as the Flotilla Commander Harry Parsons took the helm and continued that support. When Coast Guard no

longer required their services Jamie, Garry, Harry, Jan and Bob continued their fund raising efforts — the proceeds benefiting Bob Glenister's effort with Kyaking for Kemo Kids. Aided by the generous support of the Five Dock Hotel and its patrons, Jamie and Garry conduct a weekly raffle with the proceeds going to Kyaking for Kemo Kids. With the assistance of the management of the Birkenhead Marina, Garry, Harry and Bob splice the mooring lines for the

occupants of the Marina and contribute the proceeds to Kyaking for Kemo Kids. When boat owners are in need of a Marine radio certificate, Jan, Harry and Bob conduct Government approved courses to legally qualify them to operate marine radios. Again the proceeds benefit Kyaking for Kemo Kids. Bob Foster finished by stating, "we are fully committed to continue our support for these wonderful children".



Bob Foster, Garry Kiely and Harry Parsons.

'Every cell is sacred' (continued)

biology of childhood cancer.

The Tumour Bank at The Children's Hospital at Westmead would not have been able to come this far without the support of Kayaking for Kemo Kids. This small but eager band of sea kayakers, lead by Bob Glenister, have raised close to \$400,000 for the Tumour Bank. During Bob's travels around the

coastal areas of NSW he has met with many folk dedicated to marine activities. After hearing Bob's story they have become dedicated supporters of Kayaking for Kemo Kids. One such supporter, Bob Foster, tells of how he and his colleagues from the NSW Coast Guard continue to get behind the work of Kayaking for Kemo Kids.

When you visit The Children's Hospital at Westmead please look out for new editions of the newsletter so we can keep you up to date with what we are learning about cancer and please do not hesitate to contact us with any enquiry. (email: TumourB@chw.edu.au)

Dr Dan Catchpoole
Head of Tumour Bank.

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'Every cell is sacred'

Dr Dan Catchpoole
Head of Tumour Bank

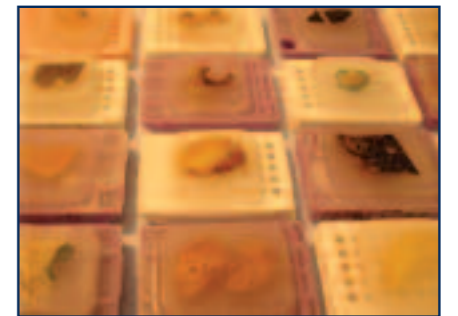
"How much tissue do you need to do experiments?" Those who watch television programs such as 'CSI' or 'Silent Witness' will hear of seemingly mystical techniques such as 'PCR', 'DNA finger printing' and 'polymorphisms' being performed on the smallest smear of blood on the end of a cotton wool bud. Are these concepts in the realms of science fiction or are they true depictions of what scientists do everyday?

On the second page of the Tumour Bank Newsletter, you will read about a research project conducted by Dr Steven Alexander and his team here at The Children's Hospital at Westmead. They report the discovery of a novel alteration in the genetic code of a gene known to be associated with a cancer of the kidney called a Wilms Tumour. This information will shed light on how defects in this gene may lead to altered cell growth and development

in the kidney which eventually leads to cancer. For this study to happen, the Tumour Bank was only able to supply Dr Alexander's team some slices of the tumour that were 1/100th of a millimeter thick and a few millimeters in dimension. Despite this being such a miniscule piece of tissue, they were able to extract enough genetic material, called DNA, to perform their experiments.

Recent technological advances have allowed us to work with even smaller amounts of sample. The Tumour Bank has recently begun constructing 'tissue microarrays'; blocks of paraffin wax in which small cores less than 1mm in diameter are placed in a grid format. This allows scientists to simultaneously examine hundred of tissue 'spots' in one experiment and to screen large collections of tissue samples to rapidly gain insights into the tumours they are studying.

Another technique the Tumour Bank is working with uses a specialised microscope which allows us to collect individual cells from small slices or 'sections' of tissue. A Laser-Capture Microdissection (LCM) microscope has a laser built into the microscope's optics which is used to cut



Paraffin-embedded tissue blocks.

around cells you wish to collect. The cells are 'captured' and placed in a small test tube for further experiments. So whilst this sounds very much like science fiction, these techniques are being incorporated into the daily routine of the Tumour Bank and will allow us to provide tissue to more researchers which will then translate to more information and knowledge about the underlying (Please turn to page 4 to read more...)



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



Tissue microarrays.

New mutation found in Kidney Tumour gene



The Kidney research team: Jeff Fletcher, Emma McCahon, Min Hu and Stephen Alexander.

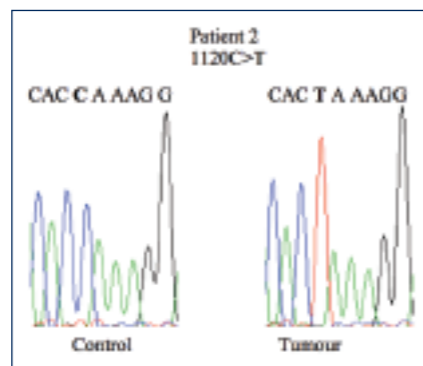
The Centre for Kidney Research in combination with Dr Emma McCahon has been analysing children with tumours which arise in both kidneys called 'bilateral Wilms' tumour'. These tumours have been collected by the Tumour Bank. Wilms tumour is one of the most common solid tumours in children.

A gene called 'WT1' has been associated with Wilms tumours, and it is known that variations in the genetic code for WT1 called 'mutations' prevent this gene from working properly. However, in some types of Wilms tumour, mutations in this gene are very rare. We believe that children with bilateral tumours may have an increased incidence of mutations in WT1 responsible for their malignancy. Dr Min Hu has identified 8 children with bilateral Wilms tumour. The Tumour Bank was able to provide thin slices or 'sections' of tumour tissue for her to examine. Using a technique called 'polymerase chain reaction' she was able to isolate the specific region of genetic code for the gene and has identified the part of the WT-1 gene

most frequently mutated. We find that 3 of the 8 children have mutations of WT-1 in both their tumour and in their peripheral blood that lead to the expression of a shortened WT-1 protein. This may have implications for how Wilms' tumour develops.

Without the Tumour Bank identification of such a restricted group of children to study would have been impossible. This work has recently been presented at an international tumour meeting in Seattle in the USA.

Further work on the function of these mutations is ongoing.



Example of a sequencing plot showing the change in the DNA (indicated by the red peak) in the Wilms tumour compared to a normal sample.

all about the tumour bank

The long-term goal of research into childhood malignancies is to reduce the incidents 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 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 20,000 samples from 2000 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 have a role in the activities of the Tumour Bank. In particular, the Tumour Bank is supported by...

- The Oncology Research Unit.
- The Oncology Department.
- Histopathology and Haematology Departments.
- Medical Records Department



Tumour Bank Co-ordinator, Mark Wheeler, discussing Tumour Bank Consent with teenager Marcus, and his Mum.

- 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.

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

If you decide not to give your permission, or to withdraw it at a later time, your 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

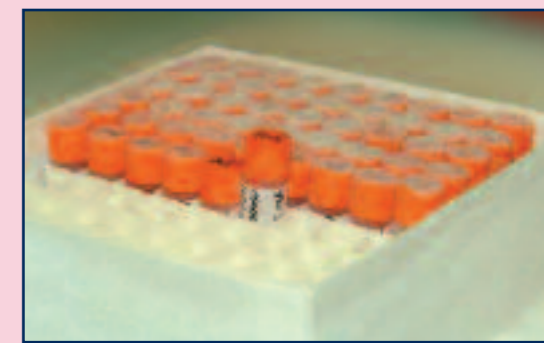
When the samples are provided for research, **your child's name will not appear on the sample.** At no time will any personal contact details (address, phone number) be issued with the specimens. **You and your child will therefore remain entirely anonymous** to the researchers who receive any Tumour Bank specimen.

However, if the findings of the research could help us with your 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 your child.

More Information!

Our website address is www.chw.edu.au/tumourbank or you can email us on TumourB@chw.edu.au

Thank you for your support!



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

Photos courtesy of Julie Hughes

