

The Children's Hospital at Westmead Tumour Bank and the Biospecimens Research Group (the research arm of the Tumour Bank), receives generous donations from a number of fantastic charities. Three such organisations have recently been publicly recognised and have received awards for their wonderful efforts.

Miles To Go



Allen Greenhalgh and Julie Sheridan lost their son, Miles, to rhabdomyosarcoma cancer 3 years ago. While there is a significant amount of research being conducted into the more common childhood cancers, there is very little research into rare tumours such as rhabdomyosarcoma. The family

decided to do something about this and created the 'Miles to Go' gala dinner to honour their son Miles and to fund research into the cancer which took their son. The name also signifies the distance we still have to go to find a cure for childhood cancer. Allen & Julie put together a team of committed people and set out to raise \$50,000 per year for 3 years to support the research. They worked tirelessly on the event and in October 2010 they held a wonderful Gala Dinner which exceeded their expectations and raised \$63,000. In response to receiving this generous

donation, Dr Daniel Catchpoole, Head of The Tumour Bank at The Children's Hospital at Westmead said, "The research currently being conducted with these funds is working on our approach to specifically drill into data derived from rhabdomyosarcoma tumours, with the goal of learning new things about this disease."



Kayaking 4 Kemo Kids



an initiative of Kayaking 4 Kemo Kids

Well just when you thought the Kayaking 4 Kemo Kids team was done... Bob and the team just can't

help themselves! In December 2010 a decision was made to discontinue Kayaking 4 Kemo Kids, but due to the wide range of ongoing support and active fundraising still going on, Active 4 Kemo Kids has been ACTIVATED.

This was set up many years ago and now the right time has come to carry on the great work of kayaking 4 Kemo Kids supporters through Active 4 Kemo Kids. The non-profit volunteer

charitable organisation is now set up as a charitable institution and we aim to become more involved in a wide range of cancer support and research areas.

You can visit Bob and the Team through the brand new website www.a4kk.com. Bob wishes to thank everyone who has supported this transformation, the legacy continues.

Carols In The Caves

The 19th Annual Carols in the Caves took place on December 11th 2010 in the spectacular Grand Archway at Jenolan Caves. The total audience numbered 900 patrons. The concert is Jenolan's flagship event and raises much needed funds for cancer research at the Children's Hospital at Westmead. The evening show kicked off with a charity auction.

The 2010 event was hosted by Channel 9's Peter Overton with special guest Jessica Rowe who

read a beautiful Christmas story.

Santa & his elf made a special visit bringing with them Bandaged Bear who was keen to be part of the Christmas Spirit.

Producer and Director of the event, Domino Houlbrook-Cove, said "Carols in the Caves would not be possible without generous donations from local businesses, community & staff volunteers as well as a very talented cast & crew".

All proceeds from the event have been presented to the Hospital.



the children's hospital at Westmead

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the children's hospital at Westmead

the tumour bank

Newsletter Winter 2011 Edition



Wheels in motion

Dr Albert Chetcuti
Tumour Bank Project Officer

When I'm not busy at the hospital keeping the Tumour Bank working like a well-oiled bicycle, I'm often enjoying one of my passions in life, and that's cycling. I'm always cycling here, cycling there, cycling to work, cycling to the shops, fitness cycling, mountain biking, cycle touring, whatever. The more time I spend cycling the better. Some of you may be thinking, all this exercise is just too much. But, cycling is a great way to relax, enjoy the outdoors and keep fit as well.

A few times a year, I get the opportunity to combine my passion for cycling and help raise money for medical research. I can't think of a better way to enjoy the great outdoors than to participate in a cycling event with thousands of like-minded people and most importantly raise money for medical research. Each year there are many events that raise valuable funding for medical research. One of these events is the Gear Up Girl ride organised by Bicycle NSW. This is a big event that between 2008-2010 raised money for the Oncology Children's Foundation. The Oncology Children's Foundation has been a strong supporter of the Tumour Bank and The Children's Hospital at Westmead for many years. There are many more events, like the Tour de

Hills, Loop the Lake, Gong Ride, and so on. All of these are fun events that aim to get the community out on their bicycles and help support medical research. You too can support these events by participating and personally raising money for medical research. Even if cycling is not your thing, you can help by volunteering at any of these events. I have volunteered for several events myself and it's a great way to show your support.

As a scientist working in medical research for many years, I can testify that the money raised from these events plays an important part in helping us continue our research efforts. The money raised helps us perform laboratory experiments and purchase equipment that enables us to discover what causes many diseases like cancer, and potentially develop new treatments for the future. With your help and continued support, the money raised at such events can help push back the boundaries of science and continue to improve the survival and treatment of children with cancer both here in Australia and globally.

As always, the Tumour Bank has been busy supporting research into childhood cancers. Dr Linda Bendall

from the Westmead Millennium Institute has sent us a report on her research into Acute Lymphoblastic Leukaemia. Dr Bendall's research team has discovered an important gene involved in the way leukaemia cells grow. Please read Linda's story on page two of this newsletter.

The continued efforts of the Tumour Bank and the hospital have been generously supported by many organisations. These organisations include Miles To Go, Kayaking 4 Kemo Kids, and Carols In The Caves. On the back page of this newsletter, we detail the support we have received from these three organisations and I would like to thank them for their continued support.

Pics by Kemo Kids



by Dakota, age 7

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

Searching for better treatment of acute lymphoblastic leukaemia



REPORT BY DR LINDA BENDALL
WESTMEAD MILLENNIUM INSTITUTE

Acute lymphoblastic leukaemia (ALL) is the most common childhood malignancy. It represents approximately a quarter of all childhood cancers. Although the treatment of childhood ALL is one of the success stories of modern oncology, current treatment is not without its problems. One of the major difficulties with treatment is that current chemotherapy drugs we use, target both cancer cells and healthy cells. Although the majority of ALL patients are cured after treatment has completed, approximately 25% of children with ALL experience what we call 'relapse', that is when the cancer comes back. We find that treating children that have 'relapsed' with ALL is much more difficult and survival of these patients is often worse than children with other types of non-leukaemia cancers. As such, we need to improve the effectiveness of the chemotherapy drugs we use to treat ALL.

The Leukaemia Cell Biology laboratory at the Westmead Millennium Institute is focused on discovering new therapeutic drugs by better understanding how leukaemia cancer cells develop and grow. It has been well established from previous research that leukaemia cancer cells require other types of cells to support them in the bone marrow environment. In our laboratory, we use cancer cells grown in test tubes to help us further our knowledge about how leukaemia cancer cells interact with other cells in the bone marrow. To perform our research, we received samples from The Children's Hospital at Westmead Tumour Bank and we are very grateful.

Our research so far has discovered a gene called CXCL12 that helps leukaemia cancer cells keep in close contact with other cells in the bone marrow. Our results have shown that this gene helps leukaemia cancer cells to grow even in the presence of chemotherapy drugs that are trying to stop these cancer cells. We have found that by treating leukaemia cancer cells with a special drug that acts against the CXCL12 gene, we can stop the interaction between the cancer cells and the normal cells in the bone marrow. Our laboratory experiments have shown that combining the special drug with other chemotherapy drugs can slow leukaemia cancer cell growth and also improve the effectiveness of chemotherapy treatment. In our recent work, we have also discovered mechanisms in these leukaemia cancer cells by which the CXCL12 gene activates processes within the cancer cells to cause these cells to grow and survive.

The discoveries we have made so far has allowed us to find a drug that can specifically block the actions of the CXCL12 gene. Our laboratory experiments have showed that this drug was highly effective and slowed the growth of leukaemia cancer cells. This drug is now being tested in a clinical trial of patients with relapsed ALL, although at this stage the trial is focused on adult patients. If successful it will also be applied to the treatment of children with this disease. This drug has fewer side effects than current chemotherapy and may reduce the amount of toxic agents used in patients.

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 and 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.

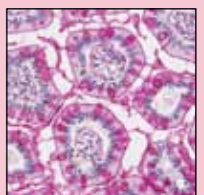
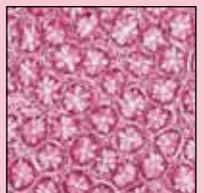
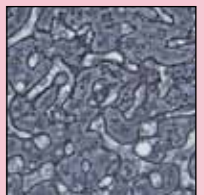
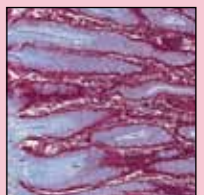
However, if the findings of the research could help us with a child's treatment, the coding on the sample will allow the Tumour Bank staff to forward the results to the doctor who is caring for the child.

More Information

Our website address is <http://tumourbank.chw.edu.au> or you can email us on TumourB@chw.edu.au

Histological stains used to demonstrate anatomical structures on a light microscope

Photos by Nicole Mackie and Albert Chetcuti



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