

## Media Release

13 February, 2006

### A MAL-adjusted protein may save thousands of lives

Scientists have discovered a single protein could mean the end of people dying from serious bacterial infections such as septic shock.

A study published in the February edition of *Nature Immunology* has identified a protein in the body that can stop an injury as simple as a cut finger developing into potentially fatal septic shock.

Monash Institute of Medical Research (MIMR) led the collaborative study that discovered how the protein, SOCS1, plays in removing a key protein in the immune system called Mal; a critical process in the body's defence system.

"Normally, when a bacterial infection develops, Mal triggers a domino-like effect that alerts the immune system to fight the infection. Once the danger has passed, SOCS1 tells Mal to stop," said MIMR post-doctoral scientist and lead author, Dr Ashley Mansell. "But when people suffer from septic shock, this message doesn't get through to Mal, so it keeps triggering a strong immune response. "

"An out-of-control immune response is a bit like Russell Crowe in a hotel room. Because Mal doesn't receive the message from SOCS1, the immune system acts with too much power and strength, blindly fighting every cell – both good and bad - that comes into its path," he said.

"We have discovered how we can manipulate SOCS1 to turn off the immune system by destroying Mal. This slows the immune system and dramatically reduces the risk of septic shock."

Septic shock is one of the world's hidden killers. More than 1400 people worldwide die from septic shock each day; more than prostate, breast and colon cancer combined.

"The great thing about this discovery is that this will only affect bacterial infections. Removing Mal in this way won't upset any of the body's immune responses to other infections such as viruses," Dr Mansell said.

Professor Paul Hertzog, Director of MIMR's Centre for Functional Genomics and Human Disease, said Dr Mansell's discovery has exciting clinical implications. "Although it is early days, there is definitely potential for this exciting discovery to be translated into therapies for septic shock victims," he said.

Dr Mansell's discovery is MIMR's second SOCS1-related discovery in as many months. In January, Dr Jennifer Fenner was published in *Nature Immunology* for her SOCS1 research.

"It's great to see our up-and-coming scientists having such a big impact on medical research. It's an inspiration for some of our younger scientists to see what they too could achieve in the not-so-distant future," said Professor Hertzog.

Research collaborators are the Monash Institute of Medical Research, the Walter and Eliza Hall Institute for Medical Research (Melbourne) and Trinity College, Ireland.

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**Interview / photo opportunity:** To arrange an interview or photo opportunity with Dr Mansell and Professor Hertzog, contact Julie Jacobs, Public Relations Manager: 9594 7109 or 0408 135 256.