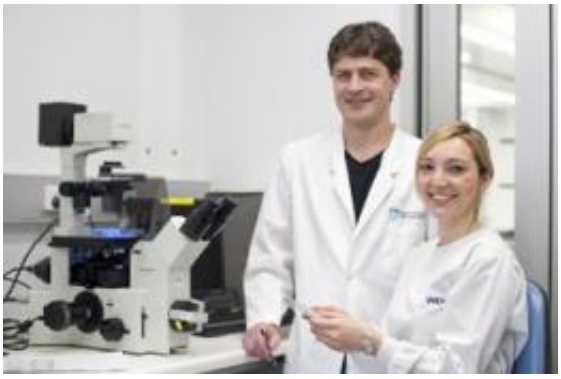
# New survival factor for immune cells identified

June 11 2012



Ms Eleonora Ottina and Dr Marco Herold have identified a survival factor for immune cells

(Medical Xpress) -- An international team of researchers has discovered that many of the body's infection-fighting immune cells require a cell survival protein, called A1, to develop and function. Their finding could lead to a better understanding of conditions including leukaemia, allergy and autoimmunity.

The team discovered that without A1, immune cells called lymphocytes and granulocytes could not develop, or could not respond appropriately to infectious stimuli.

A1 is part of the Bcl-2 protein family, which controls the survival of cells. The research team developed a method of depleting A1 from

immune cells, allowing them to study the development and function of immune cells lacking A1. The findings were published online last month in the journal Blood.

The research was jointly led by Dr. Marco Herold, from the Walter and Eliza Hall Institute's Molecular Genetics of Cancer division, and Dr. Andreas Villunger of Innsbruck Medical University, Austria, a former postdoctoral researcher at the institute. Dr. Herold, who began the research while at the University of Wuerzburg, Germany, said the discovery had surprised many scientists working in the area. "For more than a decade, we have known that cell survival proteins such as Bcl-2 are important for immune cell development and function," he said. "A1 proved more difficult to work with than other, closely related, proteins so many researchers ignored it. Our work has shown that A1 has many important roles in the immune system."

Ms. Eleonora Ottina, a student visiting the institute from the Molecular Cell Biology and Oncology post-graduate program at Innsbruck Medical University, said the discovery had opened the door to several new fields of research into human disease. "It is well known that conditions including leukaemia, allergy, and autoimmune conditions, such as lupus, can be caused by the survival of defective or unwanted immune cells, which should normally die," she said.

"Our research has shown that A1 is important for immune cell development and survival, and has given us the tools to deplete cells of A1 protein. We are now working to determine whether the presence of A1 in cells is necessary for the development of leukaemia, autoimmunity or allergy. If it is, depleting or functionally blocking A1 could be a new treatment for these diseases."

Provided by Walter and Eliza Hall Institute of Medical Research