Birmingham scientists aim to create 'assassin' cells to target blood cancer

Posted on Thursday 12th July 2012

Researchers at the University of Birmingham are to harness cells from the immune system and genetically engineer them to create ‘assassin’ cells that target and kill myeloma cancer cells.

Dr Gavin Bendle has been awarded the prestigious Bennett Fellowship grant of £725,000 by the blood cancer charity Leukaemia & Lymphoma Research to set up a new research team at the university in July next year. The team will work on modifying cells from the immune system, known as T cells, and direct them to eradicate myeloma cells.

The challenge is to engineer ‘assassin’ cells that attack myeloma cells, whilst stopping them from also attacking healthy cells. Dr Bendle and his team aim to fine-tune the process so that it can be taken forward into clinical trials.

Although myeloma treatment has improved dramatically in recent years, it unfortunately remains incurable. The team will add DNA to myeloma patients’ T cells, re-programming them to specifically target myeloma cells. Recent clinical trials of these ‘assassin’ cells have been successful in reducing skin cancer with few side effects.

Dr Bendle, of the School of Cancer Sciences, said: “If successful, our genetically engineered T cells will hopefully give rise to a better prognosis for those diagnosed with multiple myeloma – and later even more blood cancer types.”

Self-defensive ‘factors’ released by myeloma cells act as camouflage for the cancer cells, hindering the ability of the body’s immune cells from attacking them. The team will attempt to genetically engineer T cells to also become resistant to these factors.

Professor Chris Bunce, Research Director of Leukaemia & Lymphoma Research, said: “This research is exciting and potentially ground-breaking within the study and treatment of blood cancers.”

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For further information, please contact Jenni Ameghino, University of Birmingham Press Office, 0121 415 8134 or 07768924156; or Emily Head, Leukaemia & Lymphoma Research Press Office, 020 7269 9019, press mobile 07824 375880.

Notes to editors

* **Leukaemia & Lymphoma Research** is dedicated to saving the lives of blood cancer patients through the promotion and assistance of research into causes, diagnosis and treatment. We are committed to advancing the interests of patients and increasing public understanding of blood cancers.

Around 30,000 people of all ages, from children and teenagers to adults are diagnosed with blood cancers like leukaemia, lymphoma and myeloma in the UK every year.

beatingbloodcancers.org (http://www.beatingbloodcancers.org/) .uk

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