

## Anthony Nolan Research Institute

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The Anthony Nolan Research Institute is fully dedicated to improving the outcome of bone marrow transplantation (BMT). The three main problems in BMT are graft versus host disease (GvHD) which is caused by differences in human leucocyte antigens (HLA), viral infection and the separation of GvHD from the graft versus leukaemia effect (GvL). Therefore, the five main aims of our Research Institute are the: -

1. Investigation of the significance of HLA disparities between donor and patient at the molecular level and to analyse their influence on the outcome of bone marrow transplantation (BMT).
2. Maintenance and development of the HLA and KIR Sequence Databases.
3. Isolation and characterisation of antigenic peptides from cytomegalovirus that act as targets for cytotoxic T-cell mediated responses.
4. Identification of target peptides and effector cells involved in graft versus leukaemia (GvL).
5. Identification of target peptides and effector cells which initiate, maintain or perpetuate graft versus host disease (GvHD).

During the past ten years our research team has made significant progress in many areas. For example, we have developed a new method that allows us to detect molecular differences that might be responsible for graft rejection and have identified CMV virus peptides that might be relevant in the future use of vaccinations. We are also studying the mechanisms of differentiation of the immune response after transplant and in this way we might be able to treat early stage GvHD.

One of the most important activities of the Research Institute is orientated to academic teaching and training. We have established a structured research organisation where a senior scientist is in charge of an individual research area and has under their supervision a team consisting of postdoctoral research fellows; PhD students and technicians. The teams interact with one another, as many of the projects overlap and this enables the sharing of experience and facilities.