

2004 Annual Fellowship Report in grant of Sofia Luce Rebuffat

I am glad to report you my scientific activities developed during 2004 regard the research on therapeutic approaches for childhood myelodisplasic syndrome. This project has been coordinated by Doctors Daniela Montagna, Rita Maccario and Franco Locatelli at Immunology of Transplantation Laboratory of Pediatric Oncohematology Unit, IRCCS Policlinico San Matteo from Pavia, Italy, with a grant in memory of Sofia Luce Rebuffat.

During this period I dedicated my efforts to study leukemic dendritic cells ability of patients with juvenile myelomonocytic leukemia (JMML) to generate anti-leukeima cytotoxic T-lymphocytes (CTL). The only curative treatment for children with JMML is considered to be allogeneic hematopoietic stem cell transplantation. However, leukemia relapse occurs frequently and represents the main cause of treatment failure. The dendritic cells (DC), part of our immunological system, are the most efficient stimulators of CTLs, which are lymphocytes specialized in eliminate leukemia cells. Nevertheless, dendritic cells may be affected themselves by JMML and so be unable to generate CTLs. For this reason we decided to learn more about these cells, about their role in JMML and to develop new strategies to improve the anti-leukemia immune response after bone marrow transplantation.

Based on previous reports on similar disease of adults, named chronic myeloid leukemia, we know that DC in JMML are clonal, leukemia involved and less capable of eliciting an anti-leukemia response. Furthermore, it is possible, using experimental procedures, to generate a higher number of CTLs using bone marrow donator's DC stimulated with patients leukemia cells to be infused after transplantation as immunotherapy approach.

Besides this project, I have been working in other interesting researches concerning immunotherapy approaches for childhood leukemias:

"In vitro separation of GVL effect and GVHR from anti-leukemia CTL lines: a perspective for adoptive immunotherapy after allogeneic HSCT". D Montagna, F Locatelli, **L Daudt**, I Turin, E Montini, D Lisini, M Zecca, P Cerutti, A Moretta, P Comoli, R Maccario.

Presented at 30° Annual Meeting of European Bone Marrow Transplantation Group, Barcelona March 28-31 2004

"Ruolo dell'Immunosorveglianza Anti-Tumorale nel Controllo della Malattia Residua Minima: Valutazione della Comparsa di Precursori Linfocitari T Citotossici (CTLp) Specifici per i Blasti Leucemici in Pazienti Affetti da Leucemia Linfatica Acuta". **Daudt L**, Locatelli F, Turin I, Montini E, Zecca M, Bonetti F, Telli S, Lisini D, Moretta A, Maccario R, Montagna D.

Presented at 31° Congresso Nazionale Associazione Italiana di Ematologia e Oncologia Pediatrica, Stresa, October 10-12, 2004 and honored with best oral presentation.

"Innovative approaches of adoptive immune cell therapy in paediatric recipients of haematopoietic stem cell transplantation". Locatelli F, Comoli P, Montagna D, Rossi F, **Daudt L**, Maccario R.

Published on "Best Practice & Research in Clinical Haematology", 2004;17:479-92.

"Ex-vivo Expansion of Anti-Leukemia Cytotoxic T Lymphocytes (CTL) lines: role of Interleukin 15 (IL-15) in Enhancing the Recovery of CTLs and in Increasing the Number of T Central Memory Cells (TCM) Present in the Lines". **L Daudt**, R Maccario, F Locatelli, I Turin, E Montini, G Ballardini, A Moretta, F Bonetti, S Telli, P Comoli, M Zecca, D Montagna.

Present at 31° Annual Meeting of European Blood and Marrow Transplantation Group, Prague March 20-23 2005.

I really believe that all these activities have been very helpful to improve my professional skills and fundamental for the progress of cellular therapy to address new strategies to cure a great number of pediatric patients suffering from oncohematological diseases.

In addition, I would express my sincere thanks for the great opportunity you gave me and for the important incentive to scientific researches on pediatric oncohematology ground.

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