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[\[Medical\]\[Cancer\] Academia Sinica Presents Breakthrough, Develops First Effective Immunotherapy for Childhood Neuroblastoma](#)

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According to the Academia Sinica Newsletter (2009/05/15), a new immunotherapy treatment pioneered by Distinguished Research Fellow and Deputy Director, Academia Sinica's Genomics Research Center, Dr. Alice Lin-Tsing YU has resulted in an average 20% improvement in the cure rate for children with neuroblastoma. This is the first effective immunotherapy reported for the disease and the first improvement on neuroblastoma cure-rates for the last 10 years. The results of the Phase III clinical trial were announced in a worldwide Web press conference on 14th-May and will be presented at the Annual Meeting of the American Society of Clinical Oncology (ASCO) between 29th-May and 2nd-Jun.

Neuroblastoma is, *ibid.*, a rare and malignant cancer of early childhood in which the cancer cells arise from the nerve cells in the neck, chest or abdomen. At the early stage it is difficult to observe, but when it gets observed, it has arrived in the final stage. It is the most common cancer diagnosed in the first year of life and is responsible for 15% of cancer-related deaths in children. Conventional treatment for the disease includes surgery, intensive chemotherapy with stem cell rescue (in which patients' stem cells removed before treatment are returned after chemotherapy to repopulate the blood and immune system), and radiation therapy. Despite these aggressive measures, only 30 percent of patients survive.

The newsletter points out, before her returning to Taiwan, Dr. YU, who has spent more than twenty years on neuroblastoma antibody before the present success, co-worked with Dr. Ralph REISFELD in Scripps; aiming at the Neuroblastoma glycolipid GD2, they presented the new antibody-based immunotherapy: chimeric anti-GD2 antibody ch14.18. She completed the Phase I and Phase II trials of this antibody at the University of California in San Diego where she is Professor of pediatric hematology/oncology. The latest Phase III trial was sponsored by the Children's Oncology Group (COG), a cancer research organization, and the National Cancer Institute of the National Institutes of Health in the US, whose result was quite effective and proved that ch14.18 can have 20% better chance of cure rate than before. Due to this, the randomization in this study was even stopped early in order to let all the participated ill children could receive the treatment.

In the past ten years, the treatment of Neuroblastoma enjoyed no breakthrough and was always very conservative. The new treatment presented by Dr. YU leaped out of the traditional notion; with the perspective of immunology, aiming at the glycolipid particles, she designed the passive immunotherapy with single anti-body, which makes itself the first successful case in the world. The focused glycolipid on Neuroblastoma cells is called GD2, which does not only inhibits the immune system from attacking cancer cells but also travel all over the body with blood to disable the immune cells. The team targets this specific glycolipid molecule with the antibody ch14.18, which binds to GD2 and provokes an attack by different types of immune cells (killer cells) against the cancer. Besides, it also allures some kind of complement in the blood circulation which pokes the cancer cells and inhibits their spread. In another words, the anti-body inhibits cancer with a natural fashion.

Related website: <http://www.asco.org/ASCOv2/Meetings/Abstracts>

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Reference:

[Academia Sinica Newsletter 2009/05/15](#)
