

Next-generation sequencing technology for medicine and research in Mainz



Center for Translational Oncology and Immunology (TrOn) Mainz has received one of the world's first Illumina HiSeq genome sequencers

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A next generation genome sequencer has been received in the newly launched Center for Translational Oncology and Immunology (TrOn) in Mainz. With the Illumina HiSeq 2000 instrument, the genetic material of cells can be completely decoded within a few days.

"The performance of TrOn as an innovation center and hub of the CI3 regional network of science and business is strengthened by this technology. This is therefore another important step to make Mainz a globally competitive center for personalized medicine," says Professor Dr Ugur Sahin, director of TrOn. "The new technology allows us to examine the genetic information in tumor and immune cells quickly and inexpensively in order to gain a better understanding of the interplay of cancer treatment and immune system. This is necessary to develop customized therapies for individual patients."

"The new instrument is eight times more powerful than previous methods," says Dr John Castle, head of Bioinformatics/Genomics at TrOn. "This represents not only a significant reduction of time and costs, but also more information that must be analyzed. For this, we are well positioned by our cooperation with the Mainz University Center of Data Processing (ZDV)."

Understanding the characteristics of individual cancer patients is the basis for a customized treatment and thus critical to a successful therapy. "Individualized" and targeted medicine offers a great promise to significantly improve cancer therapy, both decreasing the cost of health care and improving patient lives. The dramatically increased ability to decode genomes ushered in by this next era of DNA sequencing makes the vision possible.

University President Professor Dr Georg Krausch, member of the successful Mainz "City of Science 2011" team, comments: "This is one of the puzzle pieces which we want at our site: cutting-edge research to resolve major social challenges."

About the Center for Translational Oncology and Immunology (TrOn)

The Center for Translational Oncology and Immunology (TrOn) was founded in February 2010. Its partners include the state of Rhineland-Palatinate, the Johannes Gutenberg University Mainz, and the University Medical Center Mainz. The mission of TrOn - under the direction of Professor Dr Ugur Sahin - is to advance medical and scientific discoveries from research to patient treatment.

About the CI3-cluster

The cluster for Individualized Immune Intervention (CI3) is a regional network of science and industry, including three universities, six colleges, two Max Planck Institutes, the Paul-Ehrlich-Institute, the Association for Cancer Immunotherapy (CIMT), the European Business School, the Center for Translational Immunology and Oncology (TrOn), four large pharmaceutical companies, and more than 180 small and medium-sized companies from biotechnology and health care. The network focuses on immunotherapy, the fastest growing pharmaceutical market segment, with the mission to turn the Rhine-Main region into a European immunotherapy center.

✉ Contact

Christine Castle
CIMT Communications
TrOn - Center for Translational
Oncology and Immunology
Tel +49 6131 17-8025

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