Toshiba Develops DNA Chip

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According to JCN Network, Toshiba Corporation has announced the development of a highly sensitive electrochemical DNA chip that is able to detect DNA at very low concentrations.
The new chip integrates complementary metal oxide semiconductor (CMOS) circuits, one of the most widely used semiconductor-circuit technologies, with its sensors. It is the latest addition to Toshiba's advanced line-up of DNA chips and related technologies, and immediate applications will include analysis of susceptibility to anticancer drugs and health monitoring for preventative identification of disease genesis.

Toshiba announced its first electrochemical DNA chip in October 2001, a device that used an original current detection method to support development of individual treatment regimes for patients infected with hepatitis C. Jointly developed with a team from the Graduate School of Pharmaceutical Sciences of Osaka University, led by Professor Junichi Azuma, the chip supports investigation of treatment efficacy and side effects for individual patients. This research covered six areas of illness: tuberculosis, digestive disorders, ademonia, hyperlipemia, cardiac arrest and cancer.

Also this year, Toshiba announced a DNA chip for patients with rheumatism, developed in collaboration with Professor Naoyuki Kamatani of Tokyo Women's Medical University. Based on genetic statistics, the new DNA chip can determine drug efficacy and the probabilities of side effects and complications for patients.

The company will demonstrate the development concept of its latest chip

at SEMICON Japan 2004, one of Japan largest semiconductor industry events, which will take place at Makuhari Messe, Chiba Prefecture, from December 1 - 3, 2004.