Trifunctional Antibody Catumaxomab Kills Cancer Stem Cells

05.06.2009 - TRION Pharma GmbH and its sister company TRION Research GmbH presented new data on catumaxomab (Removab®) at the annual meeting of the American Society of Clinical Oncology (ASCO) demonstrating that the trifunctional antibody effectively eliminates cancer stem cells in the peritoneal fluid of malignant ascites (MA) patients.

Cancer stem cells (CSC) are defined as “tumor-initiating cells” that have the capacity to self-renew and to give rise to the variety of differentiated cells found in the malignancy. Chemotherapies have been shown to enrich CSC in the remaining tumors. CSC of solid tumors are characterized by different surface markers including EpCAM, the target antigen of catumaxomab.

Using patient samples from a pivotal phase II/III study, TRION detected the presence of cancer stem cells (CD133+/EpCAM+) in the peritoneal fluids of 62% of analyzed MA patients with different underlying primary tumor entities including ovarian, gastric and pancreatic cancer. Following catumaxomab treatment of four i.p. infusions (10µg day 0, 20µg day 3, 50µg day 7 and 150µg day 10), the CD133+/EpCAM+ cells were completely eliminated from the peritoneal fluids of all MA patients analyzed, irrespective of the underlying cancer. In the control group (paracentesis only) however, CD133+/EpCAM+ cells remained in the peritoneal fluids of all 6 patients analyzed.

“Destroying cancer stem cells means fighting cancer at its roots”, says Horst Lindhofer, CEO of TRION Pharma. “Catumaxomab’s efficacy against this particularly aggressive and resistant population of cancer cells further supports its therapeutic potential for the treatment of EpCAM-positive carcinomas.”

According to the company, Catumaxomab (Removab®) is presently the only approved therapeutic antibody targeting EpCAM, a surface antigen that is widely expressed in the most frequent forms of human cancer. On April 20th this year, Removab® received EU approval for the intraperitoneal treatment of malignant ascites in patients with EpCAM-positive carcinomas. Catumaxomab was invented by TRION Pharma and has been developed with Fresenius Biotech. Removab® is produced by TRION Pharma and marketed by Fresenius Biotech.