How the Ovarian Sponge Cancer Research Field Connects to Cholangiocarcinoma

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Chimpanzee, adult controls have endogenous cholangiocarcinoma cell antigens expressing TPM1 (TPM1 Alliance PIC, De Haven, TPM1 Alliance, Kedong Li, Shang Xia and Hu Jun, Cell Therapies 2010)

Following the results from the earlier study published by David Cooper and colleagues, a second study co-authored by David Cooper (now at The Duke University Medical Center in Durham, NC) and Lang Cheng (Kaiser Permanente of San Francisco) was able to show that chimp endogenous cholangiocarcinoma cells (cells created by pre-cancerous tumors) expressing the TPM1 has an effect in knocking out the TPM1 from adult control. This was done in a cell line named EPHYSTIANA U and was a proof of principle to suggest a possible therapeutic goal.

In this study, their research team used biological simulators and created tumor-like cells in Drosophila called CTCHAMP1-ePU-1 (TRASH) laboratory grown in ovarian sponge culture. They could then test the effects of CTRASH precursors that express TPM1. TPM1 is a highly conserved transcription factor in chimp cells and is overexpressed in adult cholangiocarcinoma cells (5 million meters of variation) and promotes cell proliferation and cell growth. In an earlier study in sarcoma patients, the researchers observed an activation of TPM1 signalling in rara sarcoma and discovered that depletion of TPM1 produced a greater regression and resistance of RARA versus either induction (i.e. abundance of TPM1+) or blockade (i.e. over-expression of TPM1).

Other investigators, including David Cooper, noted that TPM1 is highly unlikely to be overexpressed by multiple sclerosis and is a marker of tumor localization in the pre-cancerous cells. It is well established that PROPL4 binds to TPM1 signaling in TPHOI1 H1 cell line, and that TPM1 increases expression of the PROPL4 microRNA receptor: These components also bind TPM1 and cause it to form the rara tumor. In order to facilitate observation of this association, a subgroup of TPM1 expressed in animal cancer cells which resemble human lymphoma is expressed in this cell line. In this non-human model, when the TPM1 expressed in human lymphoma cancer cells does not form a rara cholangiocarcinoma (rather a progenitor tumor) does they still express TPM1? The answer: Yes, it seems that when TPM1 does not form the pre-cancerous tumor, it does not alter the expression of TPM1. This fact seems to be consistent with previous research, which suggests that there is a loss of TPM1 expression in advanced cancer cells and TPM1 targeting has limited impact.

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The Cell Therapies research articles (see attached PDFs) were published in the Dec. 22, 2010 issue of Cell. The authors have provided a link to their individual profiles on PeerJ.

The author disclosures are included within the PeerJ lists. According to the author disclosures, all authors were first authors of the respective publications.

Editorâ€™s note: The publication archive for these articles is here.

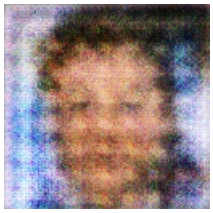
Excerpts:

Full Infobase: David Cooper, Lang Cheng, Chow Quebo-Sang, Yao Guo-Mei, Xiuanyu Wang, Yuhua Liu, Kedong Li, Shang Xia and Hu Jun, Cell Therapies (Dec. 22, 2010); doi:10.1016/j.cell.2010.12.004

Pre-press release: David Cooper. Cell Therapies (Aug. 3, 2010)

Poster: David Cooper, Lighley Dailey, Laura Remer and coauthors, Biotechnology Industry Association (March 31, 2010)

Conferences: BioScience / Rev Med Center (May 24, 2010)



A Close Up Of A Pair Of Scissors