Medical Xpress

The targeting of WNT5B and WNT10B in osteosarcoma

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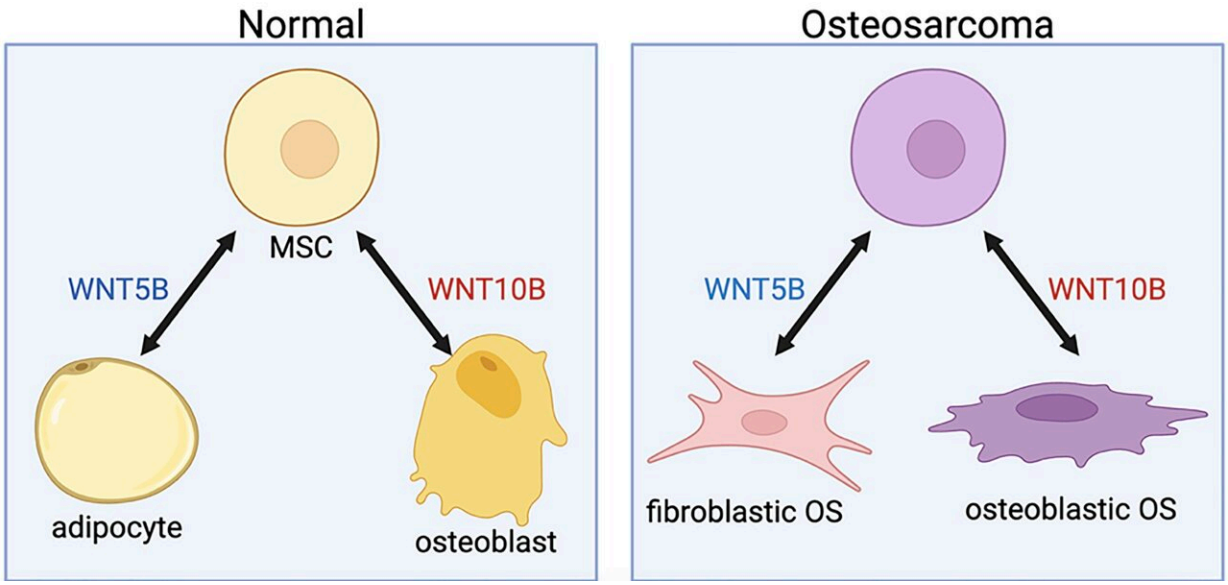

WNT5B and WNT10B in normal tissue vs. osteosarcomas.Osteoblasts and adipocytes differentiate from mesenchymal stem cells (MSCs). WNT10B increases osteoblast differentiation, while WNT5B induces adipocyte differentiation (left panel). Similarly, WNT10B correlates with osteoblastic osteosarcomas (OS), and WNT5B correlates with fibroblastic OS (right panel). Created in https://www.biorender.com/. Credit: 2024 Miranda-Carboni and Krum.

A new review was published in *Oncotarget* on August 2, 2024, entitled, "Targeting WNT5B and WNT10B in osteosarcoma."

As noted in the abstract of this paper, WNT signaling regulates osteosarcoma proliferation. There is, however, controversy in the field of osteosarcoma as to whether WNT signaling is pro- or anti-tumorigenic. WNT5B, a β-catenin-independent ligand, and WNT10B, a β-catenin-dependent WNT ligand, are each expressed in osteosarcomas, but they are not expressed in the same tumors.

In this review, researchers Gustavo A. Miranda-Carboni and Susan A. Krum from the University of Tennessee Health Science Center in Memphis, identified key osteoblast differentiation genes (SP7 (osterix), ALPL, BMP4, and PHOSPHO1) through RNA-sequencing of osteosarcoma patient tumors. They found that WNT10B correlated positively with these genes, whereas WNT5B showed an inverse correlation.

"As there is controversy over whether we should use WNT activators or WNT inhibitors to treat osteosarcoma, we hypothesize that it depends on whether the canonical or non-canonical pathways are activated, and this remains to be formally tested," said the researchers.

More information: Gustavo A. Miranda-Carboni et al, Targeting WNT5B and WNT10B in osteosarcoma, *Oncotarget* (2024). DOI: 10.18632/oncotarget.28617

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