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Prominin-1 in liver development and disease

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Prominin-1 (PROM1, CD133) is a penta-transmembrane glycoprotein known to express in various kinds of progenitor cells. It was originally discovered as a hematopoietic stem cell marker. Its expression is restricted to the plasma membrane protrusions and has been identified as a cholesterol binding protein. However, its function is yet to be identified. Studies have demonstrated that PROM1 positive tumor initiating cells form more aggressive tumors in xenograft models compared to PROM1 negative cancer cells. Its expression found to be correlated with poor prognosis of various cancers. It is believed that PROM1 maintains the stem cellness of progenitor cells and losses its expression during cellular differentiation. Our recent studies have demonstrated that murine embryonic liver progenitor cells or hepatoblasts expresses PROM1 as early as embryonic stage E11 and reduces its expression as the liver develops into a mature organ. Our studies also have demonstrated that Fibroblast growth factor receptor 2 mediated activation of AKT-beta-catenin signaling plays an important role in the proliferation of PROM1 positive hepatoblasts and liver cancer stem cells *in vitro*. Importantly, our recent studies have demonstrated an increased expression of PROM1 in cholestatic liver diseases. However its pathological significance is yet to be discovered.

Biography

Nirmala Mavila has completed her PhD in Biotechnology from Mysore University, India. She has completed her Postdoctoral trainings at Purdue University and Children's Hospital Los Angeles before joining as a Faculty at Cedars-Sinai Medical Center, Los Angeles, CA. Her main research interest is progenitor/stem cells in liver development, regeneration and diseases.

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