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ASO AUTHOR REFLECTIONS

ASO Author Reflections: Characteristics of Immune Evasion from Natural Killer Cells in Hepatoma Cancer Stem-Like Cells

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PAST

Cancer stem cells (CSCs) have been considered a small subpopulation of cancer cells within the bulk of tumor and to possess not only stem cell properties but also therapeutic resistance and metastatic ability.[1] In addition, CSCs have enhanced properties of immune evasion, especially against T-cell immunity, compared with non-CSCs.[2] However, the susceptibility of CSCs to natural killer (NK) cell-mediated immunity remains controversial.[3]

PRESENT

Using induced cancer stem-like cells (CSLCs) from human hepatoma cell lines, the sensitivity of them to NK cell-mediated cell lysis was investigated.[4] CSLCs generated by our team demonstrated the enhanced properties of immune evasion from NK cells compared with parental cells, accompanied by upregulating the ligands of immune checkpoint molecules, maintaining the levels of HLA class I, and downregulating NK cell-activating signals. In addition, our study suggests that some humoral factors, such as soluble MICA and exosomes, may exert immunosuppressive effects on NK cells.

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FUTURE

In recent years, accumulating evidence has suggested that NK cells play an important role in the regulation of metastasis.[5] In particular, poor prognosis of liver cancer is due to high frequencies of intrahepatic metastasis. Although we revealed the immune evasion of CSLCs from NK cells,[4] we have not yet uncovered the detailed molecular mechanisms, such as responsible contents for immunosuppressive effects in exosomes. Further investigations to determine the mechanism of evasion from NK cell-mediated immunity in CSLCs may bring novel therapy targets for preventing intrahepatic metastasis of liver cancer.

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