ASO AUTHOR REFLECTIONS

ASO Author Reflections: ASCL2, a Marker of Dynamic Colon Stem Cell, Involved in Wnt Pathway Activation Reflects Anti-cancer Drug Resistance in Primary Colorectal Cancer

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PAST

A portion of colorectal cancer (CRC) is resistant to anticancer treatment. The molecular mechanisms involved in drug resistance must be clarified to develop new therapeutic strategies and biomarkers.

PRESENT

We applied a phenylbutyrate administration model, previously used for exploration of genes involved in drug resistance in breast cancer and searched novel genes explaining drug resistance to CRC.¹ In the current study, ASCL2 was significantly associated with resistance against phenylbutyrate, 5-FU, and radiotherapy.² The regulation of ASCL2 may provide a clue for the molecular understanding of CRC treatment failure.

FUTURE

Ascl2 is a marker of dynamic stem cell of goblet cells of the colorectal noncancerous mucosa. Recently, ASCL2 expression was mainly regulated by long noncoding RNA

of WNTRLINC1 in CRC, which is a direct target of Wnt pathways.³ Establishment of control of Wnt pathway, including WNTRLINC1-ASCL2 axis, may greatly contribute to suppression of CRC from therapeutic point of view through understanding genetic linkage of normal stem cells to cancer occurrence in the future.

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