Overcoming therapy-resistant cancer stem cells

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Till date, international pharmaceutical companies have produced numerous anti-cancer reagents, including molecular targeting strategies and immunotherapies, but resistance exists even for these up-to-date medicines. The most important factors that make present therapeutic strategies ineffective are tumor heterogeneities. To visualize and collect cancer stem cell fractions, we transfected cancer cells with a green fluorescent protein-fusion one-carbon metabolism monitoring cassette. The monitoring system allowed visualization of cancer cell populations with therapy-resistant cancer stem cell properties. The present study revealed that polyamine flux plays a critical role in cancer stem cell properties, and polyamine metabolism is linked with epigenetic regulation of downstream gene expression. Epigenetic studies demonstrated the uncharacterized mechanism of transcription cycles and underscored the significance of molecular profiling in the discovery of novel therapeutic targets for retractive cancer cells. These novel approaches are beneficial for cancer research and may open avenues for treating gastrointestinal cancers that present challenges for treatment.

Biography

Ishii has completed his postdoctoral studies from Thomas Jefferson University, Philadelphia, PA. He is the professor of cancer profiling discovery, Osaka University, Japan. Specialty and Present Interest: intractable cancer stem cells, epigenome, metabolome, gastrointestinal tumors.

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