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Systematic strategy of novel antitumor agents for mitochondrial one carbon metabolism related enzymes

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The folate metabolism known as mitochondrial one carbon (C1) metabolism has been focused on to clear up a heterogeneity of cancer cells in our group. The folate metabolism has a very important role such as DNA repair and synthesis; therefore it has focused on as one of the anti-tumor target, too. However, the folate metabolism is an essential factor for cell maintenance in normal cells. The lack of folate in human body induces a reduction in DNA synthesis and methylation. It is known that the change of behavior results in toxic action for both cancer and normal cells. To overcome this problem, in this study, to explore new efficient antimetabolite drug target in the C1 metabolism, we performed the computational analysis to investigate the association between transcriptome profiles of colorectal cancer (CRC) and lung adenocarcinoma (LA) patients and their overall survival (OS). Then, we identified the most efficient anti-tumor target with non- or the weakest side effects by considering the biological reaction pathway. After that, we have performed *in silico* screening for the identified target to explore the novel antitumor agents.

Biography

Ayumu Asai has completed his PhD at Meijo University School of Pharmacy and working as a Scientist at Osaka University School of Medicine, Japan. His research focuses on the establishment of novel, high-throughput drug discovery system against refractory gastrointestinal tumors.

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