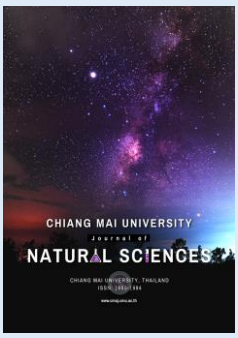

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Research article

A Panel of Four Anti-HSPG Monoclonal Antibodies Benefits in Increasing the Specificity in Detection of Colorectal Cancer

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Abstract Colorectal cancer (CRC) is the second leading with main cause of death is liver and lung metastasis. Using of a combination of genetic and epigenetic markers are addressed but the results have not been approved in clinical practice. A set of serum biomarkers has been proposed to increase accuracy in early diagnosis of CRC. In addition, non-invasive as well as the best prognostic panel of biomarkers and define predictive biomarkers for treatment of CRC are all aims of future research. HSPGs is an important biomolecule involving in cancer cell proliferation, differentiation, and migration. Membrane HSPGs shed into blood circulation and matrix in particular circumstance can be used as a specific biomarker for some cancer cells. In order to evaluate the benefit of a panel of anti-HSPGs monoclonal antibodies in increasing specificity to detect CRC, four clones of anti-HSPGs were studied for its specific reaction on various tumor cell lines by indirect immunofluorescent technique and analyzed by flow cytometer compared to normal white blood cells. A combination of two or more clones were focused. The results showed that all four clones presented a variation in reaction to all solid tumor cell lines tested but negative to normal white blood cells from different ABO blood groups. Interestingly, amongst those cells tested, HT29, a colorectal cancer cell lines were significantly reacted with all four monoclonal antibodies. Taken together, we proposed a panel of four anti-HSPGs monoclonal antibodies to be applied in various detection platforms to increase the specificity in screening of CRC.

Keywords: Cancer biomarkers, Colorectal cancer, HSPG

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