

**TITLE**

**Selective adhesion  
of human cancer  
cells on a blood  
compatible polymer**

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The isolation of circulating tumor cells (CTCs) is attractive attention because it has clinical significance in cancer therapy and it would enable earlier diagnosis of metastasis. If CTCs can be separated selectively from peripheral blood with intact, it is useful for the screening of anti cancer drugs. Here, we investigated selective adhesion and growth of human cancer cells on poly (2-methoxyethyl acrylate)(PMEA)<sup>1)</sup> which shows excellent blood compatibility. PMEA was coated on Polyethylene terephthalate(PET) at twice by a spin-coater. We confirmed the coating by static water contact-angle and X-ray photoelectron spectroscopy. Then we observed cell adhesion and growth on PMEA, Glass and PET by confocal laser scanning microscopy and scanning electron microscopy. The number of adherent cells on PMEA showed almost the same those on Glass and PET after 15, 30 minutes, and 1 hour. It is known that human cancer cells and platelets can be adhered easily on both Glass and PET. Our results suggest that the PMEA has a potential for a diagnosis device of cancer without cell staining.<sup>2)</sup> Furthermore, the growth of cancer cells on PMEA was lower than that on Glass. It is expected to growth inhibition of cancer cells using blood compatible polymers and new therapies without anti cancer drugs. 1) M. Tanaka. et. al., J. Biomed. Mater. Res. 68A. 684-695(2004) 2) M. Tanaka, S. Yagi et al., JP Patent 2010-256467, 17/11/2010.

**Biography**

S.Yagi is a Ph.D student at Biomaterials Science group, Department of Biochemical Engineering.