



Supplementary Figure 1. Schematic diagram illustrating inhibitory invasion activity in pc3-GD3s cells

The generation or the steady-state of GD3 depends on competition between downstream enzymes that generate b-series and c-series, such as GD2 synthase (β 4-GalNc T) and GT3 synthase (ST8Sia V). When the expression levels of GD2 synthase was examined in pc3-GD3s cells, the expression levels were increased, thus contributing to the transition of ganglioside composition, where GD2 is derived from GD3 (Fig. 4B). In contrast, the expression of GT3 synthase and the ganglioside GT3 was not detected in either pc3-GD3s or control cells. As illustrated in Supplementary Fig. 1, our study describes the over-expression of GD3 synthase in MDA-MB231 cells, which suppresses invasive activity through down-regulation of ICAM-1. We provide evidences that the accumulation of the GD2 may result in inhibition of ICAM-1 expression. Therefore, to the best of our knowledge, this is the first paper to describe that the ganglioside GD2 functions in anti-invasive activity in human breast cancer MDA-MB231 cells [39].