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Secondary metabolites of *Neosartorya fischeri* inhibited fibroblast-mediated tumorigenesis in triple-negative breast cancer

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Triple-negative breast cancer (TNBC), which is tested negative for estrogen receptor, progesterone receptor and HER2/neu receptor, is an aggressive histological subtype of breast cancer with limited choice of treatments. Epidermal growth factor receptor (EGFR) tyrosine kinase inhibitors (TKIs) have been studied to inhibit proliferation of TBNC, however, they lacked efficacy in clinical treatment. This may be due to cross-talk between cancer cells and neighboring stromal cells. For example, hepatocyte growth factor (HGF) secreted by cancer-associated fibroblasts has been shown to bind to a Met receptor and reduce efficiency of TKIs in TNBC, indicating that microenvironment affected development of cancer cells. To survey the effective TNBC inhibitors, we established a soft agar colony formation system for breast cancer MDA-MB-468 cells with co-culture of fibroblasts. *Neosartorya fischeri* extracts were tested for their inhibitory activity on TNBC by applying to this system. The results showed that some secondary metabolites of *Neosartorya fischeri* inhibited fibroblast-mediated colony formation of MDA-MB-468 cells. One of these metabolites exhibited inhibitory effect on phosphorylation of EGFR and Met, which offered the potential as a chemotherapeutic agent for TNBC.

Keywords: Triple-negative breast cancer, fibroblast, *Neosartorya fischeri*, secondary metabolite