

Asperjinone, A Nor-Neolignan, and Terrein, A Suppressor of ABCG2-expressing Breast Cancer Cells, from Thermophilic *Aspergillus terreus*

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Breast cancer cells express ABCG2 transporters, which mediate multidrug resistance. Discovering a novel compound that can suppress ABCG2 expression and restore drug sensitivity could be the key to improving breast cancer therapeutics. In the current work, one new nor-neolignan, asperjinone (1), as well as 12 other known compounds, was isolated from *Aspergillus terreus*. The structure of the new isolate was determined by spectroscopic methods. Among these isolates, terrein (2) displayed strong cytotoxicity against breast cancer MCF-7 cells. Treatment with terrein (2) significantly suppressed growth of ABCG2-expressing breast cancer cells. This suppressive effect was achieved by inducing apoptosis via activating the caspase-7 pathway and inhibiting Akt signaling pathway, which led to a decrease in ABCG2-expressing cells and reduction in the side-population phenotype.