The number of patients sick with breast cancer keeps increasing in many countries. Since many cancer types can be resistant to recent chemotherapeutic drugs or those drugs still cause side effect, searching an active compound, especially from natural products, is very interesting. As known, a bioactivity of natural products depends on biogeography, thus, in this research, *Apis mellifera* propolis from Nan province (the North of Thailand) was focused. Propolis was sequentially partitioned with methanol, dichloromethane, and hexane. Starting with 90 g of propolis, after evaporation, crude methanol extract (CME) at 660 mg, crude dichloromethane extract (CDE) at 1,540 mg, and crude hexane extract (CHE) at 21,600 mg could be obtained. By MTT assay, CME, CDE, and CHE showed the inhibitory activity against breast cancer cell line (BT474) with the IC50 values of 41.46, 29.31 and 34.06 µg/ml, respectively. Therefore, CDE was the most active. It was further purified by quick column chromatography, adsorption chromatography. The expected band containing cardanol was proved by thin layer chromatography (TLC). The chemical structure of cardanol was verified by Nuclear Magnetic Resonance (NMR). Also, by MTT assay, cardanol could inhibit the growth of BT474 at the IC50 value of 15.57 µg/ml. Also, the growth curves between cardanol-treated and untreated BT474 could be drawn. In the future, the program cell death and cell arrest will be detected on cardanol treated BT474 by flow cytometry. The expression change of genes relating to cancer will be determined by quantitative reverse transcriptase polymerase chain reaction. Keywords: breast cancer BT 474 cell line, cardanol, cytotoxicity assay, IC50 value, propolis