

CHAPTER I

INTRODUCTION

Iron wood has a Thai name as Daeng. The scientific name is *Xylia xylocarpa* (Roxb.) Taub. (Figure 1). The wood of this plant is well-known for economic value. The wood used to make an attractive and decorative floors for public buildings and is highly resistant to abrasion. Other uses are railway and wagon construction, cart wheels, tool handles and boat buildings because it is one of the most useful timbers of which strength, durability, beauty, and resistance to wear and tear are required. Although *X. xylocarpa* has long been used for treatment of diseases but there are very few records medical benefits of this plant. Thai folkloric medicine, a decoction of the bark or wood stops hemorrhage. It is also a nourishment for the heart and is used to cure diarrhea, anemia and fever. The heartwood also can be used to treat the symptoms of ovary cancer and lung cancer. (มหาวิทยาลัยมหิดล. คณะเภสัชศาสตร์, ภาควิชาเภสัชพฤกษศาสตร์, 2538)

This species may be divided into two morphological varieties which are *X. xylocarpa* var. *xylocarpa* and *X. xylocarpa* var. *kerrii* (Craib & Hutch) Nielsen. (เต็ม สมิตินันท์, 2544). Up to now, there are only a few reports about chemical constituents of the heartwood of *X. xylocarpa*. In addition, its biological activities are still unrevealed. Therefore, this plant was subjected to a reinvestigation with the aim of identifying compounds with cytotoxic activity. The objectives of studying are 1) purification of the chemical compounds from heartwood of *X. xylocarpa* var. *kerrii* that was collected from Loei province and Mae Hong Son province, Thailand by chromatography, 2) structural determination of the chemical structures by spectroscopy, and 3) evaluation of pure compounds and crude extracts for *in vitro* cytotoxicity against many human cancer cell lines.