ABSTRACT

The marine natural products offer an attractive setting in which larger science of organic chemistry can be put to crucial tests. A truly elegant synthesis in this regard is a major advance in that it epitomizes how an imaginative mastery of the course of organic reactions can achieve a sophisticated objective by an economy of operations.

Investigations embodied in this dissertation entitled "**Synthetic Studies Towards Furoterpenes and Novel Triterpene Galactosides: Total Synthesis of Ambliol-A, Dendrolasin, Desmethylatractylon Derivatives and Pouoside Fragments**" have been carried out with a view to developing new and efficient routes to synthesize furosesquiterpene, furoditerpene and triterpene of marine origin. The content of the thesis is divided into four chapters.

In Chapter 1 synthesis of furo[2,3-b]- and furo[3,2-b]- decalin frameworks with a *cis* or *trans* ring juncture has been discussed.

Chapter 2 describes stereoselective total synthesis of ambliol-A and dendrolasin in a very lucid manner.

In Chapter 3 regio and stereoselectivity in the formation of β-chlorovinylaldehydes are studied with an ambition to generate small ring heterocyclic systems.

Chapter 4 describes the attempts to synthesize pouoside fragments and some chiral sulfoxides.

Thus a concise accounts of the synthesis of some marine derived terpenes has been presented.