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The oceans are the source of a large group of structurally unique natural products that are mainly accumulated in marine organisms such as sponges, tunicates, bryozoans, mollusks, echinoderms and fishes (Proksch et al., 2002). Moreover the sea is a treasure trove of immense bioactive substances, which are not only a source of potential drugs but also of new and novel structures with useful biological activity. Nevertheless less than 1% of these have been examined for their pharmacological activity (Baker and Murphy, 1976).

Chemical studies on the natural products of marine organisms in India began in the early 1950s with emphasis on benthic algae with the past few years extracts from marine organisms were tested for biological activity and many of these showed promising results.

Many natural chemicals of potential economic importance still await discovery from marine organisms. Inspite of exploration still there are large number of new compounds in the sea and these have to be screened for useful pharmaceutical activity. Marine pharmaceuticals are as old as mankind itself with early fact and fancy art-fully mixed in the use of natural products from the sea. Because of the physical and chemical conditions in the marine environment almost every class of marine organisms exhibit a variety of molecules with unique structural features.

The healing power of seawater is an integral part of the mythology associated with sea life. The poisonous puffer, is recorded in the papyrus records of Egyptian times (1900-1200 BC), Pliny the Elder (29-79 AD) discussed the use of ground stingray stringer as a toothache and obstetrical remedy (Halstead, 1965). Let the optimism be too rosy, that “there are vanishingly few human or animal drugs, based on, or derived from, compounds first identified in marine organisms”(Fenical, 1982).
Biologists, chemists, pharmaceutical and medical scientists are taking up the challenge of the drug development from ocean. In the last three decades approximately 2500 new metabolites were reported from marine organisms ranging from prokaryotic microbes and soft-bodied invertebrates to marine mammals. These metabolites are equally diverse in their biosynthetic origins (Ireland et al., 1989). Several bioactive compounds have been isolated from invertebrates like sponges, corals, jellyfishes, sea anemones, crustaceans and mollusks and identified as steroids, terpenoids, isoprenoids, sesquiterpenes. Many bioactive compounds have shown potential of becoming therapeutic agents of near future (Proksch et al., 2002).

Marine natural products continue to be a structurally diverse and pharmacologically most interesting source of bioactive metabolites. Some of them hold great potential for the development of new and much needed drugs primarily in the treatment of cancer. For example, the cone snail toxin M VII A has already successfully passed phase III clinical trials and will soon be available as an analgesic marketed as Zinconotide (Proksch et al., 2002). In the recent past, several pharmacological substances of marine origin have been developed. The “Cephalothin” (marketed as Keflin by Lilly pharmaceutical Co. USA) is an antibiotic, active against a number of penicillin resistant bacteria. The neurotoxin isolated from the porcupine fish and puffer fish (Kao, 1966) have been used clinically as a drug in terminal cancer and successful isolation of compounds such as protamine, cephalosporin C, Ara-A and Ara-C are a few examples. To date, researchers have isolated approximately 18000 marine natural products, 25 percent of which are from algae, 33 percent from sponges, 18 percent from coelenterates (sea whips, sea fans and soft corals) and 24 percent from representatives of other urochordata such as Ascidians (also called tunicates). Opisthobranch mollusks (nudibranchs, sea hares, etc.), Echinoderms (Starfish,
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Sea Cucumbers, etc.) and bryozoans (moss animals). A simplistic analysis of these data reveals that as the rate of a 10 percent increase in new compounds per year.

While chemistry has dominated the first three decades of marine natural products research resulting in the isolation and structure elucidation of thousands of new metabolites it appear that increase input from marine biology, microbiology & molecular biology is now needed in order to generate an equally sound knowledge with regard to the biochemical and genetic mechanisms underlying the expression of natural products (Proksch et al., 2002).

Many marine bioactive compounds have shown potential of becoming therapeutic agents in near future viz. Chitosan as an anti-obesity agent (Singla and Chawla, 2001), Didemin B, Aplidine and ET-743 as antitumor agents (Rinehart, 2000), Manoalide and Ziconotide as an analgesic (De Rosa et al., 1998; Olivera, 2002) and Kahalalides against HIV (Hamann et al., 1996). Ziconotide is the synthetic equivalent of a neuroactive peptide found in the venom of the fish-hunting marine snail Conus magus, its analgesic efficacy has been demonstrated in both animal and human studies (Eldabe et al., 2007). The ether extract of ray fishes showed very significant inhibitory effect against Vibrio cholerae in comparison with known antibiotic-tetracycline (Ravitchandiran e and Yogamoorthi, 2008).

Fish constitute almost half the number of vertebrates on earth and approximately 31000 species of fishes are contained in some 50 orders and 445 families (Nelson, 1984). Fishes, like many other forms of life are of immense value to human beings in various ways. They have been a staple food item in the diet for many people and they also serve as a curative source of various ailments and vitamin deficient diseases.
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Fish oils are particularly high in fatty acids *viz.* eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) functions as anti-inflammatory and have been useful in reducing symptoms of arthritis, lowering cholesterol and triglyceride levels, reducing platelet stickiness and symptoms of ulcerative colitis (Sadek, 2002). Isolation of squalamine lactate-antiangiogenic agent (Bhargava *et al.*, 2001). Chondroitin sulphate-improve osteoarthritis symptoms (Rejholec, 1987) and shyrnastatin 1 and 2 inhibit tumor neovascularization from shark cartilage (Pettit, 1977) Epidemiological studies shown a correlation between a low incidence of coronary heart disease and a high consumptions of fish products conversely (Church and Hodgson, 2000).

Therefore fishes still represents source of pharmacological compounds that may be useful as research tools or lead compounds for drugs, and as such, there pharmacological actions have been the focus of research work. However, while there has been much work characterizing the pharmacological activity of shark and electric ray, comparatively less research has been under taken on flat fishes. Recognizing the relevance of the use of traditional medicines in the modern world and the importance of natural products an ardent screening and thorough understanding of chemical structure and biological activity with the development of sophistications of the probes at his disposal is necessary to explore the invisible architectural marvels that are buried in these marine organisms like growth inhibiting, antibacterial, antifungal, antiviral, antitumor, anti-inflammatory, analgesic, cardio inhibitory, anticonvulsant, vasopressive and anti-HIV agent. It is important to record that the bioactive compounds reported have been constantly increasing in number indicating that marine organisms will continue to be one of the prime sources of natural products.
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Most of the native people are still in the habit of using the marine drugs in rather crude dosage forms. According to the world health organization, an estimate over 80% of the populations of developing categories uses traditional medicines (Allison Perry, 1996). In recent years, a significant number of novel metabolites with potent pharmacological properties have been discovered from the marine organisms. Although there are only a few marines – derived products currently on the market, several robust new compounds derived from marine natural products are now in the clinical pipeline with more clinical development.

Traditional healing practices are as old as the advent of man and are highly varied because it is ethnic, community specific and eco-system specific. It is evident that in medical history of many coastal nations, products of marine plants and animals are available as medical and / or pharmaceutical products in the treatment of diseases.

The traditional knowledge regarding the medicinal value of the fishes is prevalent among the local communities from the immemorial. In the absence of such traditional knowledge the categorizing of the fishes according to their medicinal value is Herculean task as the varieties of fishes are more. This knowledge has become a tool to identify and screen the biomedical by potential fishes. In order to identify such fishes, primary data on traditional use of medicine among the local fisherman individual (112) have been collected, through survey by interview method with questionnaire, prepared based on the modified version of Foundation for Revitalization of Local Health Traditions (FRLHT), Bangalore 1996.

The information obtained through the questionnaire has made it explicit that the four flat fishes in the family paralichthydae viz. *Pseudorhombus malayanus*, *Pseudorhombus elevatus*, *Pseudorhombus triocellatus* and
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_Pseudorhombus natalensis_ could be used in the treatment of various body ailments. Considering all the above facts, the present study has been undertaken selecting four potential flat fishes with the following objectives.
The objectives of the present research work

1. To survey the traditional use of marine organisms for various ailments through interview method using questionnaire to identify potential fish variety for the present study.

2. To undertake a survey on the literature available on the bioactive compounds from the marine organisms and to identify the lacunae with regard to teleosti.

3. To test the antibacterial properties of crude extracts against selected common human pathogens.

4. To evaluate the pharmacological properties viz. analgesic and anti-inflammatory activities of the crude extracts using animal model.

5. To evaluate the haemoagglutination activity of the crude extract using various animals and human blood groups.

6. To characterize the crude extract showing significant bioactivity through elemental analysis, UV, FT-IR and GC-MS studies.
LIMITATIONS:

1. Collection of information on the traditional use of marine organisms for healthcare purposes by the fishermen is limited to fishermen & fisherwomen aged above 50 years.

2. Biochemical characterization has been done only for the extract that showed significant pharmacological property.