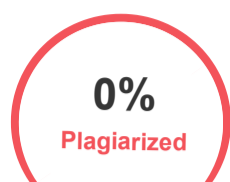


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2.3. Marine source compounds Based on the previous, numerous research organizations throughout the world have recently focused on the separation and characterization of biologically active components from marine source. The marine environment has developed into a significant source of molecules that have strong anticancer properties and display unusual chemical characteristics and mechanisms of action. Thirty-four of forty compounds in the pipeline for marine pharmaceuticals indicate "cancer therapy," and twelve of the seventeen marine-derived medications approved by regulatory bodies are used to treat cancer (Mayer et al., 2012). Sea is one of the most abundant habitats, teeming with variety of creatures, where their compounds are stand out because of their distinctive qualities. The development of cancer medicines derived from marine sources is extremely important in the fight against cancer. More than 60% of anti-tumor medications come from natural sources, including pharmaceuticals and compounds that are now being tested in clinical studies (Smyrniotopoulos et al., 2019). This study is targeted to find out the anticancer activity of marine source compounds.

4. Discussion Several research has examined the anticancer potential of compounds derived from plants and marine source. Some of these substances demonstrate efficient anti-cancer activity in one or more cancer types. Based on their activities several compounds have been listed in Table 1/Figure 4 and Table 2/Figure 6. For biomedical uses, natural substances are effective therapeutic and chemopreventive agents as well as useful tools for evaluating molecular targets (Orlikova et al., 2014; Trécul et al., 2012). Numerous studies have shown that phytochemicals found in natural products can prevent the initiation, promotion, and progression of carcinogenesis, and some of their medicinal compounds have the potential to be highly effective chemopreventive and chemotherapeutic approaches against cancer (Gupta et al., 2010; Lee, 2010). Plants produce a large number of bioactive metabolites, and because of their therapeutic benefits, they are highly sought-after in the field of pharmacology. They play a crucial role in the formation of sophisticated traditional medicine particularly that used to treat cancer diseases (Moghadamtousi et al., 2013). However, marine floras, which make up over 90% of the ocean's biomass, include bacteria, actinobacteria, cyanobacteria, fungus, microalgae, seaweeds, mangroves, and other halophytes. They provide a lot of opportunity for the development of novel anticancer medicines (Sithranga Boopathy and Kathiresan, 2010). Numerous substances derived from plants have cytotoxic properties with a wide range of mechanisms of action, including DNA damage, the inhibition of topoisomerases I and II, the induction of apoptosis, and the inhibition of tumor cell growth. Studies have demonstrated that plant-derived compounds combined with

chemotherapy drugs have a significant potential to kill tumor cells without harming healthy cells like lymphocytes and fibroblasts (Lichota and Gwozdinski, 2018). Marine-derived bioactive molecules have been found to be effective against a variety of tumor cells, including those that cause bone, blood, lung, mammary, melanoma, prostate, bladder, and renal cancers in addition to the recognized mechanisms of action mediated by necrosis, apoptosis, and lysis of tumor cells (Khalifa et al., 2019).

6. Conclusions

It has been found that a number of plant and marine natural products have anticancer action in vitro on a variety of tumor cell lines, including those originating from kidney, lung, prostate, bladder, melanoma, osteosarcoma, breast, and lymphoid malignancies. Furthermore, the majority of data on just how plant as well as marine products inhibit tumorigenesis both in vitro and in vivo point to the possibility that this is accomplished by inducing apoptosis, necrosis, and lysis in the tumor cells. WHO estimates that more than 80% of people in underdeveloped nations rely on traditional medicines for their most basic medical requirements. A healthy diet rich in fruits and vegetables can help stave against the progression of cancer. As chemoprotective medicines against different forms of cancer, several natural compounds are available. Fruits, vegetables, extracts from plants, herbs, microorganisms, and marine life all contain these chemoprotective compounds. The preventive effect against cancer may be attributed to a variety of natural product ingredients. In this work, we attempted to examine the anticancer properties of a number of organic compounds that were isolated from plant and marine sources.

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