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FROM OCEAN TO CLINIC: A REVIEW ON THE THERAPEUTIC POTENTIAL OF FUCOSYLATED CHONDROITIN SULFATE (FCS) FROM SEA CUCUMBERS

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INTRODUCTION

Sea cucumbers, which belong to the class Holothuroidea, have been widely used as food in various cultures, especially in Asian cuisine, due to their nutritional value and alleged health benefits. These organisms have attracted scientific interest due to the presence of a unique substance in their body wall: FCS. This systematic review aims to gather and analyze scientific evidence regarding the therapeutic potential of FCS extracted from sea cucumbers

MATERIAL AND METHODS

The systematic review aimed to evaluate the therapeutic effects of FCS extracted from sea cucumbers. Searches were conducted in Google Scholar and PubMed databases using the keywords FCS, fucosylated chondroitin, Holothuroidea, and sea cucumber, considering studies published since 1987. The selected articles addressed the structure and therapeutic effects of FCS specifically extracted from sea cucumbers. Study selection followed rigorous criteria. The extracted information, including authors, publication year, species used, extraction method, and observed therapeutic effects, was organized into a comparative table.

RESULTS

The systematic review of the analyzed articles indicated that FCS from sea cucumbers exhibits promising therapeutic potential, including anti-inflammatory, antitumor, and antithrombotic activities. However, most studies focused on a limited number of species. Further research is needed to investigate both the therapeutic effects of FCS and its presence and functionality across different sea cucumber species.

CONCLUSIONS

Studies based on research available in major academic databases have demonstrated that FCS possesses a broad spectrum of biological activities, highlighting its potential as a promising compound for therapeutic applications due to its anti-inflammatory, antitumor, and antithrombotic properties.

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