Journal of Pharmacokinetics & Experimental Therapeutics

Open Access

: Pharmaceutical innovation; Bioactive compounds; Pharmacokinetics; Physicochemical properties

e exploration of marine ecosystems has long captivated scientists, o ering a wealth of biodiversity and untapped potential for pharmaceutical discovery. Within the depths of the oceans, an extraordinary array of marine organisms—from corals and sponges to algae and microorganisms—produce a diverse repertoire of bioactive compounds with intriguing pharmacological properties [1]. ese marine-derived drugs have emerged as a frontier in drug discovery, holding promise for novel therapeutics to combat a wide range of diseases. Understanding the pharmacokinetics of marine-derived drugs is essential for harnessing their therapeutic potential e ectively. Pharmacokinetics encompasses the study of how drugs are absorbed, distributed, metabolized, and excreted by the body-a crucial aspect in determining their e cacy, safety, and dosing regimens. e unique chemical structures and biological origins of marine-derived compounds introduce distinctive pharmacokinetic challenges and opportunities [2].

e vast and diverse ecosystems of the world's oceans have long captivated humanity's curiosity. Beyond their aesthetic appeal and ecological importance, marine environments harbor a treasure trove of biochemical compounds with immense therapeutic potential [3]. Among these, marine-derived drugs have emerged as a promising frontier in pharmaceutical research, o ering novel solutions to a myriad of health challenges. Understanding the pharmacokinetics of these compounds is crucial for unlocking their therapeutic e cacy and ensuring their safe use in clinical settings [4].

Pharmacokinetics: understanding the journey of drugs in the body

Pharmacokinetics is the study of how drugs move through the body. It encompasses processes such as Absorption, Distribution, Metabolism, and Excretion (ADME). ese pharmacokinetic parameters play a pivotal role in determining the drug's concentration at the site of action, its duration of action, and potential side e ects. Understanding the pharmacokinetics of marine-derived drugs is essential for optimizing their therapeutic e cacy and minimizing adverse reactions [5].

Absorption: crossing biological barriers

Paramita Dey, Department of Pharmacology, University of Wales, UK, E-mail: paramitadey2@gmail.com

01-Feb-2024, Manuscript No: jpet-24-131554, 05-Feb-2024, Pre QC No: jpet-24-131554(PQ),

the pharmacokinetic principles governing th

activity and facilitate their elimination from the body. e metabolic fate of these compounds depends on factors such as enzyme speci city, substrate speci city, and metabolic stability. Marine organisms produce a diverse array of biocatalysts, some of which exhibit unique metabolic capabilities. Enzymes derived from marine microbes, for instance, have been employed in biotransformation processes to synthesize drug metabolites or enhance the bioavailability of pharmaceutical compounds. Harnessing these marine-derived enzymes holds promise for optimizing the metabolism of marine-derived drugs and improving their pharmacokinetic pro les [9].