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Sommario/riassunto	This book is devoted to alkaliphiles, their microbiology, biotechnological applications and adaptive mechanisms. Alkaliphiles are extremophilic organisms that are adapted to thrive in alkaline environments. Over the years, a wide variety of alkaliphiles belonging

to domain Bacteria, Archaea and Eukarya have been isolated and studied. These organisms use various adaptive mechanisms to thrive in ‘extreme’ alkaline environments, and some of these adaptive mechanisms are of immense importance to a range of biotechnological applications. In this book, readers will learn about the adaptive strategies of alkaliphiles in colonizing alkaline habitats, with a main focus on: (1) the production of enzymes that are active and stable in the high pH environment, and (2) the production of acids that decrease the pH of their immediate surrounding environment. Enzymes that are operationally stable at high pH (also known as alkaline active enzymes) are desirable in several applications such as detergent formulating and leather tanning processes, and they are among the major selling enzymes and the most important industrial enzymes. The growing demand in many existing and emerging biotechnological applications led to the discovery, characterization, engineering and evaluation of diverse types of alkaline active enzymes. In addition to the use of these fascinating enzymes in biotechnological applications, readers will discover the mechanisms of action and stability of these enzymes at extreme pH. Studies have shown that some alkaliphiles decrease the severity of the high pH of their media by producing substantial amount of organic acids, which could be of great interest in various applications presented in this book. In addition to enzymes and organic acids, other products of biotechnological importance such as carotenoids, bioactive substances, and chelators have also attracted researchers’ attention. Whole-cells of alkaliphiles have been used as food and feed, and are also useful in environmental applications such as in waste treatment and construction.