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Sommario/riassunto

"This book is based on general information about alkaloids, their applications, and the chemistry of some natural and synthetic alkaloids. The contents are divided into a total of nine chapters contributed by different subject experts. The first chapter describes introductory knowledge and pharmaceutical perspectives of alkaloids. This section reports the different classification methods of alkaloids for better understanding. In addition, various extraction methods and pharmaceutical applications of alkaloids are also included in this chapter. The second chapter is based on chemical aspects and therapeutic uses of tropane alkaloids. This section covers structural variations, pharmaceutical uses and biosynthesis of tropane alkaloids. Different uses of alkaloids in traditional medicine are described in the third chapter, which is based on scientific and historical evidence. The fourth chapter discusses alkaloids of the genus *Solanum* such as solamargine, solasonine, tomatidine and kukoamines. *Catharanthus roseus*, a well-known alkaloid-rich herb is covered in the fifth chapter with its key alkaloids like vinblastine and vincristine. The sixth chapter examines a bromopyrrole alkaloid namely stevensine which is naturally found in marine sponges. The seventh chapter focused on alkaloids derived from the *Tinospora cordifolia*, their structure and function and biosynthesis. Theophylline, a dimethylxanthine alkaloid with therapeutical properties is covered in the eighth chapter. This chapter also describes the applications of theophylline as a bronchodilator, immunomodulator and antiviral which make it an interesting candidate against coronaviruses. In addition to their medicinal properties, alkaloids are also useful as pesticides to protect plants from different pathogens and pests. These applications are included in the ninth chapter with the main emphasis on their unique properties such as being safer for the environment, easily degradable and low toxicity as compared to synthetic pesticides"--