

The Antimitotic Podophyllotoxin and its Derivatives Recent Synthetic Advances

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The substantial antimitotic potential of podophyllotoxin and its derivatives has attracted both synthetic and medicinal chemists to expand the chemical space for the subsequent biological evaluation of these compounds. The interest ranges from total synthesis, hemi-synthesis, one-pot synthetic approaches and structure-activity relationship studies. In the first segment of the review, we present recent development in the synthesis of podophyllotoxin and also describe its mode of action. the second section covers the synthesis and the structure-activity relationships of podophyllotoxin derivatives, along with the discussion of important structural features required by the molecule for displaying antimitotic activity. The last part describes the synthesis and biological evaluation of potent 4-aza podophyllotoxin derivatives. this review is of interest to chemists who study natural and synthetic compounds for drug discovery.

Keywords: Podophyllotoxin, Antitumor agents, 4-aza podophyllotoxin, Antimitotic agents.