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Role of Natural Products in Drug Discovery of Anti-Biotic and Anti-Cancer Agents

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Abstract : For many years, small organic molecules derived naturally from microbes and plants have delivered a number of expedient therapeutic drug agents. The search for naturally occurring lead compounds has continued in recent years as well, with the constituents of marine flora and fauna along with those of telluric microorganisms and plants being investigated for their anti-bacterial and anti-cancer activities. It has been observed that such promising lead molecules incline to promptly generate substantial attention among scientists like synthetic organic chemists and biologists. Subsequently, the availability of a given precious natural product sample may be enriched, and it may be possible to determine a preliminary idea of structure-activity relationships to develop synthetic analogues. For instance, anti-tumor drug topotecan is a synthetic chemical compound similar in chemical structure to camptothecin which is found in extracts of Camptotheca acuminate. Similarly, researchers at AstraZeneca discovered anti-biotic pyrrolamide through a fragment-based lead generation approach from kibdelomycin, which is isolated from Staphylococcus aureuss.

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