Recent Patents on Anti-Cancer Drug Discovery
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Bortezomib - First Therapeutic Proteasome Inhibitor for Cancer Therapy: A Review of Patent Literature

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Abstract:
Background: Bortezomib is a reversible inhibitor of proteasome proteins in mammalian cells. Bortezomib is proven to be cytotoxic to a number of tumor cells by disrupting their normal homeostatic mechanism and thereby, causing cell death. Currently, Bortezomib is prescribed for patients with multiple myeloma and mantle cell lymphoma.
Objective: This assessment highlights the overview of the recent patents of Bortezomib. This review includes patents grouped in sections like product patents, process patent, composition related patents as well as the treatment methodology. The objective of this article is to facilitate researchers with all existing patents at a single place.
Methods: Data were searched from various online databases. In which, paid databases include SciFinder® and Orbit®. Free databases include Patentscope® (WIPO), Worldwide Espacenet® (EPO), Google Patents and InPASS (Indian patent database).
Results: Several new processes and composition related patents of Bortezomib have been recently patented as its orange-book listed patents are going to soon expire during July 2022. Further, due to the problem of oxidation during development and long-term storage of Bortezomib formulation, a number of excipients are tried in these patents to stabilize the same. However, there is still a need for further development of an improved formulation of Bortezomib with better characteristics.
Conclusion: Extensive research has been carried out on various processes for preparing Bortezomib and the composition thereof. This type of dynamic research will clear the path for many generic players in the United States, which lead to the reduction of the price of the composition and thereby enhancing global health care at cheaper prices.

Keywords:
Anticancer; VELCADE; bortezomib; cancer therapy; composition; oncology; patent; proteasome inhibitor.

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