



Using polysaccharides against cancer

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Background and objectives: Nowadays cancer is one of the most important concerns of the society. The adverse effects of common therapeutics and resistance of some cancerous cells to treatment have brought the necessity of new approaches towards the issue. Polysaccharides are a group of carbohydrates found in natural sources. In the present article, our goal was to show the positive effects of carbohydrates (especially polysaccharides) in cancer treatment, based on literature review. **Methods:** The literature review was carried out between 1990 and 2017 inclusive using the following search terms: cancer, carbohydrate and polysaccharide and was performed with use of Google scholar, Medline, Scopus, PubMed, Elsevier and other similar data banks, related to medicine and pharmaceutical fields. **Results:** Plants like *Lyceum barbarum*, *Astragalus membranaceous*, *Panax ginseng*, and *Antrodia camphorate* have been studied with promising effects in combating cancerous cells. The polysaccharides from these plants have benefits with numerous mechanisms such as apoptosis, inhibition of angiogenesis, anti-proliferation, immunomodulation, tumor suppression, and increase in macrophage activity. Other studies showed over 200 mushrooms with anticancer effects, especially basidiomycetes (e.g. *Ganoderma lucidum*). Sulfated polysaccharides found in sea and animals or even a few bacteria like *E. coli* showed to be useful in cancer. **Conclusion:** Scientists are realizing the importance of natural drugs and polysaccharide as good and available sources that could give a bright future for prevention, cure and palliative therapy in cancer.

Keywords: cancer, natural, polysaccharide, tumor