

Brown seaweed fucoidan in cancer: Implications in metastasis and drug resistance

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Fucoidans are sulphated polysaccharides that can be obtained from brown seaweed and marine invertebrates. They have anti-cancer properties, through their targeting of several signaling pathways and molecular mechanisms within malignant cells. This review describes the chemical structure diversity of fucoidans and their similarity with other molecules such as glycosaminoglycan, which enable them to participate in diverse biological processes. Furthermore, this review summarizes their influence on the development of metastasis and drug resistance, which are the main obstacles to cure cancer. Finally, this article discusses how fucoidans have been used in clinical trials to evaluate their potential synergy with other anti-cancer therapies. © 2020 by the authors.

Cancer

Epithelial mesenchymal transition

Fucoidan

Metastasis

Nanoparticles

fucoidin

antineoplastic activity

breast cancer

colorectal cancer

drug resistance

drug structure

human

in vitro study

in vivo study

liver cell carcinoma

lung cancer

malignant neoplasm

metastasis

non small cell lung cancer

nonhuman

pancreas cancer

prostate cancer

Review

seaweed

vitreoretinopathy