Abstract

This review presents data on the antitumor properties of antineoplastons--alternative means of treatment for cancer originally isolated from human blood and urine. It was assumed that antineoplastons (derivatives of peptides and amino acids) are natural regulators of cell differentiation. In experimental studies it was showed that synthetic antineoplastons (A10-3-phenyl-acetyl-amino-2,6-piperidinedione and AS2-1--a mixture of phenylacetic acid and phenylacetylglutamine) were able to prevent the introduction of glutamine into the cell, to block the action of Bcl-2, to activate p53 and p21, to inhibit histone deacetylase, to induce apoptosis. In experiments in vitro and in vivo in several studies it was registered antitumor activity, mainly on models of hepatocellular carcinoma and glioma. Clinical data are limited by reports of individual clinical cases or series of cases and the results of several clinical trials Phase I-II, indicating a possible antitumor activity.

PMID: 25552063 [PubMed - indexed for MEDLINE]