Method of obtaining an antineoplastic preparation from the acidified alkaline hydrolyzate from peat

Classifications

- A61K35/10 Peat; Amber; Turf; Humus

PL124110B1
Poland

Other languages: Polish

Inventor: Stanislaw Tolpa, Stanislaw Kukla, Halina Rzadkowskabodalska, Waleria Olechnowiczstepien, Wojciech Czyzewski, Witold Adamek, Jozef Dec, Zygmunt Dudek, Henryk Wrobelpieciul

Worldwide applications

1977 PL 1978 ~~CH DE~~

Application PL20176277A events

1977-10-25 Application filed by Akad Rolnicza
1977-10-25 Priority to PL20176277A
1978-10-20 Priority to CH1086178A
1978-10-25 Priority to DE19782846482
1979-12-03 Publication of PL201762A1
1982-12-31 Publication of PL124110B1

Claims (2)

Hide Dependent
translated from Polish

Claims 1. The method of obtaining an antitumor preparation from acidified alkaline peat hydrolyzate, especially for the control of human neoplastic diseases, in which raw, air-dried and crushed peat is subjected to alkaline hydrolysis, and after the separation of the precipitated sludge, the obtained alkaline effluent is acidified and again sludge, the separated sludge, characterized by the fact that the acid sludge obtained from peat with ash content of 8-30%, degree of decomposition of 30-70% and pH 3.5-7.0 is subjected to secondary hydrolysis with an aqueous alkali solution of pH 9-14 at a temperature of 16 -60 ° and, after separation, it precipitates-124Ut 3 of the sludge, the obtained filtrate is again acidified to pH 3-1 and concentrated, then neutralized and concentrated to dryness, the residue obtained being extracted with 40-80% hydrated ethanol in temperature of 30-60 ° and the extract obtained in this way is separated from the excess of ballast substances, thickens around This volume is then extracted with a mixture of ethanol with another organic solvent such as ether, chloroform, benzene, ethyl acetate in the ratio 1: 1-1: 3 and the remaining water layer thickens to about half the volume, centrifuged and separated on cellulose columns or biogels using water or a 5-10% aqueous solution of ethanol, methanol or acetone as the developing system. 2. The method according to claim 1, iwItMjr, in that the excess of bases or acids is selectively removed by the ion exchange method. / PL

Description

translated from Polish

The subject of the invention is a method of obtaining an antitumor preparation from acidified alkaline hydrolyzate from peat, especially for the purpose of combating neoplastic diseases in humans. According to the prior art, it is known to isolate antitumor agents from peat containing a high concentration of polysaccharides (up to 93%). It consists in subjecting clean and dried peat to cold extraction with approximately 9% aqueous NaOH solution with the use of long-term periodical mixing. The resulting mixture is filtered off and the residue is extracted again with NaOH solution, the pH of the total extract is adjusted to 2 with 4 N HCl, then the whole is centrifuged. The obtained supernatant is dialyzed under running water for 48 hours. The dialysate is purified from salt by a series of chromatographic columns. The isolated product shows, according to the tests carried out, antitumor activity in mice (Hayoshida, Takuya; Kumakura, Mikio: Antycancer preparations from peats; Chemical Abstract, 1974, Vol. 80, 41027J.). According to the invention, it is obtained from ash peat. 8-30%, degrees of decomposition 30-70% and pH 3.5-7.0, the acidic permeate is subjected to secondary hydrolysis with an aqueous alkali solution of pH 9.0-14.0 at 16-60 ° C. After separation of the sediment, the obtained permeate is again acidified to pH 3.0-1.0 and concentrated, then neutralized and concentrated to dryness again. The residue obtained is extracted with aqueous 40-80% ethanol at 30-60 ° C. The extract obtained in this way is separated from the excess ballast substances, concentrated to about half of the volume and extracted with a mixture of ethanol with another organic solvent such as ether, chloroform, benzene, ethyl acetate in the ratio 1: 1-1: 3. The remaining aqueous layer thickens about half its volume, centrifuged and separated on cellulose or biogel columns using either water or a 5-10% aqueous solution of ethanol, methanol or acetone as the developing system. Selective removal of excess bases or acids is accomplished by ion exchange. In the final product obtained by the method according to the invention, apart from the polysaccharides, certain mineral salts are found. The final preparation obtained according to the invention is different from the chemical composition described in the prior art, as well as the broadly proven anticancer activity. 2 124110 The test preparation obtained " In vitrou, it was active at the concentration of 0.5 µg / ml on SL 2 lymphoid cells collected from mice. The preparation, at various stages of its development, was subject to preliminary tests on laboratory animals for toxicity and pre-cancerous effects for over 10 years. Crocker and Ehrlich type transplant neoplasms were used in onostatic studies. Under the influence of the preparation, the non-movable neoplastic tumors separated from the unchanged tissue, thus enabling the operation of the surgical procedure. No acute or chronic toxicity was found. The preparation is used in the form of per os or parenteral (im) solutions, in the form of poultices and ointments, depending on the type neoplastic diseases and the stage of cancer development. The obtained peat-derivative preparation with antitumor effect does not reveal any negative side effects during the period of application, on the contrary, a significant improvement in the blood picture, increase in laceration and increase in body weight were found. Example I. One kilogram of air-dried peat is ground

up. and extracted with 8 liters of 0.1-8.0% aqueous sodium hydroxide solution for 36 hours at room temperature with constant stirring. The alkaline extract is centrifuged to separate undecomposed plant debris, then acidified with hydrochloric acid to a pH of about 1 and left for 12 hours. The separated precipitate is filtered off, the clear filtrate is made alkaline with sodium hydroxide to pH 9 and sapted again. The filtrate is acidified with hydrochloric acid, concentrated to about 1/5 of its volume under reduced pressure, neutralized with sodium hydroxide, evaporated to dryness and extracted with an aqueous solution of ethanol . The alcohol-water extract is separated from the greasy-oily residue and the inorganic salts and thickened until the precipitation of salt begins. After filtering off the separated salt, the obtained filtrate is extracted with a 1: 1 mixture of ethanol with ether, chloroform, benzene or ethyl acetate. The further emission of inorganic salt is drained, and the water seepage is concentrated to 1/2 volume, swirled and sipped. The clear slurry after concentration is subjected to column chromatography on P-2 minus 400 mesh (wet) biogel with the use of water or 10% aqueous ethanol solution, giving fractions with antitumor activity. The obtained preparation has a light-brown to brown, hygroscopic, amorphous appearance; it contains ± 10% of water, is water-soluble and insoluble in organic solvents. After acid hydrolysis - positive reactions to sugars with group reagents - the presence of glucose, galactose, arabinose, glucuronic acid, rhamnose, xylose, 6-deoxyglucose and 2-deoxyglucose was found. IR spectrum - typical for polysaccharides. After combustion at 700 ° C, a residue of ± 6-10% is obtained (metal oxides, among which the presence of Mo, V, Cd, Co, Ni, Mn, Mg, Cu and non-metals such as Si and P was found). . One kilogram of air-dried peat is ground and extracted with an aqueous solution of sodium hydroxide as in Example 1. The clear alkaline extract is neutralized to pH 7 on a Dowex 50 WX X 8 ion exchanger, mesh 50-100. The neutral aqueous solution is acidified with hydrochloric acid to a pH of about 1 and left for about 12 hours. The separated precipitate is filtered off, and the acid filtrate is neutralized on the IRA 410 or Dovex 2 ion exchanger, and made alkaline again with aqueous sodium hydroxide solution to pH 9 of the sludge. The alkaline effluent is neutralized on the ion exchangers as above and acidified with hydrochloric acid to pH 2, and then it thickens to about 1/25 of its volume under reduced pressure. The clear acidic effluent is evaporated to dryness and further processed as in example I. The obtained preparation has an analogous chemical composition and properties to those given for the preparation in example 1. • The by-products obtained in the presented examples of technological processes according to the invention, after appropriate processing, show biological activity and can be used as agents with bacteriostatic and antiviral effects, as well as in agriculture in the production of plants and animals. Patent claims 1. Method of obtaining an anti-cancer preparation with acidified alkaline hydrolyzate from peat, especially for the purpose of fighting cancer in humans, in which raw, air-dried and crushed peat is subjected to alkaline hydrolysis, and after separation of the precipitated sludge, the obtained alkaline effluent is acidified and the separated sludge is drained again, characterized by the fact that the obtained sludge is from peat with ash content of 8-30%, degree of decomposition 30-70% and pH 3.5-7.0, the acidic permeate is subjected to secondary hydrolysis with an aqueous alkali solution of pH 9-14 at a temperature of 16-60 ° and, after separation, loses 124Ut 3 of the sediment that you have received should be reused that it is acidified to pH 3-1 and concentrated, and then neutralized and concentrated to dry again, the resulting residue is extracted with 40-80% aqueous ethanol at 30-60 ° and the extract obtained in this way is separated from the excess substance ballast, thickens around a volume, extracts a mixture of ethanol with another organic solvent such as ether, chloroform, benzene, ethyl acetate in the ratio 1: 1-1: 3 and the remaining water layer thickens to about half its volume, centrifuged and separated into cellulose or biosel columns using water or 5-10% aqueous ethanol, methanol or acetone as the developing system. 2. The method according to claim 1, iwItMjr, in that the excess of bases or acids is selectively removed by the ion exchange method. / PL

Cited By (5)

Publication number	Priority date	Publication date	Assignee	Title
LT3241B	1992-12-02	1995-04-25	Torf Ets	Process for the manufacture of a preparation having immunomodulating activity and stimulating cytokine formation by extracting plants and plant residues
Family To Family Citations				
US6267962B1	1990-12-21	2001-07-31	C-P Technology Limited Partnership	Compositions and methods of treatment using peat derivatives
WO1992016216A1 *	1991-03-16	1992-10-01	Torf Establishment	Peat-derived bioactive products and pharmaceutical and cosmetic compositions containing them
DE4316347C1 *	1993-02-26	1994-08-18	Ina Dr Levi	Process for the preparation of a pharmaceutical preparation and use thereof for the treatment of certain diseases
DE4490853D2 *	1993-02-26	1996-06-27	Ina Levi	Treatment of (retro) viral diseases and method for producing a pharmaceutical preparation

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CA2022962C	2001-01-16	Process for the preparation of extracts having high content in anthocyanosides
Yagi et al.	1977	Aloe mannan, polysaccharide, from Aloe arborescens var. natalensis
EP0212595B1	1992-08-05	Calcium and magnesium complexes of phytohaemagglutinin-polyheteroglycanes, their manufacture and pharmaceutical preparations
DE2049638A1	1971-04-15	Isomeric nucleoside derivatives and processes for their preparation
Araújo et al.	2011	Lectin from Crataeva tapia bark exerts antitumor, anti-inflammtory and analgesic activities
Iizuka et al.	1962	Maltoryzine, a new toxic metabolite produced by a strain of Aspergillus oryzae var. microsporus isolated from the poisonous malt sprout
PL124110B1	1982-12-31	Method of obtaining an antineoplastic preparation from the acidified alkaline hydrolyzate from peat
DE3744119A1	1989-07-06	USE OF POLYSULFATED HEPARINES
Erspamer	1952	Biological activity of some enteramine-related substances
Bukhari et al.	1972	Aryl-2-halogenoalkylamines—XXVI glucuronic, sulphuric and phosphoric esters of p-di-2-chloroethylaminophenol
CH630929A5	1982-07-15	METHOD FOR PRODUCING NEW DISACCARIDDERIVATEN of anthracyclines.
FI98889C	1997-09-10	A method for preparing an antineoplastic drug derived from a plant extract

Buchanan et al.	1950	552. Chemistry of the vitamin B 12 group. Part I. Acid hydrolysis studies. Isolation of a phosphorus-containing degradation product
DE19600301C2	1999-12-09	Macrocyclic compounds built up by cyclooligomerization of the simple carbon suboxide C¶3¶O¶2¶, processes for their production and recovery and their use
EP0003788B1	1981-12-09	Glycofuranosyl-nitrosourea derivatives, process for their manufacture and their pharmaceutical preparations
DE2803681C2	1989-03-16	
RU2697197C1	2019-08-13	Method of producing water-soluble salt form of echinochrome a, suitable for use in pharmacological and food industry
Rakhmanberdyeva et al.	2005	Galactomannan from Gleditsia macracantha seeds and its biological activity
RU2302429C1	2007-07-10	Method for producing fucoidan from laminaria
Umezawa et al.	1964	Syntheses of O-(2-amino-2-deoxy-α-D-glucopyranosyl)-deoxystreptamine, an antituberculous isomer of paromamine
JP2849832B2	1999-01-27	Antibiotic and method for producing the same
Kjaer et al.	1968	Glucosinolates in Lepidium bonariense L.
SU1736502A1	1992-05-30	Method for preparation of polysaccharides, showing laxative action
PL67734B1	1972-10-31	
NAGASAWA et al.	1973	Synthesis and Characterization of Chinoform Sulfate

Priority And Related Applications

Priority Applications (3)

Application	Priority date	Filing date	Title
PL20176277A	1977-10-25	1977-10-25	Method of obtaining an antineoplastic preparation from the acidified alkaline hydrolyzate from peat
CH1086178A	1977-10-25	1978-10-20	Process for the production of a preparation acting against neoplasms and preparation prepared according to this process
DE19782846482	1977-10-25	1978-10-25	Process for obtaining a preparation containing polysaccharides for combating neoplasms

Applications Claiming Priority (1)

Application	Filing date	Title
PL20176277A	1977-10-25	Method of obtaining an antineoplastic preparation from the acidified alkaline hydrolyzate from peat

Concepts

machine-extracted

Download Filter table

Name	Image	Sections	Count	Query match
preparation method		title,claims,description	14	0.000
peat		title,claims,description	13	0.000
anti-eoplastic		title	1	0.000
ethanol		claims,description	33	0.000
acetic acid ethyl ester		claims,description	12	0.000
water		claims,description	10	0.000
sludge		claims,description	9	0.000
solution		claims,description	9	0.000
acetone		claims,description	8	0.000
chloroform		claims,description	8	0.000
diethyl ether		claims,description	8	0.000
extract		claims,description	8	0.000
mixture		claims,description	7	0.000
benzene		claims,description	6	0.000

methanol	claims,description	6	0.000
substance	claims,description	6	0.000
acid	claims,description	5	0.000
anti-tumor	claims,description	5	0.000
aqueous solution	claims,description	5	0.000
filtrate	claims,description	5	0.000
separation method	claims,description	5	0.000
neoplastic	claims,description	4	0.000
organic solvent	claims,description	4	0.000
acids	claims,description	3	0.000
alkali	claims,description	3	0.000
base	claims,description	3	0.000
cellulose	claims,description	3	0.000
cellulose	claims,description	3	0.000
decomposition reaction	claims,description	3	0.000
disease	claims,description	3	0.000
hydrolysis reaction	claims,description	3	0.000
ion exchange	claims,description	3	0.000
alkaline hydrolysis reaction	claims,description	2	0.000

Show all concepts from the description section

Data provided by IFI CLAIMS Patent Services