Patents

Melanin production in high yield, from chopped garden turnips by extracting with aqueous ammonia, acidifying extract with hydrochloric acid and washing precipitate

Abstract

The object of the invention is to provide a method for obtaining melanin, which is less expensive than the known methods and allows a good yield of melanin. Ammonia water having a temperature of 60 to 80 ° C and a pH of 8 to 11.8 in a ratio of ammonia water to spent grains of 1 to 4.8 to 18 is added to the mass of crushed turnips. Both substances are added after one hour of hydrochloric acid until reaching a pH of 3 to 3.9 and allowed to act for 4 to 6 hours. Subsequently, the precipitate formed is washed with acetic acid having a pH of 4 to 5, acetone and alcohol, then filtered, vacuum dried and packaged.

Classifications

- C09B61/00 Dyes of natural origin prepared from natural sources, e.g. vegetable sources

DE102007006792A1

Germany

Find Prior Art Similar

Other languages: German

Inventor: Simone Schwarzer, Uwe Werner

Worldwide applications

2007 ~~DE~~

Application DE200710006792 events

2007-02-01 Application filed by Uwe Werner

2007-02-01 Priority to DE200710006792

2008-08-07 Publication of DE102007006792A1

2020-04-09 Application status is Withdrawn

Info: Patent citations (1), Cited by (1), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, DPMA, Discuss

Claims (2)

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1. A process for the preparation of melanin, **characterized** in that the mass of comminuted turnips ammonia water having a temperature of 60 to 80 ° C and a pH of 8 to 11.8 in a ratio ammonia water to spent grains of 1 to 4.8 to 18 is added to both substances after one hour of hydrochloric acid until reaching a pH of 3 to 3.9 and allowed this mixture act 4 to 5 hours, then the precipitate formed with acetic acid having a pH of 4 to 5, acetone and alcohol, then filtered, vacuum dried and packaged.

2. Method according to claim 1, characterized in that that after vacuum drying the product is ground.

Description

[0001] In the DE 10 2004 003 801 A1 describes a process for the preparation of water-soluble and water-insoluble melanin and melanin semiconductor film from vegetable raw materials, especially from leaves of black tea, sunflower-seed shells, grain or grapes. The dry vegetable substances are extracted in caustic soda for about four hours. Subsequently, the plant mass is removed from the sodium hydroxide solution and acidified with hydrochloric acid to a pH of 2 to 1, whereby unpurified melanin precipitates. The precipitated mass is dried and then washed with an acidified solution of distilled water having a pH of 2 to 1. This is followed by drying of the mass.

[0002] task The invention is to provide a method for obtaining melanin create, which is less expensive than the known methods is and allows a good yield of melanin.

[0003] With The invention reduces the time required for production. The fertility is given for a large production. Another advantage of the invention is the use of turnips as Starting material for melanin production. Beetroot stand in sufficient quantity available for production. Another advantage of using turnips is the further use of the remains after the process of leaching the lye.

[0004] in the An embodiment of the method will be described below. A first step is the production of a beet from beet. The spent grains are ammonia water with a temperature of 65 ° C and a pH of about 10 added to a ratio Ammonia water to spent grains is reached from 1 to 4.8 to 18. The residence time of the spent grains with the ammonia water is one hour. Subsequently, hydrochloric acid is until it reaches a pH of 3 to 3.9 added and this 4 to 6 hours act left.

[0005] The Use of ammonia water at 65 ° C in the period of An hour not only ensures high yield of melanin, but also the solubility in water, what on the interaction of the ammonia with the functional groups attributed to the precipitated phenolic biopolymer and leads to the desired water solubility.

[0006] The Wash out the precipitate containing melanin with one aqueous solution of acetic acid with a pH between 4 to 5, acetone and alcohol guaranteed a thorough cleaning of the raw material of different Contaminants without losses for the product, which in the insolubility of the product in the solvent is justified.

[0007] The Application of an acid is due to the fact that the product is soluble under neutral and basic conditions is and at a pH of 4 to 5 no losses occur. The use of acetic acid is based on that they can be saved acetone and alcohol and one highest possible speed effect and purity is achieved.

[0008] at one concrete embodiment fills one to 10 kg of beet stock 100 l NH4OH with a pH value from 8.5 in - a reactor with 250 l capacity, mix it and let it react for one hour at 65 ° C. After filtration, concentrated hydrochloric acid is added to the Filtrate added until a pH of 3.3 is reached. At room temperature allowed to stand the mixture for 4 to 6 hours. Subsequently Decant carefully the precipitate, centrifuge She filters and filters through a bulkhead filter, washes with 5 l of warm acetic acid at 60 to 70 ° C and a pH of 4.5, 2 liters of acetone and 2 liters of ethanol. After that it will be Preparation dried in vacuo. The final result is 115 Grams of vito-melanin.

[0009] The Dry product is ground and z. B. welded in ampoules airtight.

[0010] The Solubility of the preparation in water amounts 7.7% at 25 ° C, 10.4% at 50 ° C, 13.3% at 75 ° C and 15.1% at 85 ° C.

[0011] The best results are achieved with 4% NH 4 OH at a pH of 10.5 and a mixing ratio of 1 to 10, a pH after addition of the hydrochloric acid of 3.3 and washing with Acetic acid with a pH of 4.5.

QUOTES INCLUDE IN THE DESCRIPTION

[0012] This list The documents listed by the applicant have been automated generated and is solely for better information recorded by the reader. The list is not part of the German Patent or utility model application. The DPMA takes over no liability for any errors or omissions.

Cited patent literature

[0013] DE 102004003801 A1 **[0001]**

Patent Citations (1)

Publication number	Priority date	Publication date	Assignee	Title
DE102004003801A1	2004-01-26	2005-08-18	Stanislav Davidenko	Recovering melanin from plant materials, for use e.g. in cancer treatment or as semiconductor, by extracting with sodium hydroxide solution, acidifying extract and purifying precipitate
Family To Family Citations				

* Cited by examiner, † Cited by third party

Cited By (1)

Publication number	Priority date	Publication date	Assignee	Title
EP3002043A1 *	2014-10-02	2016-04-06	Biocyte	A method for preparing an olive extract with a melanin content greater than 5%
Family To Family Citations				

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

Similar Documents

Publication	Publication Date	Title
CA2691394C	2016-10-11	Process for preparing amorphous rifaximin and the amorphous rifaximin thus obtained
US7198695B2	2007-04-03	Method for separating hemicelluloses from a biomass containing hemicelluloses and biomass and hemicelluloses obtained by said method
CN101096693B	2010-04-21	Method for preparing theaflavin and thearubigin from fresh green tea
CA1087176A	1980-10-07	Method for treatment of corn hulls
CN102575422A	2012-07-11	High temperature lignin separation process
US2868778A	1959-01-13	Process for extracting hemicellulose from corn coarse fiber
CN100491405C	2009-05-27	Extraction and preparation technology for pectin of orange pericarp
CN103711017B	2016-05-11	A kind ofly prepare the method for cellulose and lignin as solvent normal pressure ultrasonic wave is auxiliary taking the height alcohol that boils
US3862122A	1975-01-21	Method of recovering chitosan and other by-products from shellfish waste and the like
CN103429642A	2013-12-04	Separation of lignin from plant material
CN1151142C	2004-05-26	Technical method of extracting rutin
CN101486669A	2009-07-22	Method for synthesizing taurine
ES2534757T3	2015-04-28	Extracts of grape seeds obtainable by fractionation in a resin
US1917539A	1933-07-11	Conversion of cellulose
CN103214595B	2015-09-23	The preparation method of Sodium chondroitin sulfate A
Black et al.	1951	Manufacture of algal chemicals. III. Laboratory-scale isolation of laminarin from brown marine algae
CN101531690B	2011-09-14	New technology for extracting tea saponin and tea seed oil from tea seeds by using water as solvent
CN102260316A	2011-11-30	Method for purifying tea saponin from oil tea seed cake pulp
CN101205248A	2008-06-25	Method for preparing ursolic acid by using paulownia leaves as raw material
EP2473554A1	2012-07-11	Improved process for dissolving cellulose-containing biomass material in an ionic liquid medium

US20070254086A1	2007-11-01	Process for preparing high-purity xanthohumol-containing powder and use thereof
CN102977380B	2014-04-16	Method for extracting high-purity gutta-percha from cortex eucommiae key fruit
US3716526A	1973-02-13	Refining of hemicelluloses
CN102250159A	2011-11-23	Method for extracting and preparing high-purity tannic acid from plant raw material containing tannin
CN101602980A	2009-12-16	A kind of low-temperature refining method of raisin seed oil

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
DE200710006792	2007-02-01	2007-02-01	Melanin production in high yield, from chopped garden turnips by extracting with aqueous ammonia, acidifying extract with hydrochloric acid and washing precipitate

Applications Claiming Priority (1)

Application	Filing date	Title
DE200710006792	2007-02-01	Melanin production in high yield, from chopped garden turnips by extracting with aqueous ammonia, acidifying extract with hydrochloric acid and washing precipitate

Legal Events

Date	Code	Title	Description
2010-12-16	8139	Disposal/non-payment of the annual fee	

Concepts

machine-extracted

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