COMBINATION TREATMENT OF TOBACCO EXTRACT USING ANTIOXIDANTS AND ANTIOXIDANT SCAVENGERS

BACKGROUND

Nitrosamines and in particular, tobacco specific nitrosamines (TSNAs) are targeted constituents of tobacco smoke. In addition, certain polyphenol compounds can form undesirable phenolic compounds during the combustion of tobacco and may also be targeted constituents of tobacco smoke. There is interest in providing a method for reducing the contents of these targeted compounds in tobacco smoke.

SUMMARY

The present application describes a process for treating a tobacco material comprising:

(a) extracting a tobacco material with a solvent to produce a tobacco extract and a tobacco residue, wherein the tobacco extract comprises at least one nitrite compound;

(b) contacting the tobacco extract with an antioxidant, to produce a mixture having a reduced content of the at least one nitrite compound; and

(c) contacting the mixture with an antioxidant scavenger, thereby removing the antioxidant therein, to produce a treated tobacco extract.

The present disclosure~~invention~~ also provides: a tobacco material treated by the process of the disclosure~~invention~~; a smoking composition comprising a tobacco material treated by the process of the disclosure~~invention~~; a smoking article comprising a rod of tobacco material treated by the process of the disclosure~~invention~~; and a smokeless tobacco material treated by the process of the disclosure~~invention~~. The smokeless tobacco material may be contained in a pouch comprising a porous material.

In a first aspect, there is provided a process for treating a tobacco material comprising:

(a) extracting a tobacco material with a solvent to produce a tobacco extract and a tobacco residue, wherein the tobacco extract comprises at least one nitrite compound;

(b) contacting the tobacco extract with an antioxidant, to produce a mixture having a reduced content of the at least one nitrite compound; and

(c) contacting the mixture with an antioxidant scavenger, thereby removing the antioxidant therein to produce a treated tobacco extract, wherein the antioxidant is selected from the group consisting of carotenoid terpenoids; flavonoid polyphenolics or bioflavonoids; phenolic acids and phenolic acid esters; nonflavonoid phenolics; citric acid, lignan and eugenol; and vitamins A, C and E.

In a second aspect, there is provided a tobacco material treated by the process as defined herein.

In a third aspect, there is provided a smoking composition, smoking article or smokeless tobacco material comprising a tobacco material treated by the process as defined herein.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As used herein, "tobacco material" denotes a tobacco starting material to be treated in various processes described herein, regardless of type, source or origin, which may have previously been subjected to other treatments. The tobacco material may include, but is not limited to, tobacco solids and any solid form of tobacco, such as, e.g., cured tobacco (such as flue-cured tobacco); uncured tobacco (also known as green tobacco); dried, aged, cut, ground, stripped or shredded tobacco; tobacco scrap; expanded tobacco, fermented tobacco; reconstituted tobacco, tobacco blends, etc. The tobacco material may be from any parts of the tobacco plant, such as leaf, stem, veins, scrap and waste tobacco, cuttings, etc.

Fresh-cut, green tobacco may contain very low levels of nitrosamine compounds. Yet, bulk nitrosamines including a variety of TSNAs can be formed during the post-harvest treatments, i.e., curing and ageing of tobacco. In addition, the concentrations of nitrosamines