delivery of the natural flavors therein. Moreover, other alkaloids naturally present in tobacco, such as nornicotine, may be delivered along with the nicotine.

[0007] Combustion to release nicotine, however, produces a complex mix of additional compounds and particles in the form of smoke. Near combustion heat or high temperature conditions (greater than 150 degrees C) to release nicotine from tobacco requires significant energy and a heat delivery system sufficient in strength to provide the high heat required. The nicotine derived from the tobacco at near combustion temperatures represents a relatively minor portion of that available upon combustion.

[0008] Thus, there is a need for new methods to prepare aerosols for nicotine delivery utilizing tobacco or other plant products. The present disclosure describes in part a method for combining such nicotine with a compound for forming particles comprising the nicotine and/or other alkaloid(s) for delivery in a gaseous stream to generate an aerosol for pulmonary delivery.

DISCLOSURE OF INVENTION

[0009] Brief Summary ~~of the Invention~~

[0009a] In an aspect, there is provided a device for delivering nicotine to a subject, the device comprising a housing, the housing comprising:

a) an inlet and an outlet in communication with each other and adapted so that a gaseous carrier may pass into the housing through the inlet, through the housing and out of the housing through the outlet, the device comprising from inlet to outlet:

b) a first internal area in communication with the inlet, the first internal area comprising either a source of a compound for forming particles comprising nicotine, or a source of a natural product nicotine,

c) a second internal area in communication with the first internal area, the second internal area comprising the source not selected for step b), and

d) optionally, a third internal area in communication with the second internal area and the outlet,

wherein the natural product nicotine source comprises tobacco and an alkaline substance.

[0009b] In another aspect, there is provided a device for delivering nicotine to a subject, the device comprising a housing, the housing comprising:

a) a first inlet, a second inlet and an outlet in communication with each other and adapted so that a first gaseous carrier may pass into the housing through the first inlet, through the housing and out of the housing through the outlet, and a second gaseous carrier may pass into the housing through the second inlet, through the housing and out of the housing through the outlet, the device comprising:

b) a first internal area in communication with the first inlet, the first internal area comprising a source of a compound for forming particles comprising nicotine,

c) a second internal area in communication with the second inlet, the second internal area comprising a natural product nicotine source, and

d) a third internal area in communication with the first and second internal areas and the outlet,

wherein the natural product nicotine source comprises tobacco and an alkaline substance.

[0009c] In yet another aspect, there is provided a method of delivering nicotine to a subject by inhalation, the method comprising the steps of:

a) first placing a gaseous carrier in communication with either a source of a compound for forming particles comprising nicotine, or a natural product nicotine source,

b) second placing the gaseous carrier in communication with the source not selected for step a), and

c) third providing the gaseous carrier comprising the nicotine to a subject,

wherein the natural product nicotine source comprises tobacco and an alkaline substance.

[0009d] In yet another aspect, there is provided a method of delivering nicotine to a subject by inhalation, the method comprising the steps of:

a) placing a first gaseous carrier in communication with a source of a compound for forming particles comprising nicotine,

b) placing a second gaseous carrier in communication with a natural product nicotine source,

c) combining the first and second gaseous carriers to form nicotine particles in a combined gaseous carrier, and

d) providing the combined gaseous carrier comprising the nicotine particles to a subject, wherein the natural product nicotine source comprises tobacco and an alkaline substance.

[0009e] In yet another aspect, there is provided a device as defined above, wherein the natural product nicotine source has been treated to increase the release of volatile nicotine), from the natural product nicotine source, by one or more of the following:

a) Minutizing the natural product nicotine source such as cutting, chopping or grinding;

b) Raising the pH of the natural product nicotine source above neutral pH,

c) Mixing or homogenization of the natural product nicotine source to produce a liquefied suspension, optionally clarified to remove some to all visible particulate matter;

d) Supplementing the natural product nicotine source with nicotine base;

e) Treating the natural product nicotine source with enzymes or detergents to break down the cellulose contained therein in order to render the nicotine more available for release through volatilization or other means;

f) Using molecular sieves or other desiccants to reduce the water content of the natural product nicotine source in order to increase the relative concentration of nicotine; and/or

g) Using high salt content solution to extract nicotine.

[0009f] In yet another aspect, there is provided a method of tobacco product substitution comprising delivering nicotine to a subject by a method as defined above.

[0010] In some embodiments, the disclosure relates to a method of delivering nicotine to a subject by inhalation, the method comprising the steps of:

a) first placing a gaseous carrier in communication with a natural product nicotine source comprising a nicotine,

b) second placing the gaseous carrier in communication with a source of a compound for forming particles comprising nicotine and/or other alkaloid(s), and

c) third providing the gaseous carrier comprising the nicotine to a subject.

[0011] In some embodiments, the disclosure relates to a method of delivering nicotine to a subject by inhalation, the method comprising the steps of:

a) first placing a gaseous carrier in communication with a source of a compound for forming particles comprising nicotine and/or other alkaloid(s),