Isolation of Natural Products from Cranberry or Cranberry Pomace

Cranberry pomace, the low-value waste product from cranberry processing, is unsuitable for animal feed but presents environmental problems when disposed of in soil or landfills. Isolating relevant compounds such as ursolic acid from cranberry waste material at a significantly lower cost than existing products and methods could have a wide range of applications.

Description of the Invention

A novel method extracts ursolic acid, oleanolic acid and other natural compounds from cranberries and/or cranberry processing waste products (e.g., cranberry pomace). Simple and cost effective chemical laboratory techniques isolate individual omega hydroxy fatty acids as well as high yields of high purity ursolic acid, phloionolic acid (9,10,18-trihydroxyoctadecanoic acid) and the 9,10-epoxy-18-hydroxyoctadecanoic acid. The technique, amenable to large scale commercial production, produces commercial quantities of ursolic acid and oleanolic acid without damaging other compounds and uses non-toxic, environmentally-friendly and easily disposable solvents.

Features and Benefits

- Isolates individual ursolic acid, phloionolic acid (9,10,18-trihydroxyoctadecanoic acid) and the 9,10-epoxy-18-hydroxyoctadecanoic acid
- High yields, high purity
- Simple extraction process
- Uses safe, non-toxic, non-carcinogenic solvents that are easy to handle, environmentally friendly, inexpensive, and easily disposable
- Lower cost compared to current methods
- No alkali/acid treatments used
- Extracts value from waste stream
- Environmentally safe waste products

Potential Applications

- Ursolic acid: nutritional and fitness supplements for muscle growth and fat loss
- Oleanolic acid: nutritional supplement for Type 2 diabetics
- Phloionolic acid: chemical precursor for synthesizing ambrettolide (perfume fragrance)
- Nutraceuticals
- Biomedical probes for research
- Chemical and polymer manufacturers; precursor for polymer thermosets
  Extraction of fruit pomaces with similar chemical compositions (e.g., apples, cutin containing plants)
- Possible anti-cancer activity of trans-3-O-p-hydroxycinnamoyl ursolic acid and cis-3-O-p-hydroxycinnamoyl ursolic acid

Technology Status

Prototype development.

Publications

None

IP Status

Patent Pending

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