

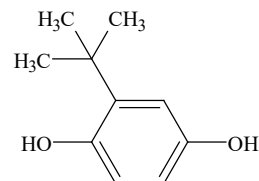
Analysis of Tert Butylhydroquinone (TBHQ) in Foods by HPLC

This application describes the analysis of tert butylhydroquinone (TBHQ). Although TBHQ is not recognized as a food additive, it is used as a phenolic antioxidant in oils and fats in some countries. The test method is described in Food Safety Inspection Notification No. 0303001.

In this application, sample analysis was made using a fluorescence detector in accordance with the test method.

It is also possible to analyze phenolic antioxidants simultaneously using gradient separation.

Structural formula



Tert-Butylhydroquinone

(K.Suzuki)

Structures are created using Chemistry 4-D Draw which is provided By ChemInnovation Software, Inc.

<Representative phenolic antioxidants>

Dibutylhydroxytoluene (BHT)

Dibutylhydroxyanisole (BHA)

Nordihydroguaiaretic acid (NDGA)

2,4,5-trihydroxybutyrophenone (THBP)

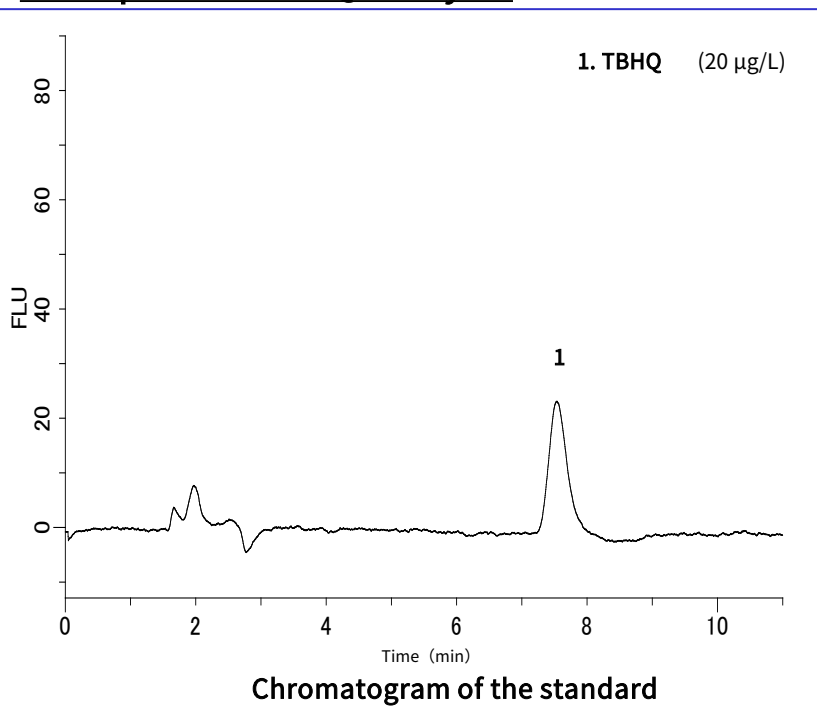
4-Hydroxymethyl-2,6-di-tert butylphenol (HMBP)

Octyl Gallate (OG)

Lauryl gallate (DG)

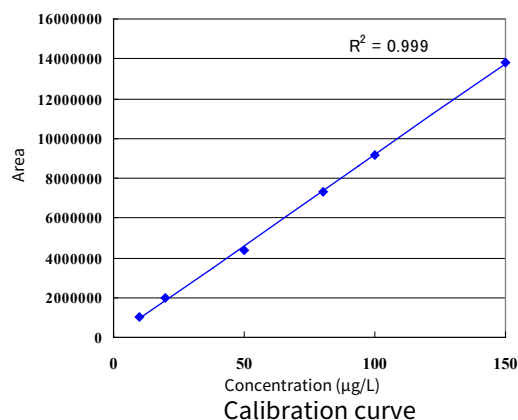
Propyl gallate (PG)

Examples of TBHQ analysis



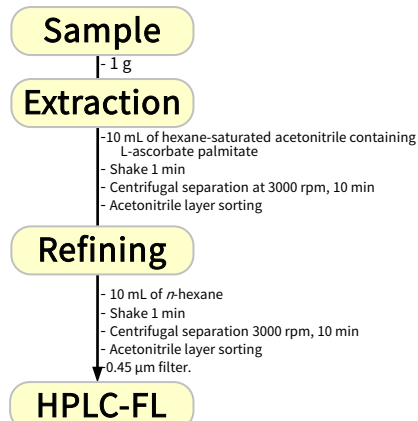
HPLC conditions

| | |
|-------------------------|---|
| Column | :Inertsil ODS-SP (5 µm, 150 x 4.6 mm I.D.) |
| Eluent | : A) CH ₃ CN B) CH ₃ OH C) 5% aqueous acetic acid A/B/C = 20/20/60 v/v/v, 1.0 |
| mL/min | |
| Temperature | :40 °C |
| Detector | : FL Ex 293 nm Em 332 nm |
| Injection volume | : 10 µL |

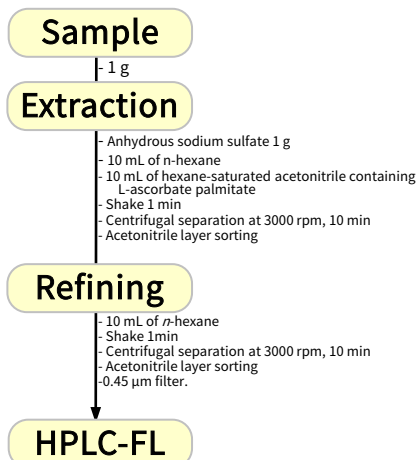


Example of pretreatment

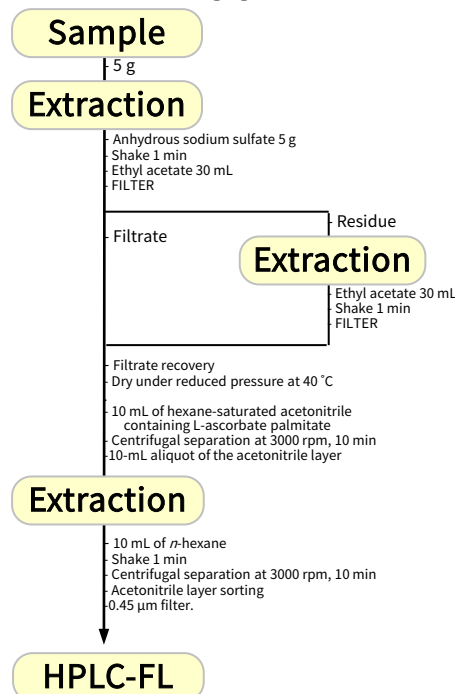
Vegetable oils



Butter

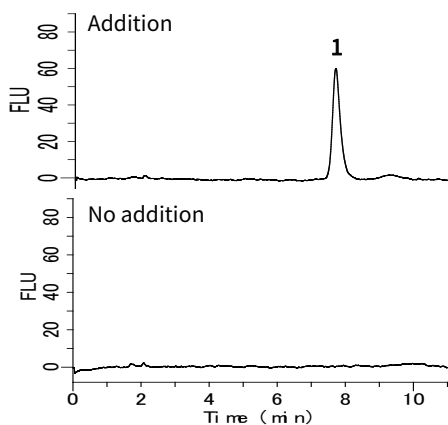


Chewing gum

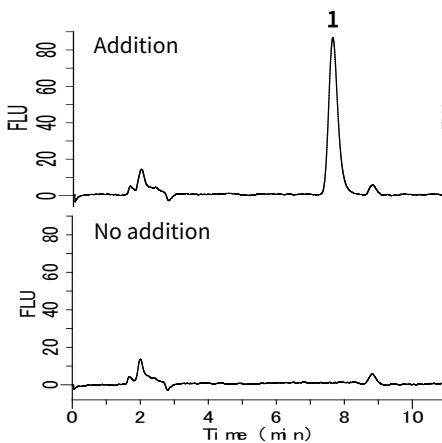


1. TBHQ (20 µg/L)

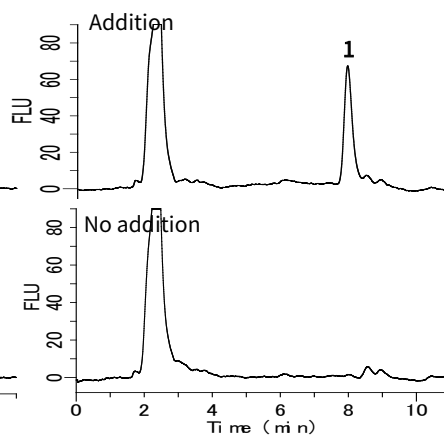
Vegetable oil extract



Butter extract



Chewing gum extract



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