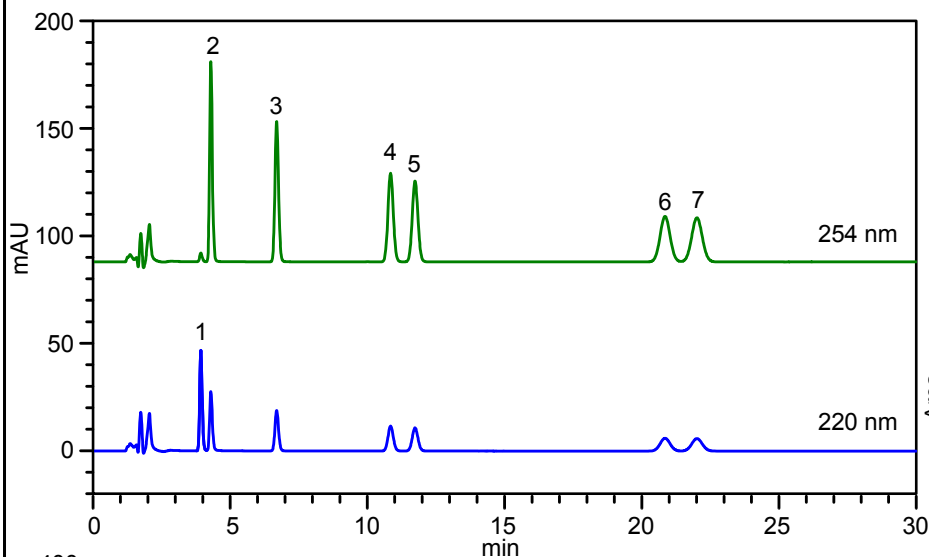
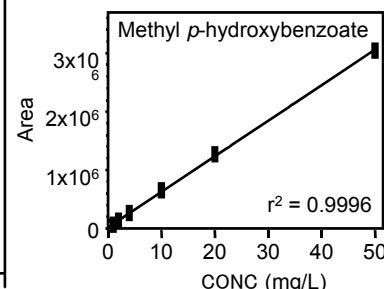
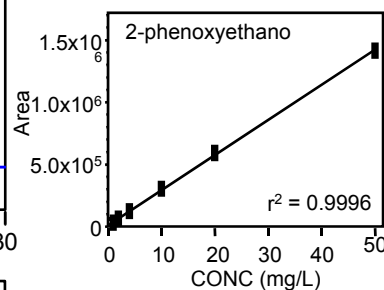


Analysis of Preservative Standards

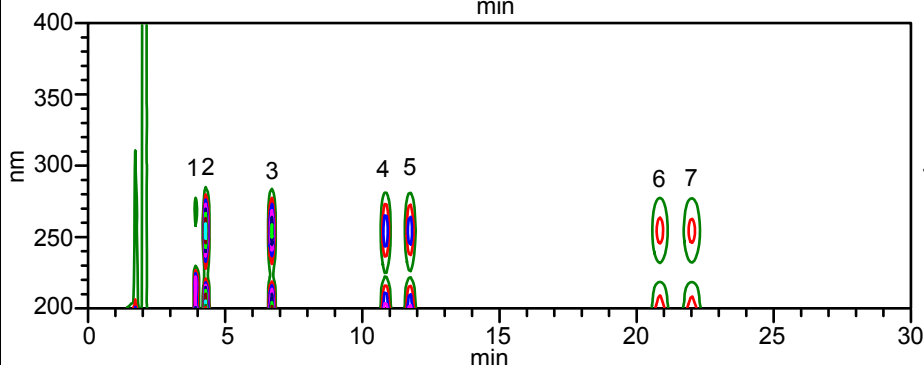
Paraben family is the collective term used for paraoxy-benzoic acid ester (*p*-hydroxybenzoate ester) and is not very harmful to human bodies. As parabens have antiseptic and antifungal effects, they are used in medicines, cosmetics, and food products as preservatives. Phenoxyethanol is one of the components used in cosmetics as an antiseptic sterilizing agent. As phenoxyethanol is found as a naturally occurring substance in green tea, etc., its toxicity is considered to be low compared with parabens. The addition amount of phenoxyethanol can be reduced by using it alongside with parabens and thus, the phenoxyethanol is often used concomitantly with parabens in cosmetics. An example of the analysis in which phenoxyethanol and parabens were analyzed at the same time is introduced here. The compounds were analyzed by DAD at the most suitable wavelength for each of them, 220 nm for phenoxyethanol and 254 nm for parabens.



1. 2-Phenoxyethanol
2. Methyl *p*-hydroxybenzoate
3. Ethyl *p*-hydroxybenzoate
4. Isopropyl *p*-hydroxybenzoate
5. Propyl *p*-hydroxybenzoate
6. Isobutyl *p*-hydroxybenzoate
7. Butyl *p*-hydroxybenzoate



[The range of the calibration curve is 0.1 - 50 mg/L]



| | | | |
|------------------|---|--|----------------------|
| SAMPLE | 10 μ L of Std. Soln. (10 mg/L each) * | PRESSURE | |
| PACKING MATERIAL | HITACHI LaChrom C18 (5 μ m) | TEMPERATURE | 40°C |
| COLUMN SIZE | 4.6 mm I.D. \times 150 mm (P/N : 891-5050) | SEPARATION METHOD | Partition/Adsorption |
| ELUENT | CH ₃ CN / 0.1 % H ₃ PO ₄ = 35 / 65 (v/v) | DETECTOR | DAD 220, 254 nm |
| | | INSTRUMENTS Chromaster 5110 (Pump), Chromaster 5210 (Autosampler) Chromaster 5310 (Column Oven), Chromaster 5430 (Diode Array Detector) | |
| FLOW RATE | 1.0 mL/min | | |

NOTE * The standard sample was prepared by using methanol.

[Reference] Report No.47 by Osaka Prefectural Institute of Public Health, 2009

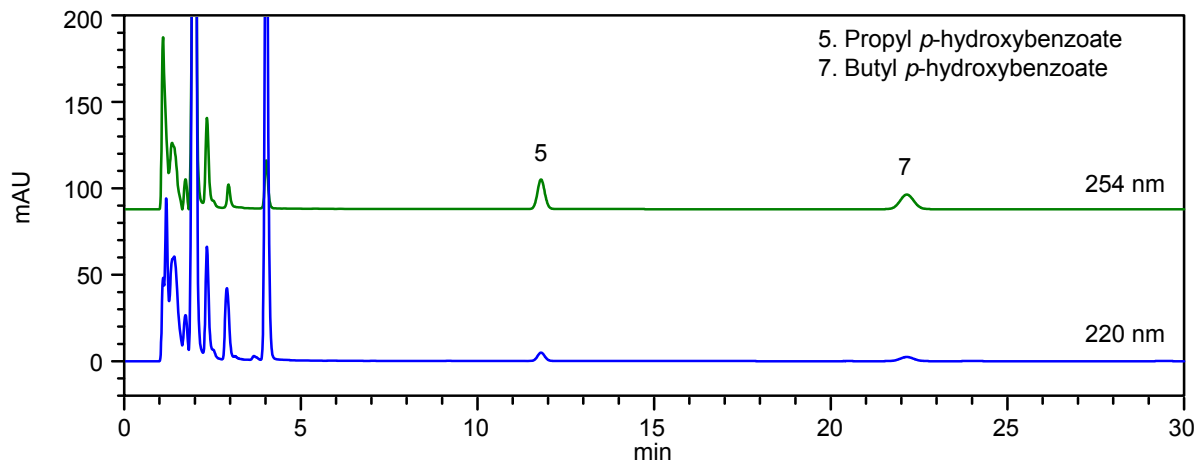
KEY WORDS

Bio/Medical Science/Food/Pharmaceutical, Cosmetic, Medicine/Pharmaceutical, Medical Science/Pharmaceutical Science, Antiseptic, Paraben, Phenoxyethanol, Supplement Drink, Mouth Wash, Cosmetic, Skin Lotion, Lotion, Hand Cream, DAD, Health, Chromaster, LaChrom C18, Partition/Adsorption

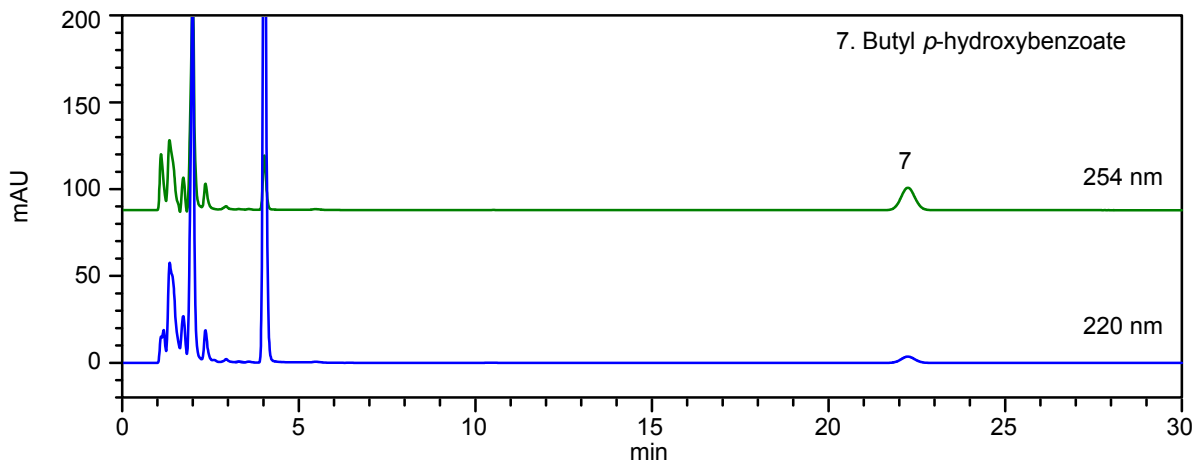
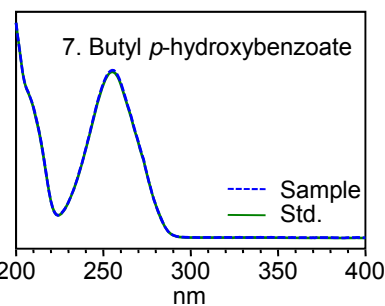
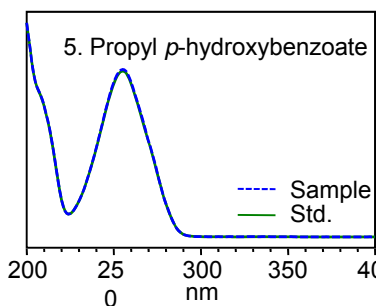
High Performance Liquid
Chromatograph (HPLC)

Sheet No. LC110001-01

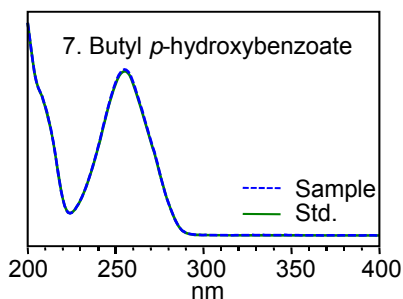
Analyses of Preservatives in Supplement Drinks



[Chromatogram of Supplement Drink (A)]



[Chromatogram of Supplement Drink (B)]

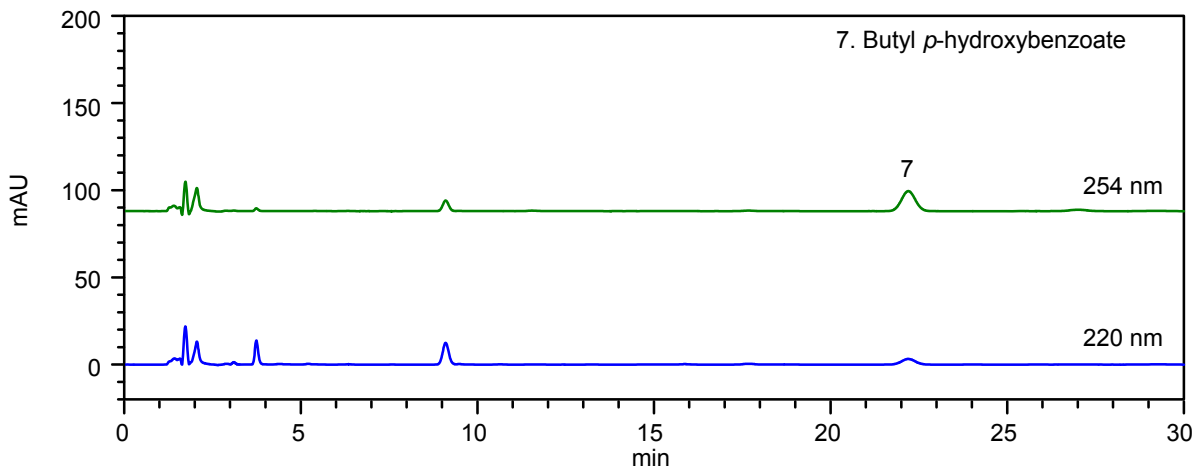


[Preparation Method for Supplement Drink]
The sample was diluted to 10 times with methanol and filtered through a 0.2 μ m filter.

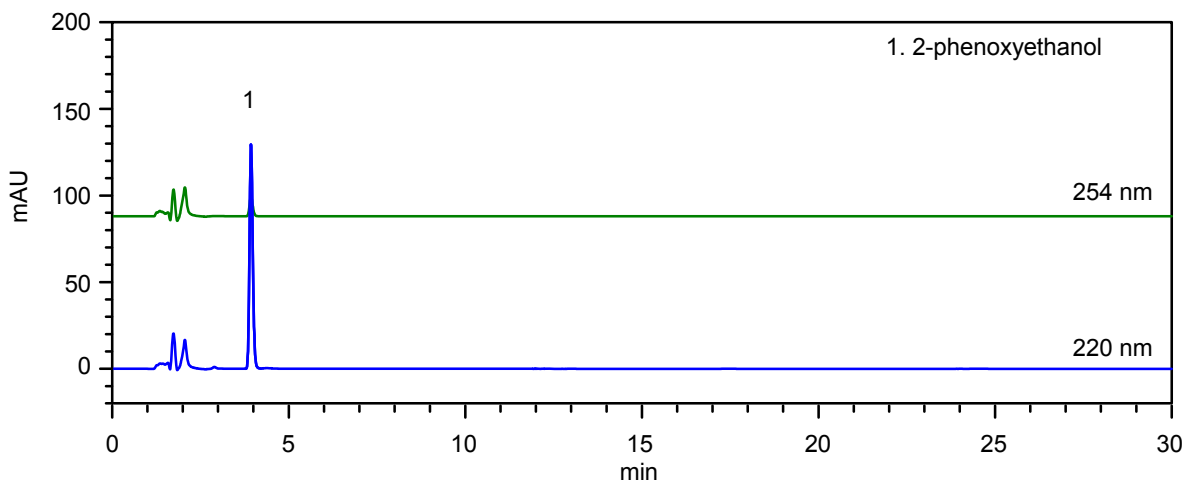
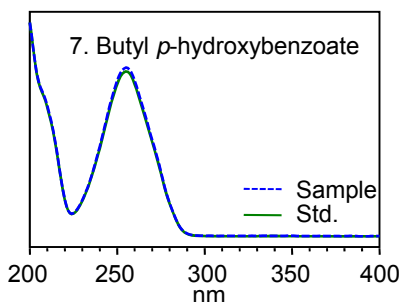
High Performance Liquid Chromatograph (HPLC)

Sheet No. LC110001-02

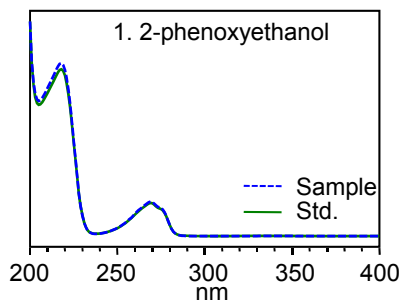
Analyses of Preservatives in Mouth Wash and Lotion



[Chromatogram of Mouth Wash]



[Chromatogram of Lotion]

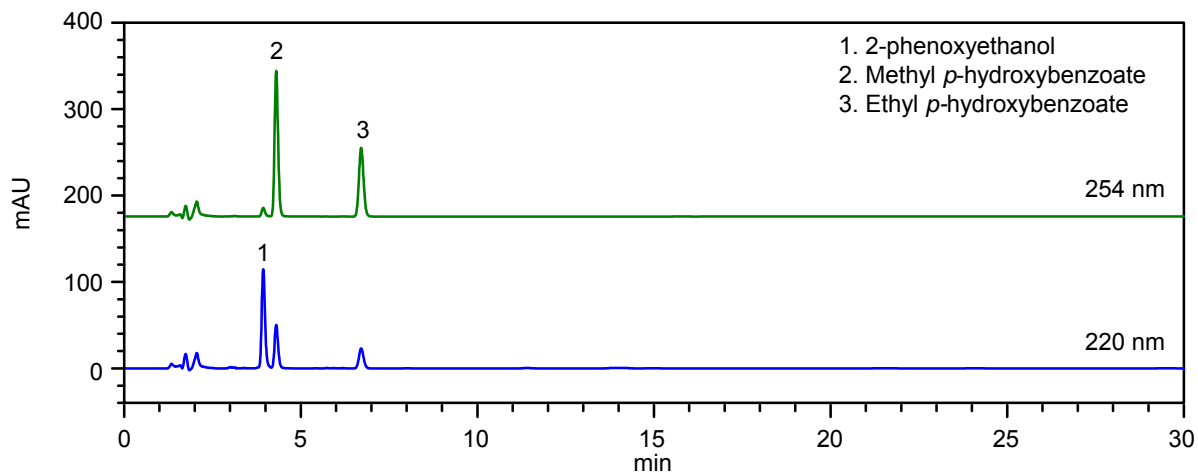


[Preparation Method for Mouth Wash and Lotion]
The sample was diluted to 10 times with methanol and filtered through a 0.2 μ m filter.

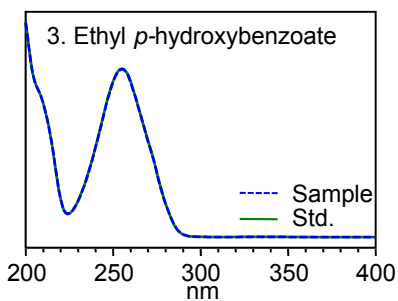
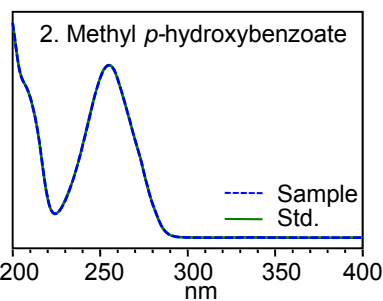
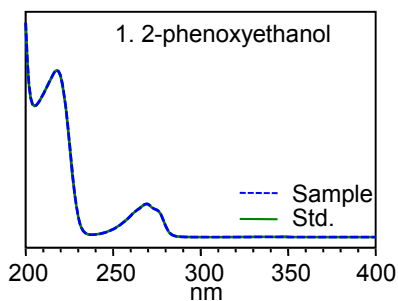
High Performance Liquid
Chromatograph (HPLC)

Sheet No. LC110001-03

Analysis of Preservatives in Skin Lotion



[Chromatogram of Skin Lotion]



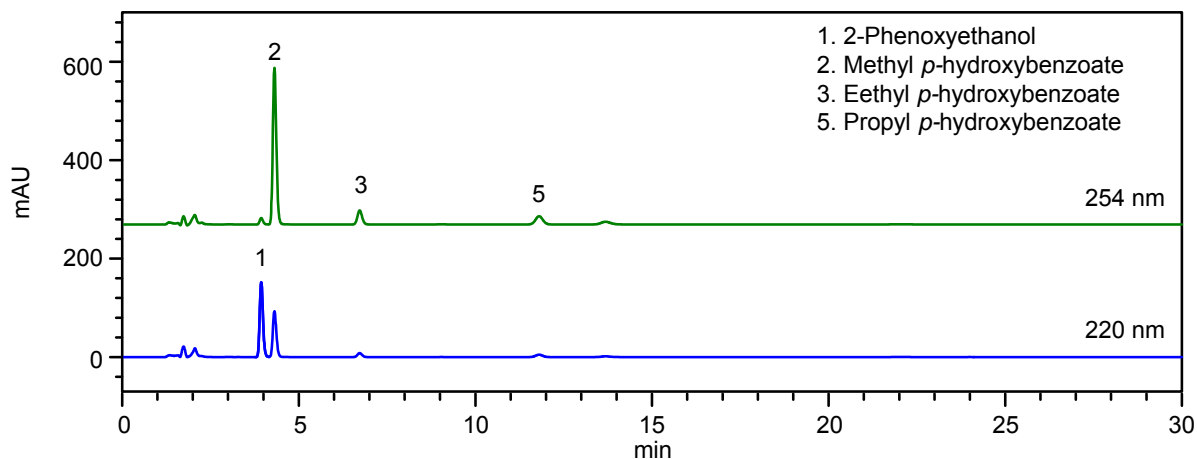
[Preparation Method for Skin Lotion]

Sample Weigh 0.1 g
| ← Make up the volume to 10 mL with methanol
Filtration Pore Size 0.2 μ m
↓
Sample for injection

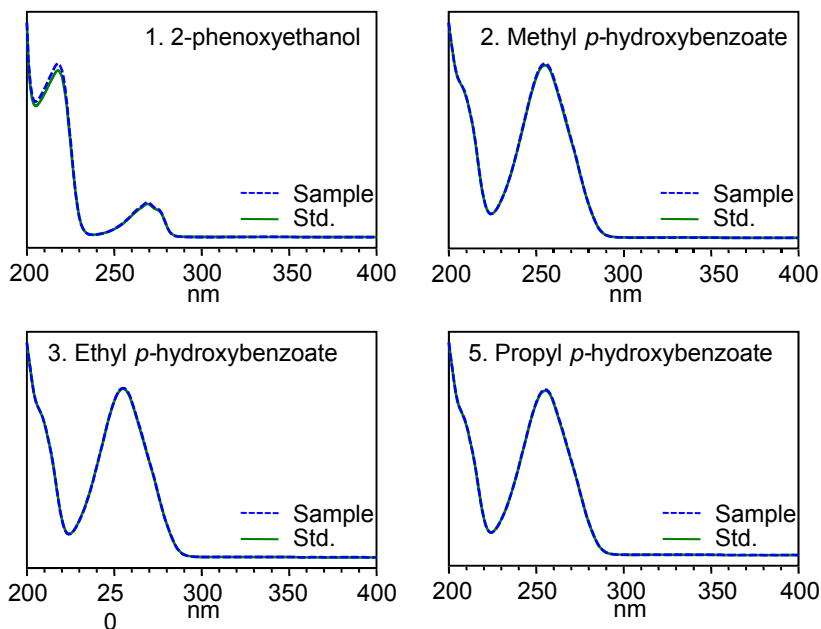
High Performance Liquid
Chromatograph (HPLC)

Sheet No. LC110001-04

Analysis of Preservatives in Hand Cream



[Chromatogram of Hand Cream]



[Preparation Method for Hand Cream]

```

Sample  Weigh 0.1 g
  |
  | ← Make up the volume to 10 mL with methanol
  |
Filtration  Pore Size 0.2 μm
  |
  |
Sample for injection
    
```

High Performance Liquid
Chromatograph (HPLC)

Sheet No. LC110001-05