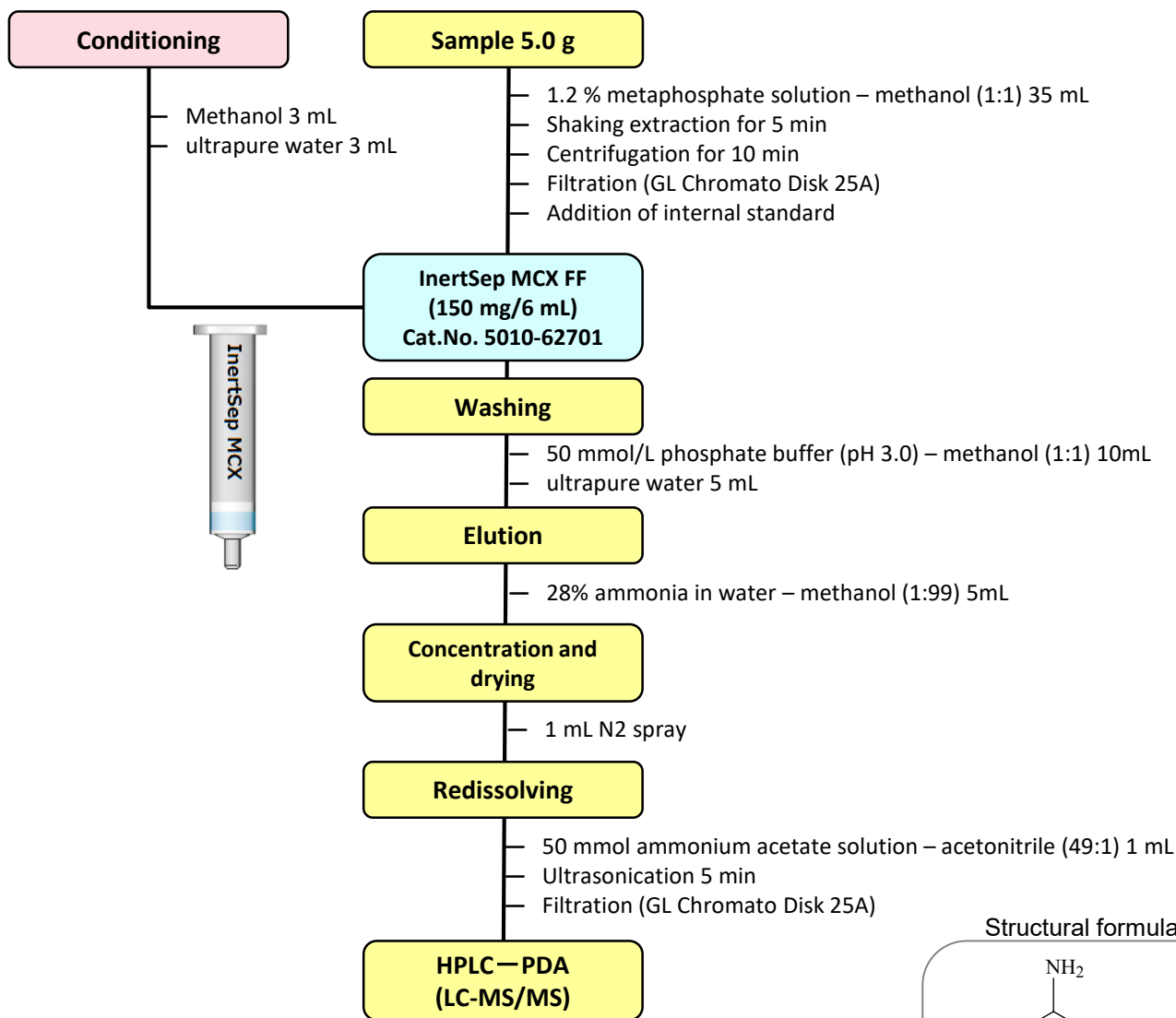


# Analysis of Cyromazine in Livestock Products

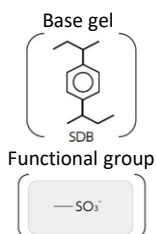
Cyromazine is triazine based molecule that is used as an insect growth inhibitor for the protection of livestock and poultry houses. Standard values have been set for its use in veterinary drugs, and a notification method using HPLC has been issued. In this study, extraction and purification were performed with a mixed-mode polymer SPE (InertSep MCX FF) using a method based on the notification test method from the Ministry of Health, Labor and Welfare and literature examples\*, and analysis was performed using HPLC (detection at UV 240nm) and LC-MS/MS.

\*Tokyo Metropolitan Institute of Public Health Annual Report No.57 (2006)

## 1. SPE Pretreatment Flow



### 【InertSep MCX FF】

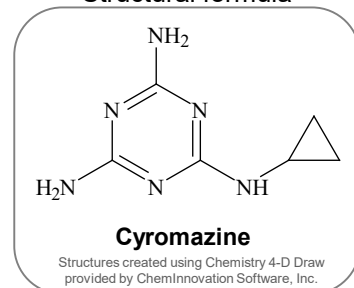


InertSep MCX FF is a styrene-divinylbenzene polymer (SDB) solid phase modified with a strong cation exchange group.

By exerting both reverse phase and cation exchange actions, basic compounds can be strongly retained.

Since the particle size is up to 70  $\mu\text{m}$ , it is ideal for biological sample extracts.

### Structural formula

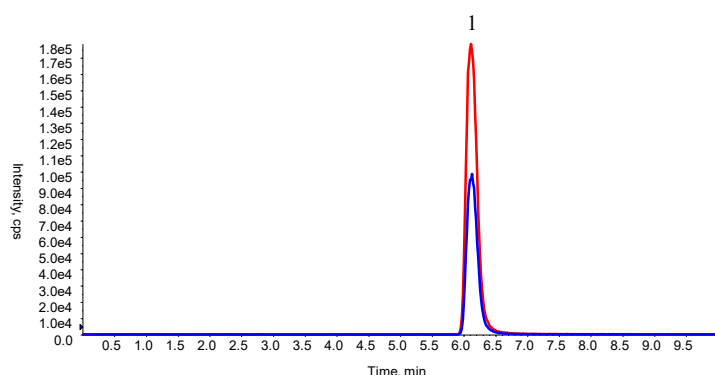
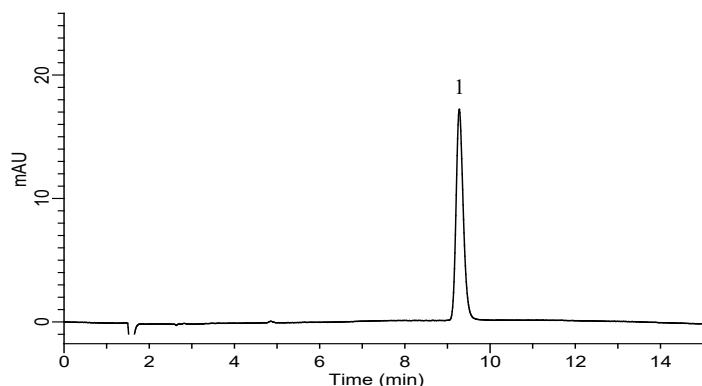


Recovery test with spiked extract (milk, 0.05 mg / kg, n = 2)

Rec (%)	HPLC-PDA	LC-MS/MS
Milk	80.1	78.6

## 2. Measurement conditions

### Standard Solution



### HPLC conditions

#### <HPLC-PDA>

**Column** : InertSustain C18  
 (3  $\mu$ m, 150 x 4.6 mm I.D.)  
**Column Cat. No.** : 5020-07445  
**Eluent** : A) 50 mmol/L CH<sub>3</sub>COONH<sub>4</sub>  
 B) CH<sub>3</sub>CN  
 A/B=49/1, v/v  
**Flow rate** : 1.0 mL/min  
**Col. Temp.** : 40 °C  
**Detection** : PDA 240 nm  
**Injection Vol.** : 50  $\mu$ L  
**Sample** : 1. Cyromazine 1.75 mg/L

#### <LC-MS/MS>

**Column** : InertSustain C18  
 (3  $\mu$ m, 150 x 2.1 mm I.D.)  
**Column Cat. No.** : 5020-14355  
**Eluent** : A) 50 mmol/L CH<sub>3</sub>COONH<sub>4</sub>  
 B) CH<sub>3</sub>CN  
 A/B=49/1, v/v  
**Flow rate** : 0.4 mL/min  
**Col. Temp.** : 40 °C  
**Detection** : LC/MS/MS  
 (4000QTRAP : ESI, Positive, SRM)  
**Injection Vol.** : 10  $\mu$ L  
**Sample** : 1. Cyromazine 1.75 mg/L  
 Q1 / Q3 = 167.0 / 68.0 (Quantifier ion)  
 167.0 / 85.0 (Qualifier ion)

## 3. Applicability to other samples

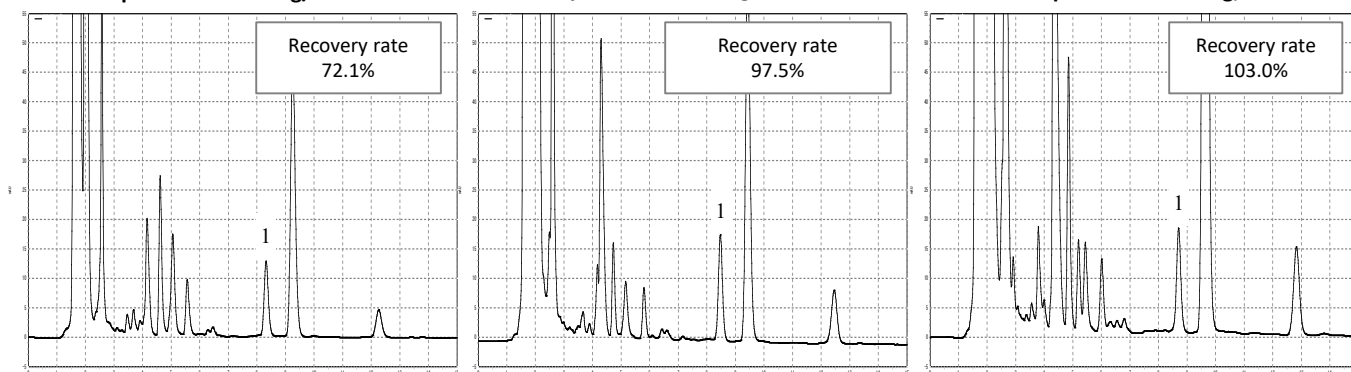
Depending on the sample matrix, sufficient recovery of the target components may not be possible. If the matrix affects recovery, increasing the loading amount on the MCX cartridge may improve the recovery rate. However, if the loading amount is increased, peaks from interfering components will also increase, so it is important to select an appropriate loading amount suitable for the matrix.

### <Other samples: chicken>

InertSep MCX FF 150 mg/6 mL

InertSep MCX FF 250 mg/6 mL

InertSep MCX FF 500 mg/6 mL



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