

Simultaneous Analysis of Sulfa Drugs

Sulfa drugs are synthetic antibacterial agents that are widely used in the animal industry. On November 29, 2005, the Ministry of Health, Labor and Welfare of Japan issued the "Test methods for residual pesticides in foods, feed additives and veterinary drug components (partial revision)" (Shokuan No. 1129002). According to this document, many sulfa drugs are designated as compounds that require testing and standard values have been established.

Here, as a mobile phase, formic acid and methanol were used and different sulfa drugs were analyzed simultaneously. Using a TSKgel ODS-100V, 3µm column it is possible to obtain a chromatogram with favorable peaks for highly polar substances such as sulfaguanidine.

Figure 1. Chromatogram for sulfa drugs (each: 2.5mg/L)

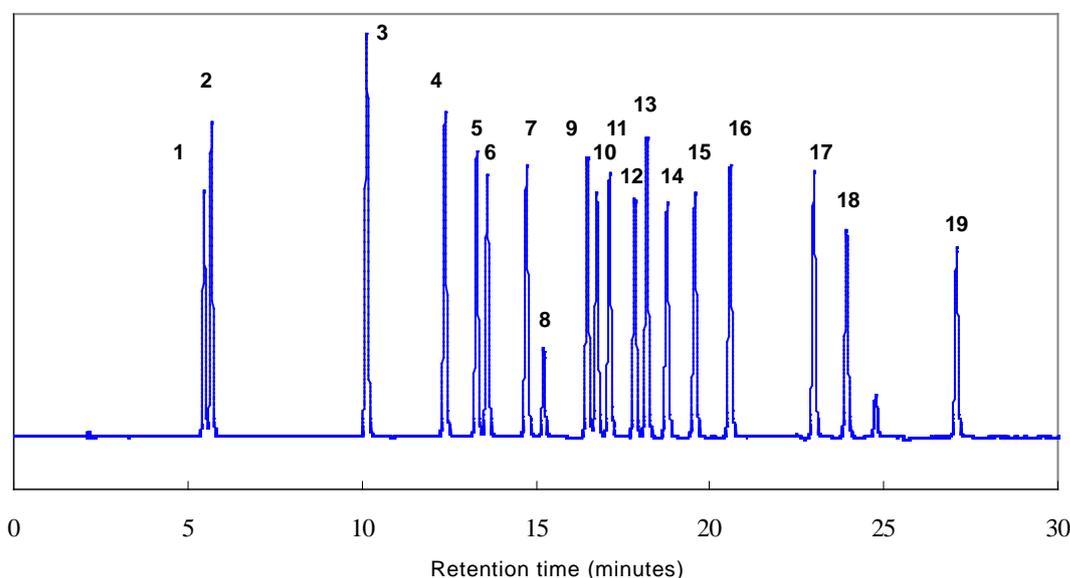


Table 1. Conditions

| | | |
|-----------------|---|----------------------------|
| Column: | TSKgel ODS-100V, 3µm, 4.6mm ID x 15cm | |
| Mobile phase: | A: 0.1% formic acid in water | |
| | B: 0.1% formic acid in methanol | |
| Gradient: | 0min (0%B)→ 30min (70%B) →32min (70%B)→ 33min (0%B) | |
| Flow rate: | 1.0mL/min | |
| Temperature: | 40°C | |
| Injection vol.: | 10µL | |
| Samples: | 1. sulfaguanidine | 11. sulfamethoxypyridazine |
| | 2. sulfanilamide | 12. sulfachloropyridazine |
| | 3. sulfacetamide | 13. sulfamethoxazole |
| | 4. sulfadiazine | 14. sulfamonomethoxine |
| | 5. sulfathiazole | 15. sulfadoxine |
| | 6. sulfapyridine | 16. sulfabenzamide |
| | 7. sulfamerazine | 17. sulfadimethoxine |
| | 8. trimethoprim | 18. sulfaquinoxaline |
| | 9. sulfamethizole | 19. sulfanitran |
| | 10. sulfadimidin | |



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