

化学情報協会
情報事業部
マーケティンググループ

CAS Analytical Methods の活用方法

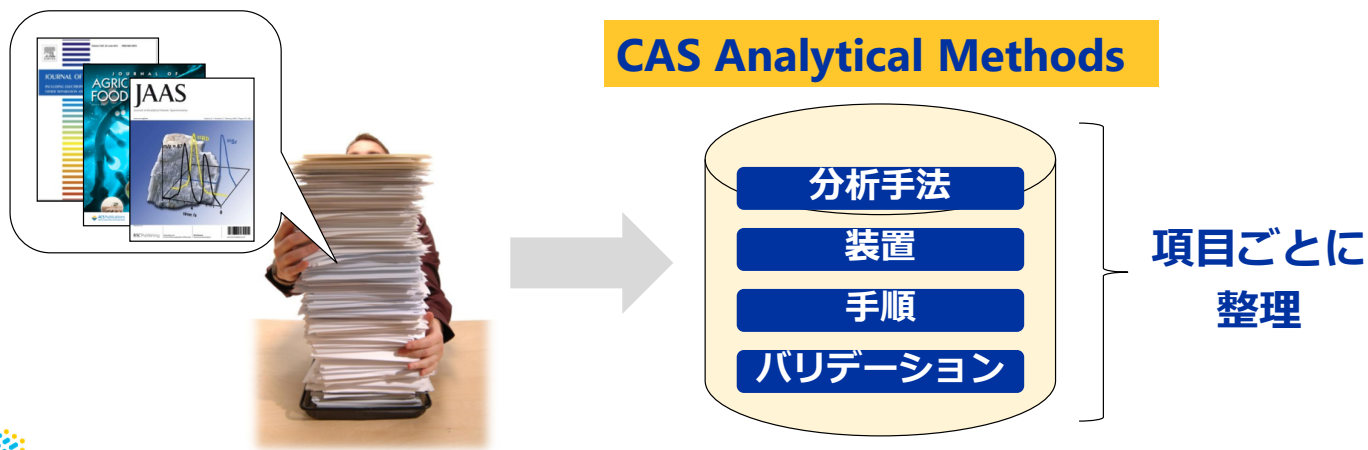
2021 年 12 月



CAS Analytical Methods

CAS Analytical Methods 特長

CAS が保有する文献コレクションから情報を抽出し、
人手でデータベース化



CAS Analytical Methods 収録内容

収録源	雑誌論文 例：Food Chemistry, Journal of Chromatography A,B, Journal of Agricultural and Food Chemistry, Talanta, Abalytica Chemica Acta
収録分野	医薬，農学，化学分野を中心とし，その他周辺分野も一部収録
レコード構成	分析手法単位
収録期間	2000 年～

CAS Analytical Methods 収録内容

分析手法が主題でない雑誌論文であっても、本文中に分析手法の情報があればレコードを作成

CAS Analytical Methods の収録分野カテゴリー

Agricultural Applications / Analysis	Fuels / Geology / Biofuels	Pharmacology / Toxicology
Bioassays	Historical Analysis / Dating	Polymer Analysis
Biomolecule Isolation	Miscellaneous	Water Analysis
Environmental Analysis	Organic Compound Analysis	
Food Analysis	Organometallics / Inorganics	

様々な分野の分析手法をカバー

ケース①

CAS SciFinderⁿ で分析手法の検索してみたが
望むような結果が得られない。



物質の分析手法はどのように
検索すれば良いのだろう...

ケース①



CAS Analytical Methods なら簡単に検索できます。

CAS Analytical Methods 特長

分析機器や条件，手順，バリデーションデータなど分析に必要な詳細情報を収録

Method Detail (1 of 73)

Analysis of Valsartan in Pharmaceutical tablets by Reversed-phase HPLC

CAS No. 1-101-CAS-0001

Method Category: Pharmaceutical Analysis

Technique: HPLC

Materials: Valsartan, Hydrochlorothiazide

Pharmaceutical tablets: material

Injector (20 µl fixed capacity): material

KR-5 C₁₈ column (250 mm × 4.6 mm, 5 µm): material

Cellulose acetate filter (0.45 µm): material

Membrane filter (0.2 µm): material

Source: Development of RP-HPLC method for estimation of Valsartan and hydrochlorothiazide in tablets. Vahel, M.; Shyamkumar, B.; Cylma, M.; Reema, N. International Journal of Pharmaceutical Sciences and Nanotechnology (2013), 6 (4), 2240-2244. Pharma Book Syndicate CODEN: IJPSNN | ISSN: 09743278

Abstract: A simple, efficient and reproducible reversed phase high performance liquid chromatography (RP-HPLC) method was developed for the simultaneous estimation of Valsartan and hydrochlorothiazide in tablets. A column having 250 × 4.6 mm i.d. µm with mobile phase composed of acetonitrile and 0.1% phosphoric acid in water (80:20 v/v) was used. The detection was monitored at 232 nm. The retention times of Valsartan and hydrochlorothiazide were 10.15 and 3.78 min, respectively. The linearity dynamic range of Valsartan and hydrochlorothiazide was 1.1-100 µg/ml and 0.4-45 µg/ml, respectively. The method was validated for accuracy, precision, and robustness. The developed method was found to be suitable for the simultaneous estimation of Valsartan and hydrochlorothiazide in bulk and in tablets.

Equipment Used

HPLC system, JASCO

Electronic weighing balance, Ohaus, N1111

Digital pH meter, Analytical Lab Scientific Instrument

Ultrasonicator, Trans-Sonic

Conditions

Chromatographic

Injection volume, 20 µl; Mobile phase, potassium dihydrogen phosphate buffer (pH 3.0) and acetonitrile (80:20 v/v); Flow rate, 1.0 mL/min; Column temperature, 30 °C; Wavelength, 232 nm

Instructions

Preparation of mobile phase

1. Prepare potassium dihydrogen phosphate buffer (pH 3.0) by dissolving 0.2 g of potassium dihydrogen phosphate in 100 mL of water.

2. Mix 50 mL of potassium dihydrogen phosphate buffer and 50 mL of acetonitrile to get standard stock solution.

3. Filter the mobile phase through 0.2 µm Supelco filter.

4. Degass the mobile phase through ultrasonicator.

Sample Preparation

1. Weigh 100 mg of Valsartan (Valsartan) equivalent to 12.5 mg of Valsartan.

2. Transfer carefully to 100 mL volumetric flask.

3. Dissolve in methanol to get standard stock solution.

4. Dilute 1 mL of standard stock solution to 10 mL with methanol to get final concentration of 100 µg/mL of Valsartan.

5. Dissolve the solution with water to get concentration of 20 - 150 µg/mL of Valsartan.

Standard solution of Hydrochlorothiazide

1. Weigh 25 mg of standard HCTZ (Hydrochlorothiazide) and transfer to a 25 mL volumetric flask.

2. Dissolve in methanol and dilute with methanol.

3. Dilute 1 mL of the solution to 10 mL with methanol to get final concentration of 100 µg/mL of HCTZ.

4. Dilute the solution with water to get concentration of 5 - 45 µg/mL of HCTZ.

Preparation of mix standard solution

1. Weigh 25 mg of standard VAL and 25 mg of standard HCTZ and transfer to a 25 mL volumetric flask.

2. Dissolve in methanol and dilute with methanol.

3. Dilute 1 mL of the solution to 10 mL with methanol to get final concentration of 100 µg/mL of VAL and 100 µg/mL of HCTZ.

4. Dilute the solution with water to get concentration of 20 - 150 µg/mL of VAL and 5 - 45 µg/mL of HCTZ.

Preparation of test solution

1. Weigh 25 mg of standard VAL and 25 mg of standard HCTZ and transfer to a 25 mL volumetric flask.

2. Dissolve in methanol and dilute with methanol.

3. Dilute 1 mL of the solution to 10 mL with methanol to get final concentration of 100 µg/mL of VAL and 100 µg/mL of HCTZ.

4. Dilute the solution with water to get concentration of 20 - 150 µg/mL of VAL and 5 - 45 µg/mL of HCTZ.

Validation

Linearity Range

20 - 150 µg/mL, Valsartan

4 - 45 µg/mL, Hydrochlorothiazide

Limit of Detection

1.1 µg/mL, Valsartan

0.40 µg/mL, Hydrochlorothiazide

Limit of Quantitation

3.3 µg/mL, Valsartan

1.47 µg/mL, Hydrochlorothiazide

Accuracy

102.01% (0.74 SD), 101.09% (0.056 SD), 99.69% (0.060 SD) (Recovery) for 80, 100, 120% added respectively, Valsartan

98.35% (0.01 SD), 98.35% (0.04 SD), 99.16% (0.75 SD) (Recovery) for 80, 100, 120% added respectively, Hydrochlorothiazide

Precision

0.8466% RSD (Intra day), 0.148% RSD (Inter day), Valsartan

1.150% RSD (Intra day), 0.843% RSD (Inter day), Hydrochlorothiazide

Retention Time

10.15 min, Valsartan

3.78 min, Hydrochlorothiazide

分析対象，マトリックスなど

分析機器

分析条件

詳細な分析手法

バリデーションデータ

文献情報

植物の葉から天然物を抽出する方法の検索

まとめ

CAS Analytical Methods

- 原文献を取り寄せなくても、詳しい分析手法を確認できる
- 複数の分析手法の比較が容易
- カテゴリーからの検索ができる