

CAS ANALYTICAL METHODS™

**BETWEEN TARGET
AND FOCUS
THERE IS
ILLUMINATION**

Save time with access
to easy-to-read methods

Analytical scientists are a critical component of development

CAS Analytical Methods makes it simple to locate, compare, and understand analytical methods from top journals and patents.

10 years and \$3-5B

Average development time and cost of a new drug in pharma^{1,2}

2-7 years

Average development time of a product line extension in specialty chemicals³



CAS Analytic Methods is the solution that propels your analysis

For more than 100 years, CAS Solutions has provided the tools and expertise that scientists rely on. This hindsight, insight, and foresight inspire everyday breakthroughs and life-changing science.

CAS monitors the market addressing common obstacles, such as:

– Disparate Data Sources

Spend time searching online, using expensive consultants, and scouring primary literature

– Insufficient Content

Lack of methods within primary literature or limited resources

– Time Pressure

Understanding there is little time allotted to produce a safe and effective product

The screenshot displays the CAS Analytic Methods web application interface. At the top, there is a navigation bar with the CAS logo, 'Analytical Methods' text, and a search bar containing the text 'Browse: Active Pharmaceutical Ingredient and Metabolite Analysis'. To the right of the search bar are icons for search, favorites, and user profile. Below the navigation bar, the main content area is divided into a left sidebar and a main results pane. The sidebar contains a 'Return to Home' link and two expandable sections: 'Analyte' and 'Matrix'. The 'Analyte' section lists various compounds with their respective counts, such as Acetaminophen (2380), Flavonoids (2108), Phenols (2057), Ciprofloxacin (1359), and Ibuprofen (1231). The 'Matrix' section lists various sample types, such as Pharmaceutical tablets (22680), Blood plasma (13818), Urine (7481), Blood serum (4299), and Pharmaceutical capsules (3762). The main results pane shows a search result for 'Analysis of (-)-Tetracycline in Urine by HPLC UV detectors' with a CAS MN of 1-101-CAS-468487. The result includes a 'View Details & Instructions' button and an 'Add to Compare' button. The details section lists the following information: Analyte: (-)-Tetracycline; Chlortetracycline; Oxytetracycline; Matrix: Urine; Other Materials: Reagent: Sodium hexanoate; Zinc sulfate; Hydrochloric acid; Methanol; Material: 0.45 µm membrane filter; SUPELCO C18 column (250 mm x 4.6 mm, 5 µm); Hydrophobic poly(vinylidene fluoride-co-tetrafluoroethylene) (PVDF-CO-PTFE) membrane; Method Category: Active Pharmaceutical Ingredient and Metabolite Analysis; Technique: Liquid-liquid microextraction; Atmospheric precipitation; HPLC UV detectors; Equipment Used: Digital stirrer; HPLC-UV system; Source: Stir membrane liquid phase microextraction of tetracyclines using switchable hydrophilicity solvents followed by high-performance liquid chromatography; Lebedinets, Sofya; Vakh, Christina; Cherkashina, Ksenya; Pochivalov, Aleksei; Moskvina, Leonid; Bulatov, Andrey; Journal of Chromatography A (2020), 1615, -. Elsevier B.V.

CAS Analytical Methods provides a single resource during analysis

CAS Analytical Methods addresses the challenges that analytical scientists face, such as time pressure, lack of process, lack of method details in literature, and limited resources. With this solution, it is easy to browse and find methods that may have not existed in or are buried in primary literature.

It allows analytical scientists to tap into creative problem-solving while being comprehensive to engage a variety of work that you face. The step-by-step methods help shorten research time, allowing projects to move swiftly toward completion.

Fast

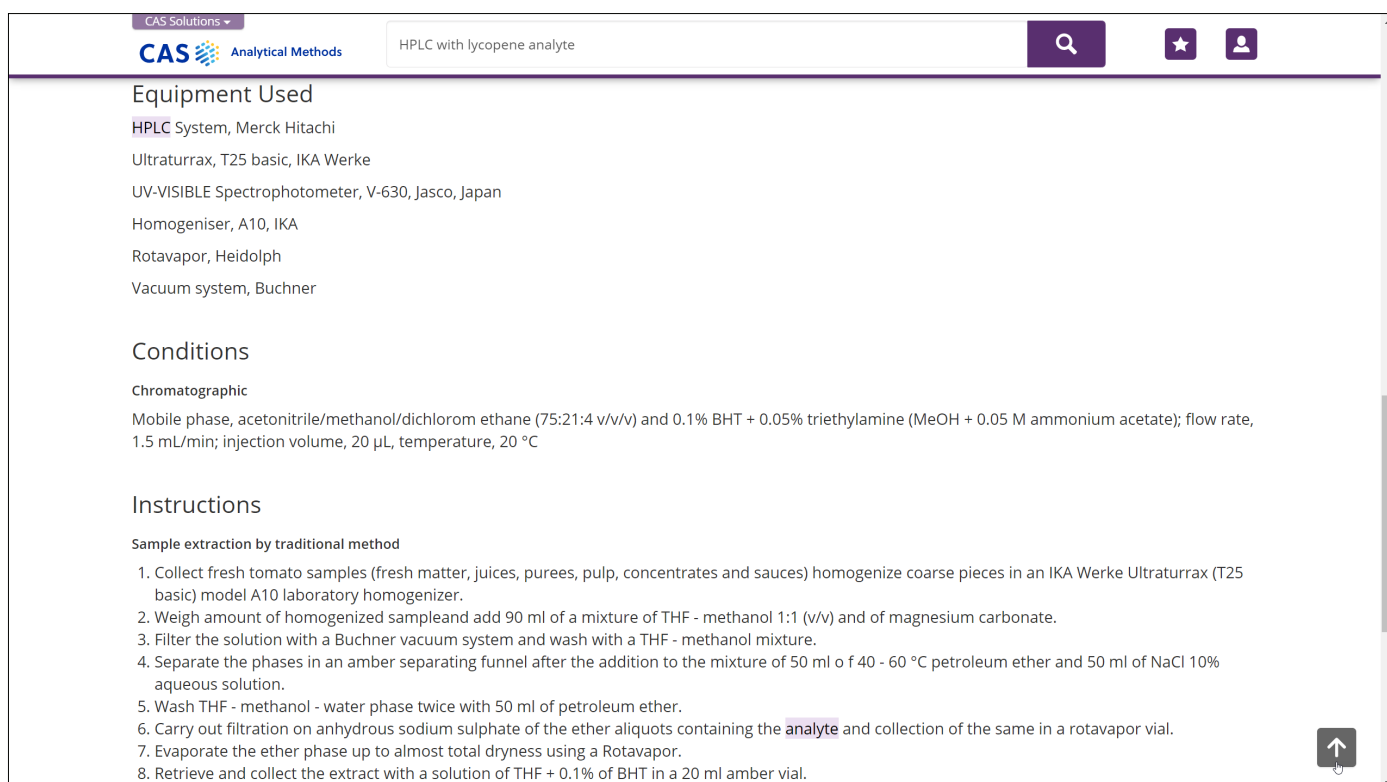
77% of surveyed organizations said that shorter time is most important to them when using CAS Analytical Methods¹.

Efficient

CAS Analytical Methods brings together information from multiple sources into a single solution that increases efficiency and effectiveness.

Comprehensive

72% of surveyed organizations said that the step-by-step methods are crucial to their work.²



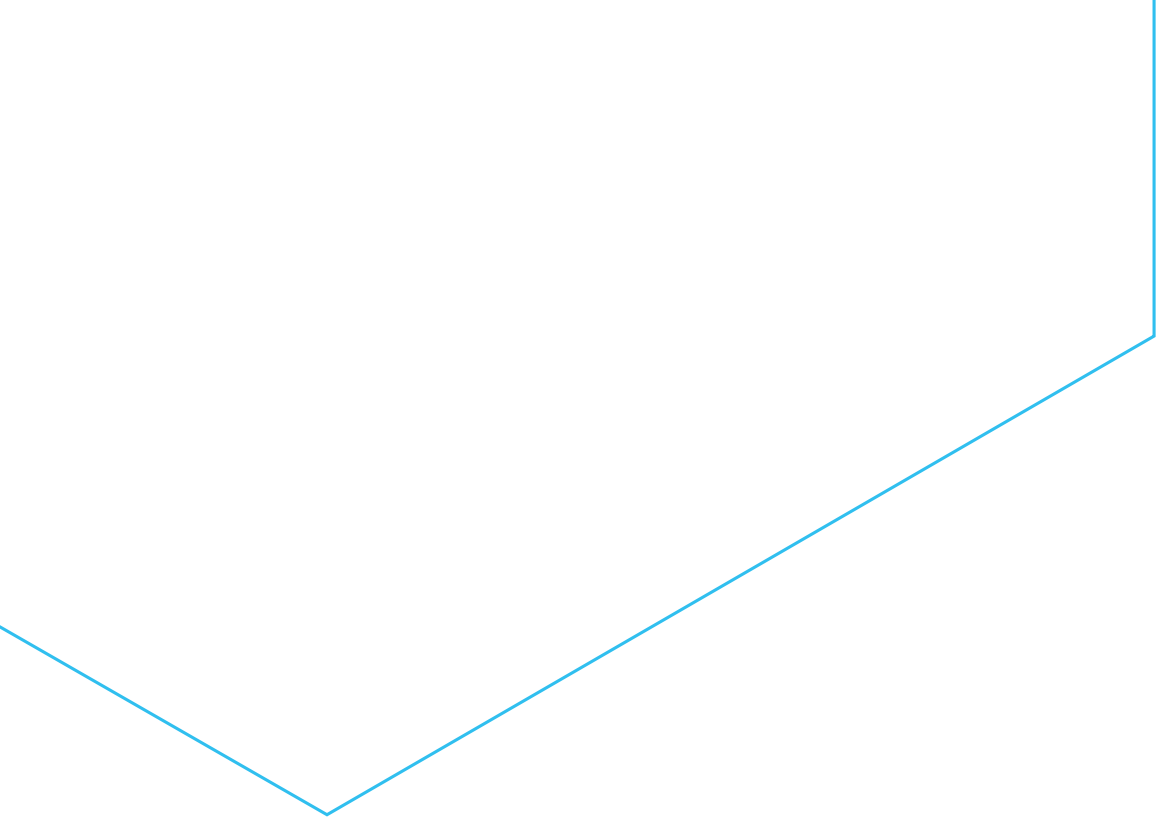
The screenshot displays the CAS Analytical Methods web interface. At the top, there is a navigation bar with the CAS logo and 'Analytical Methods' text. A search bar contains the text 'HPLC with lycopene analyte'. To the right of the search bar are icons for search, favorites, and user profile. Below the search bar, the page is divided into three main sections: 'Equipment Used', 'Conditions', and 'Instructions'. The 'Equipment Used' section lists: HPLC System, Merck Hitachi; Ultraturrax, T25 basic, IKA Werke; UV-VISIBLE Spectrophotometer, V-630, Jasco, Japan; Homogeniser, A10, IKA; Rotavapor, Heidolph; and Vacuum system, Buchner. The 'Conditions' section is titled 'Chromatographic' and lists: Mobile phase, acetonitrile/methanol/dichloromethane (75:21:4 v/v/v) and 0.1% BHT + 0.05% triethylamine (MeOH + 0.05 M ammonium acetate); flow rate, 1.5 mL/min; injection volume, 20 µL, temperature, 20 °C. The 'Instructions' section is titled 'Sample extraction by traditional method' and contains an 8-step procedure: 1. Collect fresh tomato samples (fresh matter, juices, purees, pulp, concentrates and sauces) homogenize coarse pieces in an IKA Werke Ultraturrax (T25 basic) model A10 laboratory homogenizer. 2. Weigh amount of homogenized sample and add 90 ml of a mixture of THF - methanol 1:1 (v/v) and of magnesium carbonate. 3. Filter the solution with a Buchner vacuum system and wash with a THF - methanol mixture. 4. Separate the phases in an amber separating funnel after the addition to the mixture of 50 ml of 40 - 60 °C petroleum ether and 50 ml of NaCl 10% aqueous solution. 5. Wash THF - methanol - water phase twice with 50 ml of petroleum ether. 6. Carry out filtration on anhydrous sodium sulphate of the ether aliquots containing the analyte and collection of the same in a rotavapor vial. 7. Evaporate the ether phase up to almost total dryness using a Rotavapor. 8. Retrieve and collect the extract with a solution of THF + 0.1% of BHT in a 20 ml amber vial. A scroll bar is visible on the right side of the page.



“CAS Analytical Methods gives me easy access to look at multiple methods in a very organized and clear way. The refining tool by technique is very good.”

— Ofir Itzhaki, R&D manager/team leader,
Fermentek Biotechnology

*TechValidate TVID: 81A-4E1-795



“You can learn many ways to make the desired product. Quick and easy access to the experimental procedures needed to make the desired products. So it has led to increased efficiency in our work.”

—Kouji Kamura, faculty, Tokyo University of Technology

*TechValidate TVID: F79-D71-311



Industry leaders across R&D organizations rely on CAS Solutions

PHARMA
 **49** of the
TOP 50
pharma companies⁶

ACADEMIC
 **100** of the
TOP 100
universities⁷

GOVERNMENT
 **10** of the
TOP 10
global patent offices⁸

BIOTECH
 **24** of the
TOP 25
biotech companies⁹

CHEMICAL
 **46** of the
TOP 50
chemical companies¹⁰

CAS Analytical Methods is a solution within the CAS SciFinder Discovery Platform, an enterprise solution created to help get discoveries to market faster and optimize profitability. CAS SciFinder Discovery Platform provides researchers with the information they need to avoid surprises and make smart investments with insight into the latest discoveries and competitive intelligence.



CAS is a leader in scientific information solutions, partnering with innovators around the world to accelerate scientific breakthroughs. CAS employs over 1,400 experts who curate, connect, and analyze scientific knowledge to reveal unseen connections. For over 100 years, scientists, patent professionals, and business leaders have relied on CAS solutions and expertise to provide the hindsight, insight, and foresight they need so they can build upon the learnings of the past to discover a better future. CAS is a division of the American Chemical Society.

Connect with us at cas.org

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