

Advion



ASAP

Atmospheric Solids Analysis Probe

For Direct Mass Analysis of Liquid & Solid Samples
with the expression CMS



Advion.com/ASAP · info@advion.com

Direct Mass Analysis of Liquid & Solid Samples

Advion's direct probe offers instant mass analysis - simply dip in to a liquid or swipe across a solid for results in < 30 seconds with the expression[®] compact mass spectrometer

The direct atmospheric solids analysis probe, otherwise known as ASAP[®], permits chemists fast and reliable sample analysis of liquid and solid samples such as reaction mixtures, food samples, natural products and tablets.



Chemists simply dip the closed end of a glass capillary into the sample of interest (even complex mixtures) or scrape the surface of a solid, and then place the capillary into the CMS for analysis.

Clean-up and analysis is a single step. Involatile buffers and salts remain on the capillary ensuring they do not suppress ionization or interfere with the measurement, while the compounds of interest are identified by the CMS.

In addition, users benefit from solvent-free APCI, which ionizes a wider range of compounds.

ASAP For Results in < 30 Seconds

Ergonomically designed for work flow efficiency, the ASAP probe has a push-button grip and release to quickly pick up a glass capillary for fast assays. The capillary and sample holder provides even greater ease of use and maintains organization, even when running back-to-back samples.

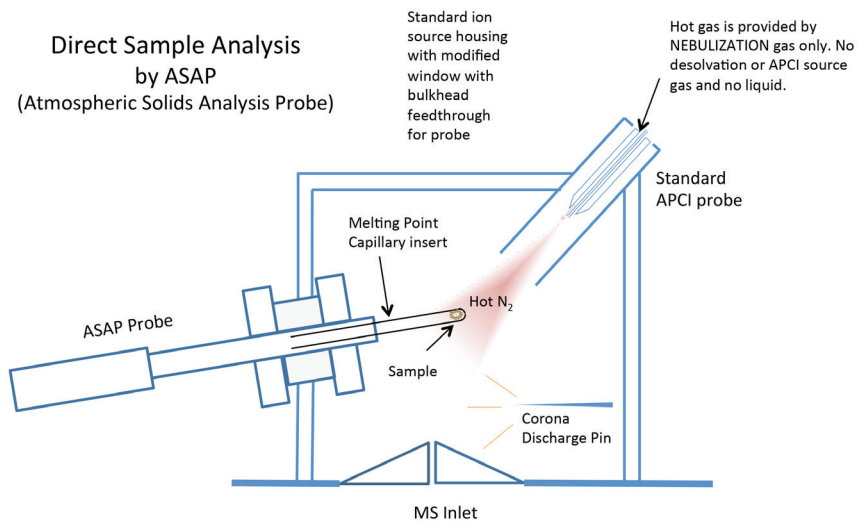
The ASAP probe requires no sample preparation, no chromatography, and provides sensitive analysis of the widest range of compounds in less than 30 seconds.

The Advion ASAP probe offers:

- No sample preparation
- No chromatography
- Fast and affordable sample analysis
- Solvent-free APCI
- Green practices without the need to buy and dispose of solvent
- Ionizes a wider range of compounds



Direct Sample Analysis by ASAP (Atmospheric Solids Analysis Probe)

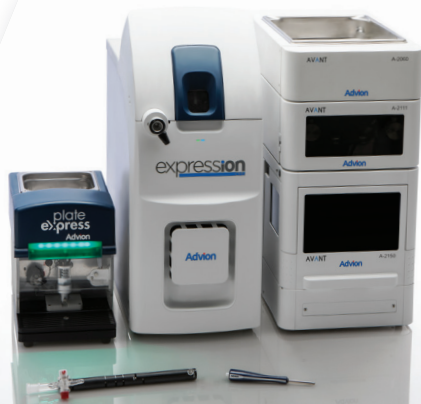
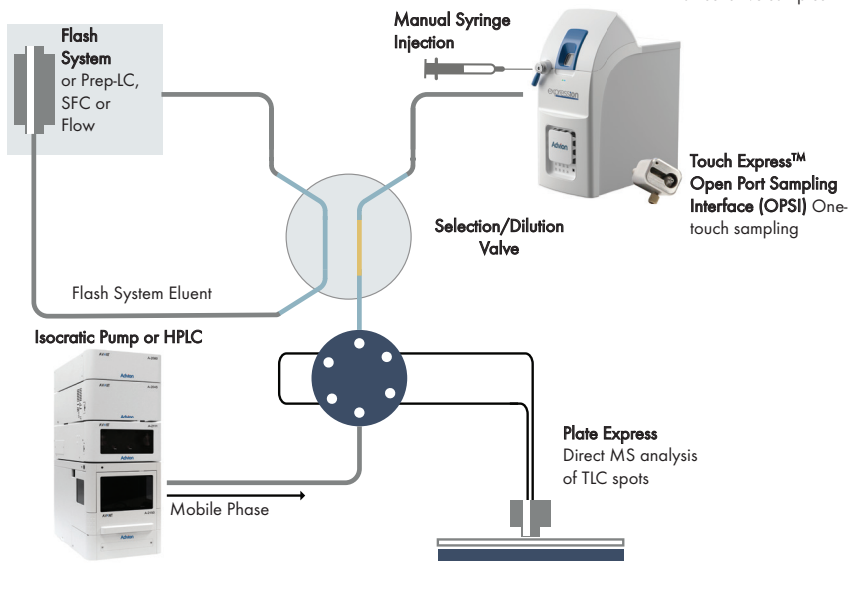


Your Custom Compact Solution

Combined flash chromatography, TLC, (U)HPLC and manual injection interface. No re-plumbing necessary.



ASAP & iASAP probes for liquids, solids & air-sensitive samples

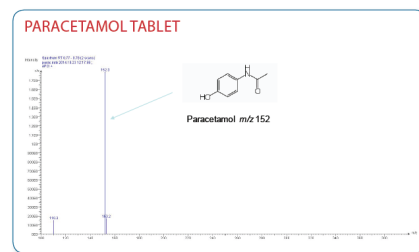
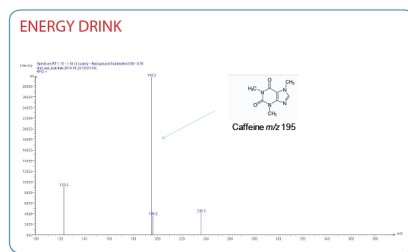
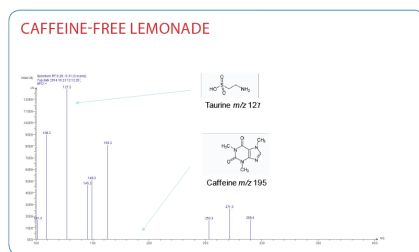
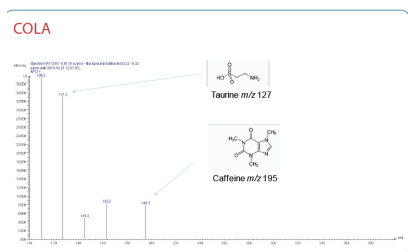


Application Data: Fast Compound ID of Caffeine

Identify compounds in seconds with the ASAP probe:

The ASAP probe can ID compounds quickly, with no sample preparation. Simply dip the closed end of the glass melting point capillary into an unidentified fizzy drink or sample. Wipe of the excess and insert the direct analysis probe into the mass spectrometer for analysis.

Here, the caffeine (or lack thereof) in a variety drinks is quickly and easily identified in a matter of seconds.



A Complete Benchtop Solution

The **expression** CMS with the Plate Express TLC plate reader, customizable (U)HPLC, the ASAP and iASAP probes for liquids, solids and even inert compounds, the Touch Express Open Port Sampling Interface (OPSI) plus a direct injection interface - all at the bench.

Application Data: Analysis of Two Reaction Products

Identification of Products in a Reaction Mixture:

To show the utility of the ASAP probe, we show the identification of products of a reaction where two products are possible, the alkylation of both aniline and cyclohexylamine and benzylbromide

EXAMPLE

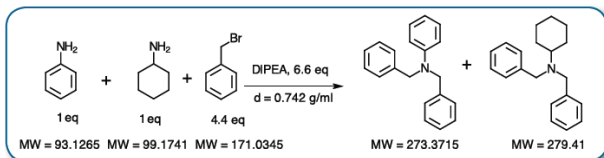


Figure 2: Alkylation of Aniline and cyclohexylamine with benzylbromide

TIME	CYCLOHEXYLAMINE REACTION		ANILINE REACTION
	ROOM TEMPERATURE	ICE BATH	ROOM TEMPERATURE
1	95.91 ± 2.20	0.00 ± 0.00	1.66 ± 1.46
5	99.44 ± 0.13	74.53 ± 10.39	11.11 ± 2.98
10	99.60 ± 0.09	95.38 ± 1.79	18.55 ± 2.52
30	98.91 ± 0.59	97.82 ± 1.03	60.66 ± 8.13
60	99.47 ± 0.23	98.85 ± 1.22	73.24 ± 5.29
120	99.68 ± 0.21	99.70 ± 0.03	82.15 ± 14.87
180	99.76 ± 0.04	ND	89.81 ± 5.95

Table 1: Aniline and cyclohexylamine with benzylbromide analyzed at time points by ASAP enabled APCI source on CMS.

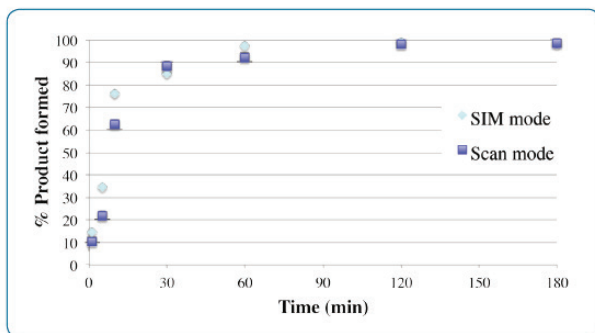


Figure 3: The analysis indicates that there is close correspondence between the results obtained using either full scan or SIM monitoring.

Application Data: Detecting THC/Cannabinoids by ASAP/CMS

Direct Sample Analysis for Rapid Screening of Cannabis:

ASAP-APCI-CMS is a rapid mass spectral analysis approach that can screen a variety of samples and surfaces for presence of cannabinoids

- Dried plant material can readily be screened for the presence of cannabinoids such as Cannabinol, THC/CBD or THC/CBD-acid
- Alternating acquisition of positive and negative ion mass spectra improves prediction certainty when sampling from complex samples such as skin contaminated with small quantities of plant material
- Alternating acquisition of positive and negative mass spectra improves prediction certainty when sampling from complex samples such as skin

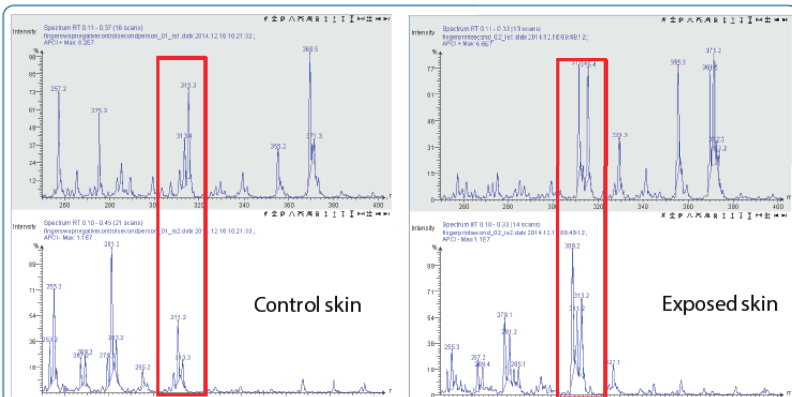
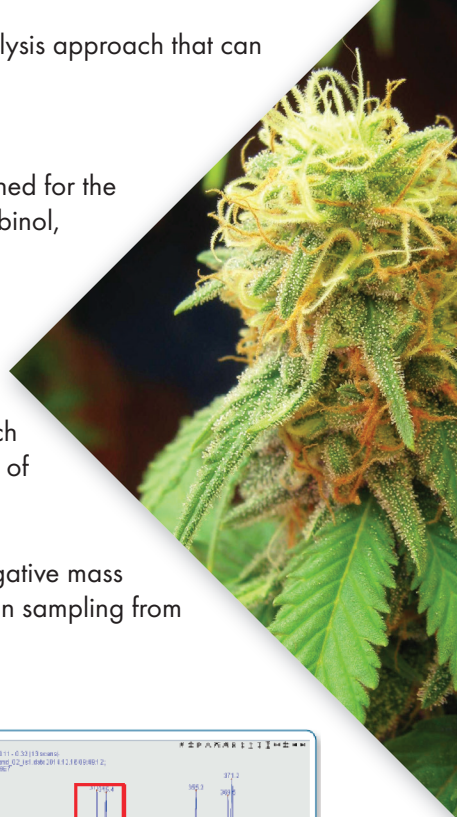


Figure 7: MS data showing both positive ionization (top trace) and negative ionization (bottom trace) of the ASAP finger skin analysis before and after cannabis exposure (control left side, exposed skin right side). The typical m/z signals at 311.2/309.1 and 315.2/313.2 are indicative of the respective $[M+H]^+$ and $[M-H]^-$ for Cannabinol and THC/CBD respectively.

Experience the full expression CMS suite

The expression family of compact mass spectrometers was developed with maximum versatility in mind. They allow users to switch rapidly between the many different sample introduction techniques required throughout the chemist's workflow; from simple direct probe analysis to ultra-high performance liquid chromatography and prep-scale purification.



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