

# Soy Saponins

The need for universal HPLC detection in analytical laboratories is widespread. While several detection technologies (e.g., low wavelength UV, refractive index, evaporative light scattering, chemiluminescent nitrogen detectors) are currently being used, there is significant room for improvement in performance characteristics such as sensitivity, dynamic range, consistency of response factors and gradient or solvent compatibility.

To help address the many challenges of universal detection, ESA has developed the Corona CAD™ detector. This novel technology offers many benefits to analytical scientists including:

- High Sensitivity - Low ng limits of detection.
- Consistent Response Factors - Response magnitude does not significantly depend on analyte properties (e.g. molar absorptivity, proton affinity).
- Broad and Useful Dynamic Range - 4 orders of magnitude (ng - µg quantities).
- Excellent Reproducibility - Typically less than 2% RSD.
- Broad Applicability - Can be used with a wide variety of HPLC conditions to measure virtually any nonvolatile analyte including proteins, lipids, carbohydrates and small molecules.
- Ease of Use - Easy setup. Uses minimal bench space and requires only gas input pressure and signal output range to be set.

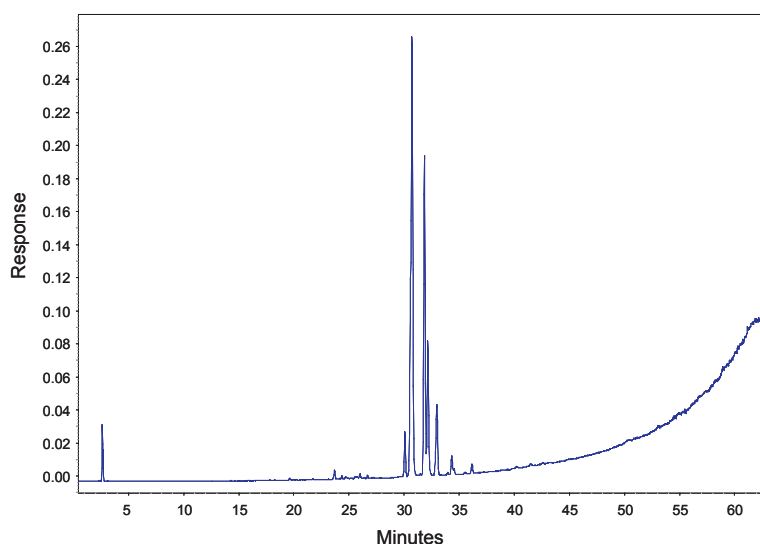


Figure 1. Soy Saponins.

This application note describes the use of the Corona CAD for the measurement of soy saponins (Figure 1). The method is extremely reproducible (Figure 2) and sensitive (low ng levels).

## Corona parameters

Gas: 35psi via nitrogen generator

Filter: none

Range: 100pA

HPLC Parameters:

Mobile Phase A: 0.1% Trifluoroacetic acid

Mobile Phase B: 100% Acetonitrile

Gradient:	Time	%A	%B
	0.00	90	10
	60.00	10	90
	65.00	90	10

Flow Rate: 1.0mL/min

Column: Shiseido MG 100 C18, 4.6 x 250mm; 5µm

Column Temperature: 25°C

Injection Volume: 10µL

# The Corona™ Charged Aerosol Detector

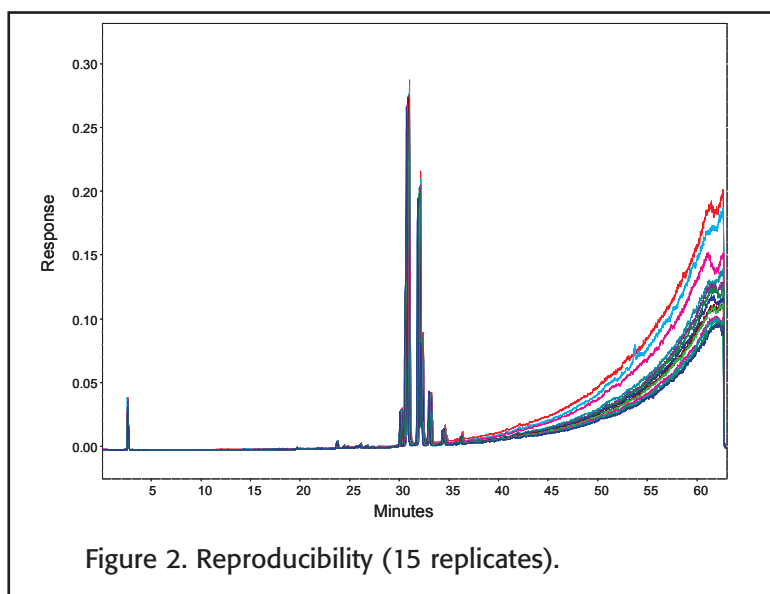


Figure 2. Reproducibility (15 replicates).

## Sample preparation

The sample (50mg powder) was dissolved in 25mL water in a 50mL volumetric flask. The mixture was sonicated for 10-15mins. Ethanol (24mL) was then added and the now warm solution was cooled. The solution was brought to 50mL by the addition of ethanol. The solution was then passed through a CentrX 0.2µm nylon filter by centrifugation.

## Conclusions

The Corona CAD provides universal detection of non-volatile analytes with response independent of chemical properties, a wide dynamic response range, high sensitivity and good precision. These characteristics, along with reliability and simple operation, make this a superior detector for a wide range of HPLC analyses.

## Ordering information

### Description

Corona

Thermal Organizer Module

Nitrogen generator

Pump, model 582

Autosampler, model 542

Quaternary low pressure gradient  
and degasser

Elite software including PC

Column, Shiseido MG 100 C18

### Part Number

70-6350 (100/120V)

70-6351 (230/240V)

70-5499TA

70-6003

70-4050

70-4152

70-5260

70-5073

88-90104

For more information about this application, the Corona CAD, or charged aerosol detection visit [www.coronacad.com](http://www.coronacad.com). We are interested in your opinions and are available to answer any questions you may have: please contact a technical representative at 978.250.7082, or if e-mail is more convenient, send your questions to [coronacad@esainc.com](mailto:coronacad@esainc.com).



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