

HOUND



UNCHAINED
LABS

Finger your suspects

Particles screw up the quality of your drug and can even shut down production. Hound is the only tool out there that combines microscopy, Raman and Laser-Induced Breakdown Spectroscopy (LIBS) to forensically identify particles by their chemical and elemental fingerprints. You'll know the culprit without a doubt in minutes – so you can track it back to the source and fix it asap.

Chemical ID

Elemental ID

Count

Shape

Size

Color

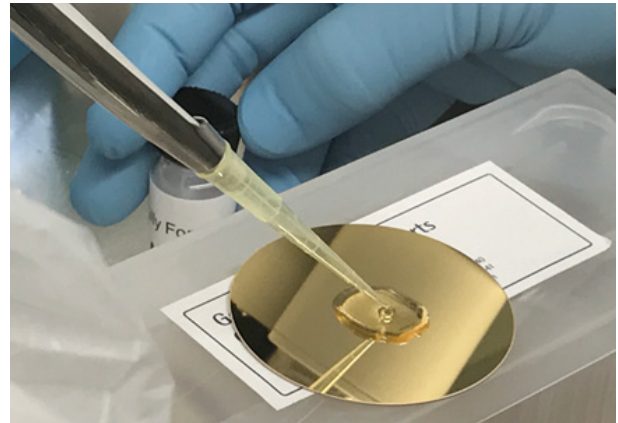


Gather the evidence

If you see particles or suspect they might be there, Hound sniffs them out. Just pour your whole sample through a filter round or pipette your particle onto a wet round, drop it in the Hound and you're ready to go. Don't sweat it – the gold-coated surfaces catch everything and cut out all the background noise.



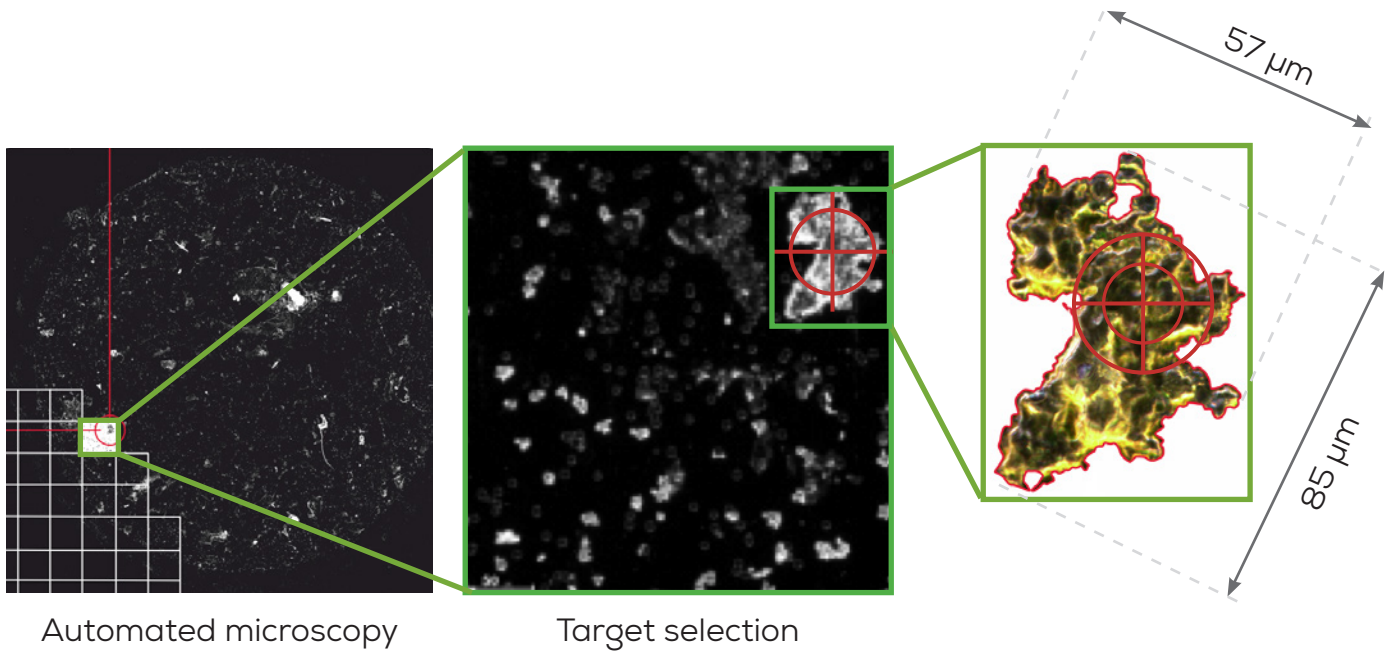
Filter round



Wet round

Track down your leads

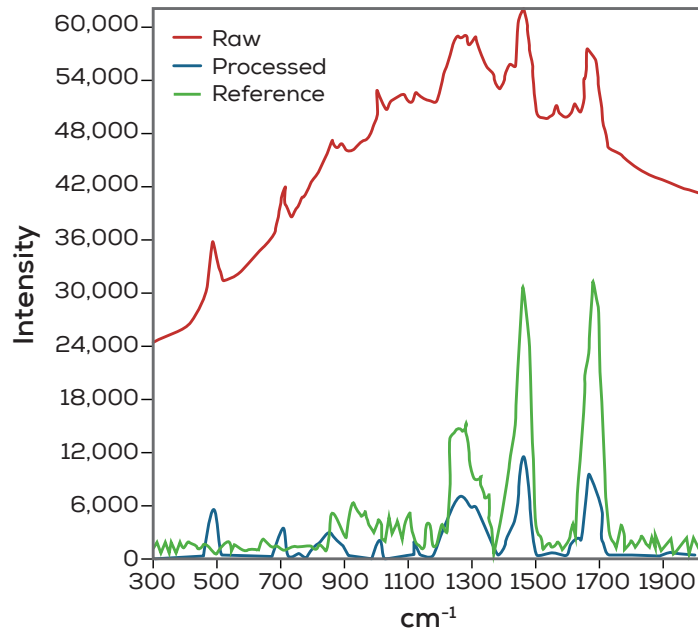
Once you've snagged all your particles, Hound automatically spots them and narrows down the list of suspects. It uses bright-field, dark-field and fluorescence so nothing sneaks by – not even those tricky translucent proteins. It scans the round then reports the size and shape of every particle, so you can make the call on which leads to follow.



Start the interrogation

Hound IDs the chemical makeup of protein and organic materials using Raman spectroscopy. Each particle gets fingerprinted and compared to a customizable reference database to make sure you get an exact match. You'll know right off the bat if a particle is from protein aggregation, rubber from a bad stopper or something random that snuck in.

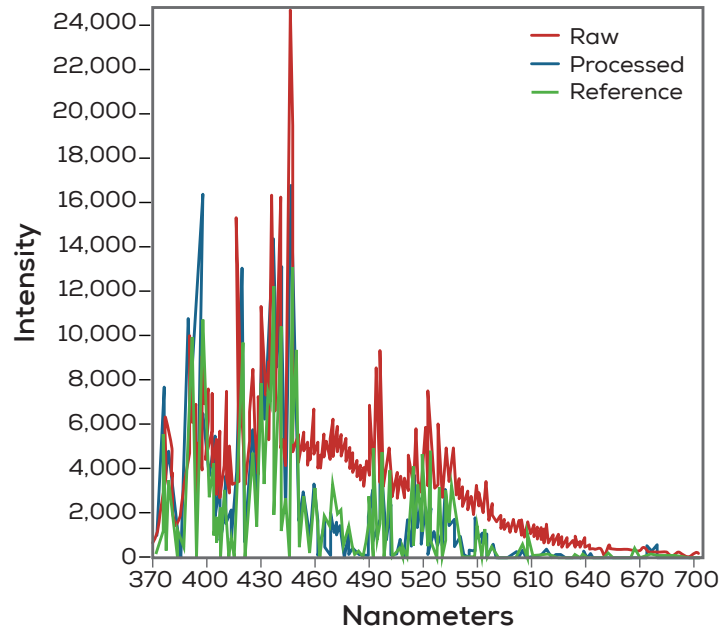
Protein + silicone particle



Rough them up

When your process hits a snafu like metal shedding from a fermenter or glass chipping off a vial into your drug, Hound has your back with Laser-Induced Breakdown Spectroscopy (LIBS). A laser blasts part of each inorganic or metal particle into smithereens. Their elements are released and checked against a reference library so you can ID the perp and crack the case.

Stainless steel fragment



Pick your Hound

Configuration	Proteins	Organics	Inorganics	Metals
Raman 785 nm + LIBS	Good	Best	Best	Best
Raman 532 nm + LIBS	Best	Best	Good	Best
Raman 532 nm + 785 nm	Best	Best	Good	N/A
Raman 785 nm	Good	Best	Good	N/A
Raman 532 nm	Best	Best	Good	N/A

Specifications

Description	Specification
Microscopy	<p>Imaging: 2 MP color camera, 10x, 20x (DF and BF), 50x objectives</p> <p>Illumination: Integrated bright-field and dark-field illumination</p> <p>Particle size range: 2 μm - 15 μm</p> <p>Accuracy: $\pm 5\%$ sizing (magnification dependent), $\pm 15\%$ counting</p>
Raman	<p>Laser: Adjustable power, 50x, 0.55 NA, 5.0 mm WD</p> <p>785 nm: ≤ 50 mW, 200–2000 cm^{-1}, resolution 5 cm^{-1}</p> <p>532 nm: ≤ 20 mW, 200–3200 cm^{-1}, resolution 5 cm^{-1}</p> <p>Minimum particle size: 2 μm</p> <p>Database: ~140 typical contaminants, expandable</p>
LIBS	<p>Laser: Safety Class 1, Pulse-LASER w/130 μJ, 3 ns duration, 20 x UV lens</p> <p>Spectral range: 350–700 nm, resolution 1 nm</p> <p>Minimum particle size: 20 μm</p> <p>Database: 50 typical contaminants, expandable</p>
Filter rounds	<p>Material: Gold coated polycarbonate (PC) – 2 μm min. particle size</p> <p>Gold coated polytetrafluorethylene (PTFE) – 2 μm min. particle size</p> <p>pH range: 1–14</p>
Wet rounds	<p>Material: Gold or nickel coated</p> <p>Optical transmission: 255–850 nm</p>
Software	21 CFR Part 11 & USP <788>, Method 2, ISO 8871-3:2004 compliance included
Environmental	<p>Temperature range: 15–30 $^{\circ}\text{C}$</p> <p>Humidity: 0–95% relative humidity (non-condensing)</p>
Physical	<p>Weight: 30 kg</p> <p>Dimensions: 60 cm W x 70 cm D x 80 cm H</p> <p>Recommended bench space: 180 cm W x 80 cm D x 110 cm H</p>
Electrical	110–230 V, 500 W



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Rev B