

**Screening for Gun Shot Residue (GSR) using the ECCO**



*Bullets, the Foster + Freeman ECCO, and a GSR 'stub'*

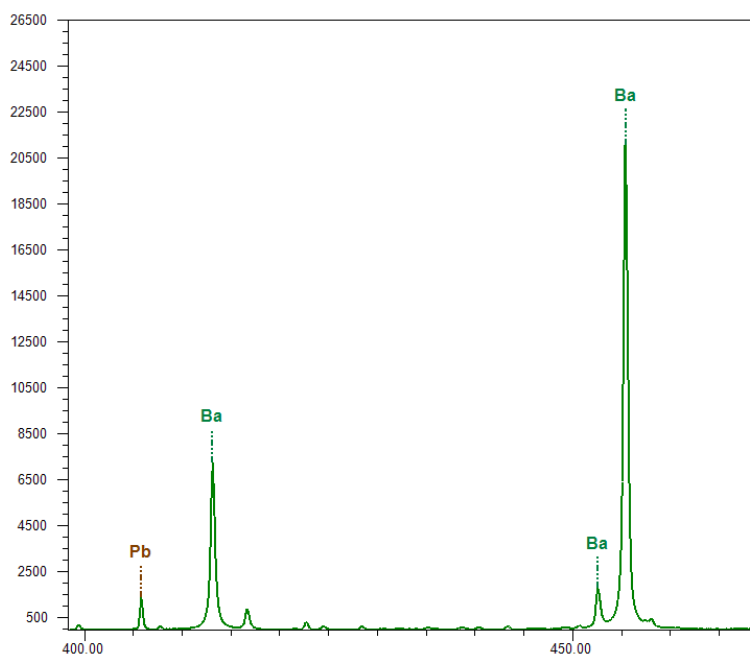
Gun shot residue consisting of particles containing the elements Barium (Ba), Lead (Pb) and Antimony (Sb) are frequently found on the arms and clothing of a shooter after firearm discharge.

Both presumptive tests, and SEM-EDX for imaging and elemental analysis of the particles are used for GSR detection.

Both these techniques have their pitfalls. Nitrate detection which is used in presumptive testing is found not to be very specific due to nitrates being nearly ubiquitous, being found in cosmetics, fertilizers and numerous other commercial products.

SEM-EDX is expensive and time consuming and is not suited to screening a group of suspects quickly.

Laser induced breakdown spectroscopy using the Foster and Freeman ECCO has been used to rapidly screen swabs from suspects hands for elements consistent with GSR, by detection of Barium and Lead. The spectrum below of GSR was taken recorded in less than 1 second, and clearly reveals peaks due to Barium and Lead – consistent with GSR.



## Sales Support and Feedback

Foster + Freeman welcome feedback from Customers regarding this product. Please contact one of our offices if you would like to pass on your comments. Foster + Freeman are pleased to offer advice, installation, training and on-site maintenance worldwide for all of their products.

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