

# HERBAL MATERIALS AND NATURAL FOODS ANALYSIS WITH HANDHELD RAMAN

- Improved quality control
- Increased production efficiency

## HERBAL AND NATURAL FOODS ANALYSIS

FDA guidelines for current Good Manufacturing Practices (c-GMP) in manufacturing, packaging, labeling, or holding operations for dietary supplements are described under 21 CFR part 111. Under these regulations, dietary supplement manufacturers are required to use at least one appropriate test method to verify the identity of any component or excipient that is used in the manufacturing of a dietary supplement, as well as confirmation of identity of the product.

## MINIMIZE FLUORESCENCE WHILE MAXIMIZING EFFICIENCY

In the past identification methods have relied on time-consuming, laboratory test methods. In recent years handheld Raman has been shown to be a valuable tool for quick identification of raw materials in regulated industries. With the advent of a portable, long wavelength 1064nm analyzer, many materials that cannot be measured using handheld Raman with 785nm excitation is now possible. Progeny is ideal for identification due to its chemical selectivity. To demonstrate the advantages of using a 1064nm analyzer, identification of two separate natural ingredients, turmeric and green tea powder (Figures 1 and 2), was performed. All materials were introduced into 2 mm glass vials and analyzed using the vial holder accessory. Raman data acquired using 1064nm excitation can provide fluorescence-free, chemically-specific data.



### Progeny™

The new generation in handheld Raman analysis that streamlines your raw material ID workflow.

Figure 1. Raman spectra of turmeric measured at 785nm and 1064nm excitation. Curcumin bands are visible at 1064nm, but are obscured by fluorescence at 785nm.

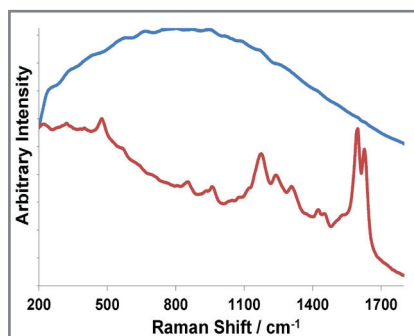
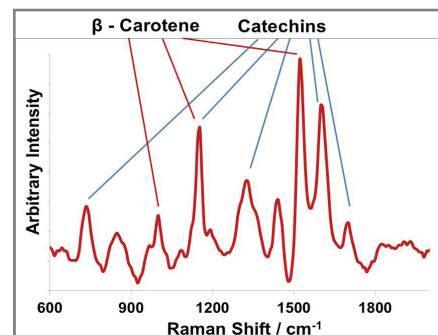


Figure 2. 1064nm spectrum of green tea extract. Nutritionally important phenolic antioxidant flavonoid compounds called catechins are labeled along with  $\beta$ -carotene. 785nm spectra were completely obscured with fluorescence and are not shown.



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