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# RAD006 - Pharmaceutical Excipients identification with handheld Raman

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## Introduction



It is critical and required for [pharmaceutical manufacturers](#) to have quality control procedures in place to ensure incoming raw materials are both correct and meet sufficient quality standards. Many have adopted Raman spectroscopy as an effective and efficient technique for raw material identification, in-process analysis, and final product authentication.

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## Minimize sample interference while maximizing efficiency

While analyzing excipients, fluorescence interference frequently prevents successful chemical identification and/or analysis. The Rigaku [Progeny](#) utilizes a 1064 nm laser to minimize signal-blocking fluorescence. To demonstrate the advantages, four common excipients used in many pharmaceutical products were analyzed using 1064 nm and 785 nm Progeny 1064 nm Advanced Analysis Technology analyzers (Figures 1-4).

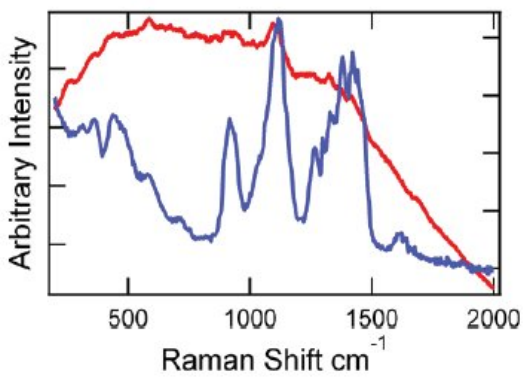


Figure 1: Sodium carboxymethyl cellulose 785 nm and 1064 nm

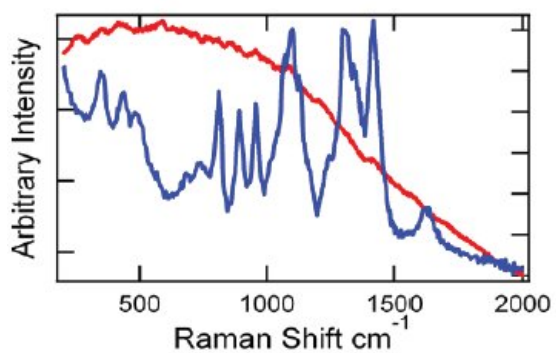


Figure 2: Alginic acid sodium salt 785 nm and 1064 nm

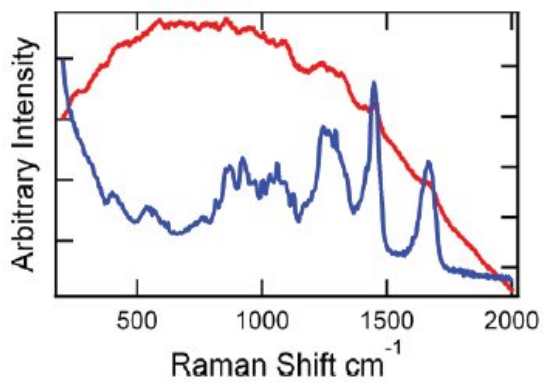


Figure 3: Gelatin 785 nm and 1064 nm

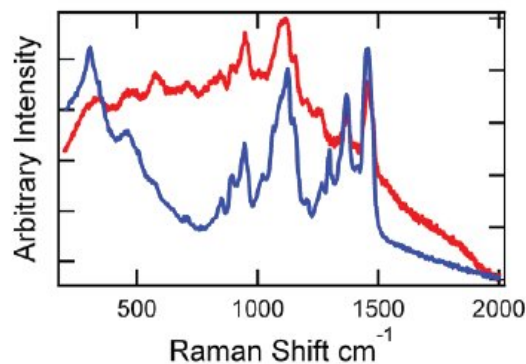


Figure 4: Hydroxypropyl methyl cellulose 785 nm and 1064 nm

## Conclusion

Because of its ability to test the full range of materials covered by a 785 nm system and the added ability to cover materials blocked by fluorescence, the Progeny 1064 nm analyzer offers the most comprehensive material identification range in a handheld form. Manufacturers can now perform lab-quality analysis at any point in their production process, enabling stronger quality programs.

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**Handheld Confidence**

APPLICATION NOTE

**PHARMACEUTICAL EXCIPIENTS IDENTIFICATION WITH HANDHELD RAMAN**

• PRODUCE CONFIDENT CHEMICAL ID

• ELEVATE QUALITY PROGRAMS

**IDENTIFICATION OF EXCIPIENTS USING RAMAN ANALYSIS**

It is critical and required for pharmaceutical manufacturers to have quality control procedures in place to ensure incoming raw materials are both correct and meet sufficient quality standards. Many have adopted Raman spectroscopy as an effective and efficient technique for raw material identification, in-process analysis, and final product authentication.

**MINIMIZE SAMPLE INTERFERENCE WHILE MAXIMIZING EFFICIENCY**

While analyzing excipients, fluorescence interference frequently prevents successful chemical identification and/or analysis. The Rigaku Progeny utilizes a 1064nm laser to minimize signal blocking fluorescence. To demonstrate the advantages, four common excipients used in many pharmaceutical products were analyzed using 1064nm and 785nm analyzers (Figures 1-4). In all cases, excitation at 1064nm yielded a strong fluorescence background and enabled the analyst to provide any valuable information about the sample. In contrast, 1064nm spectra produced compound specific "signature" Raman peaks used to produce confident chemical identification.

**Progeny 1064nm Advanced Analysis Technology**

- Increases sample throughput
- Increases safety and efficacy of products
- Completes with 100% inspection

**CONCLUSION**

Because of its ability to test the full range of materials covered by a 785nm system and the added ability to cover materials blocked by fluorescence, the Progeny 1064nm analyzer offers the most comprehensive material identification range in a handheld form. Manufacturers can now perform lab-quality analysis at any point in their production process, enabling stronger quality programs.

Figure 1: Sodium carboxymethyl cellulose 785nm vs. 1064nm

Figure 2: Magnesium sulfate 785nm and 1064nm

Figure 3: Calcium sulfate 785nm and 1064nm

Figure 4: Hydroxypropyl methyl cellulose 785nm and 1064nm

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## Related products



### Progeny

Handheld Raman for raw material identification and finished product authentication using 1064 nm Raman analysis.