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Multi-characterization of a yet unknown gemological material used by Amerindians in the Antilles: sudoite $Mg_2Al_3(Si_3Al)O_{10}(OH)_8$, a mineral from the chlorite group

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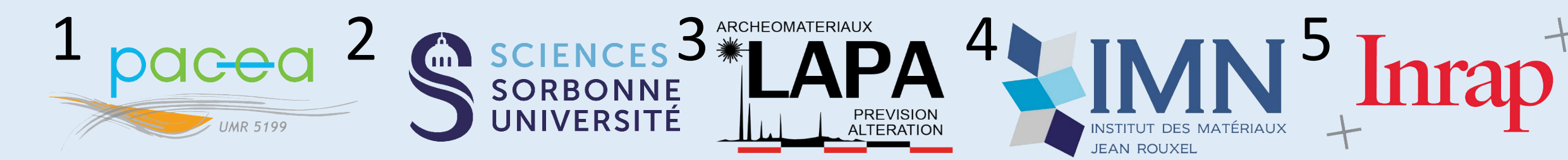
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Multi-characterization of a yet unknown gemological material used by Amerindians in the Antilles:

sudoite $Mg_2Al_3(Si_3Al)O_{10}(OH)_8$, a mineral from the chlorite group.

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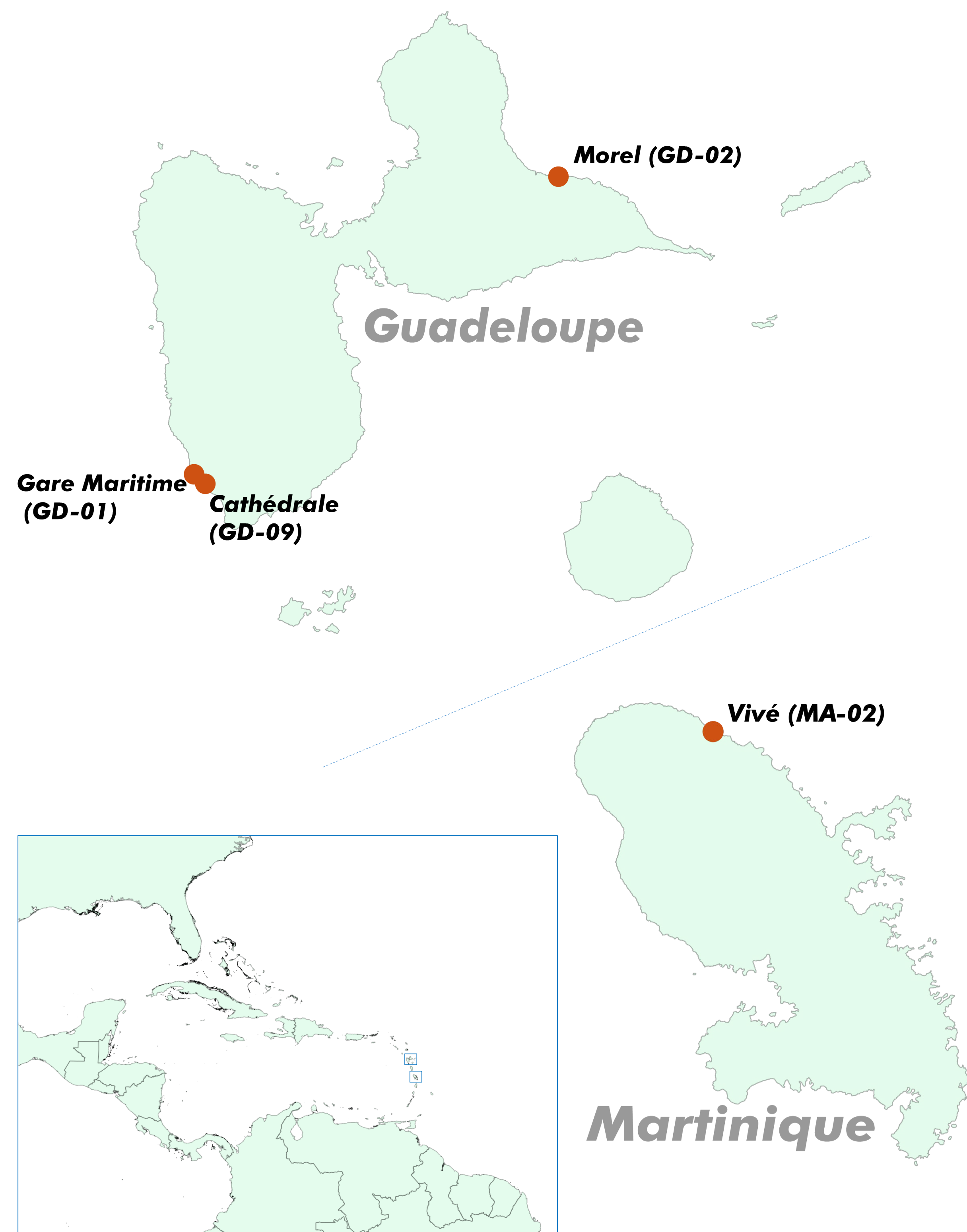
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INTRODUCTION

This work is part of a recent effort to characterize the Saladoid mineral personal ornaments from the French islands in the Lesser Antilles (Queffelec et al. 2018).

The Saladoid period, in the Antilles, also known as Early Ceramic Age (500 BC – 1000 AD), is partly characterized by a very rich and diverse lapidary artwork, using a variety of raw materials, fashioned as beads and pendants.



METHOD

Raman spectroscopy (Bruker Senterra, 532 nm excitation).

XRD was performed using a rotating anode set-up, both in transmission (100 μm beam) and low angle reflection (5°, 30 μm beam).

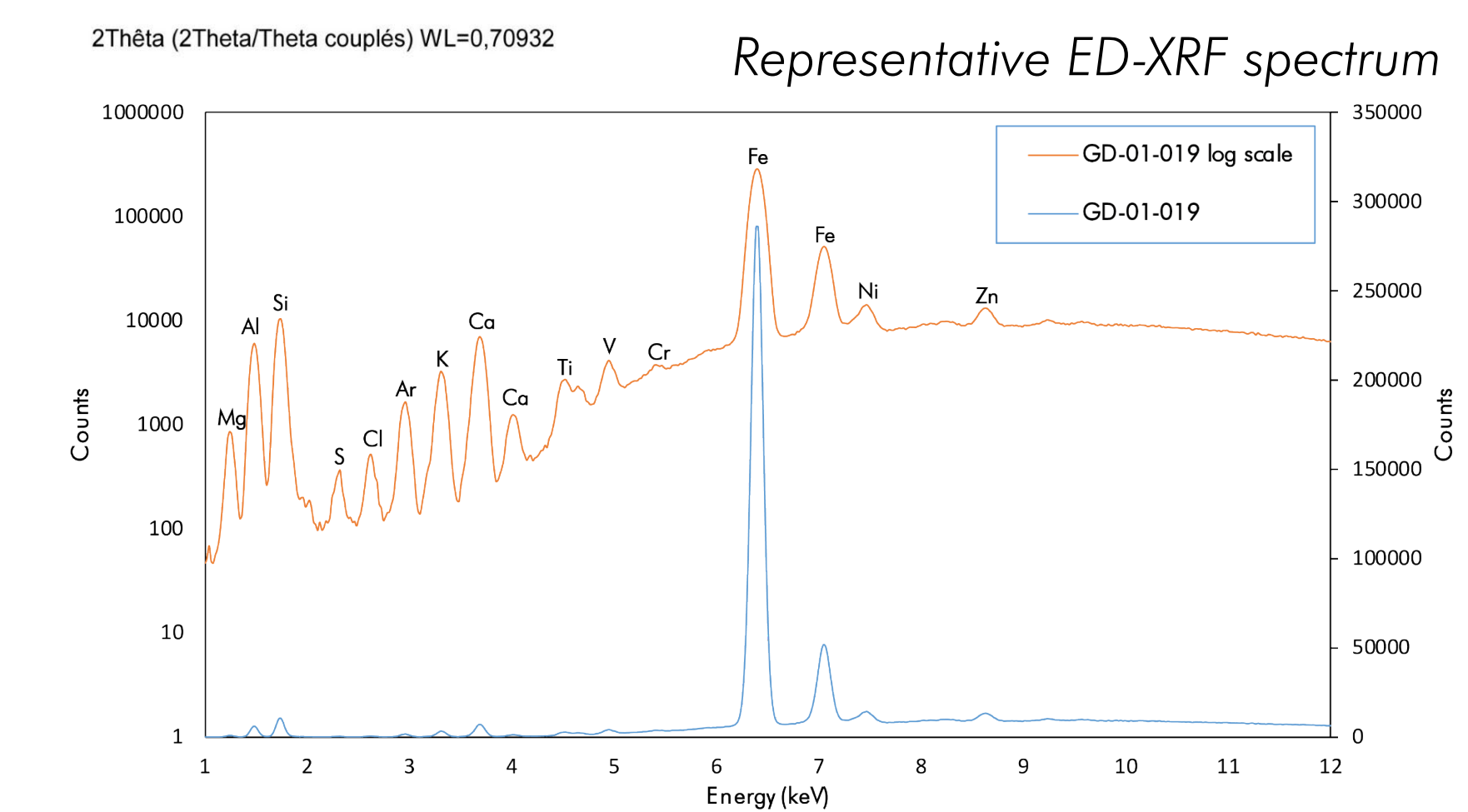
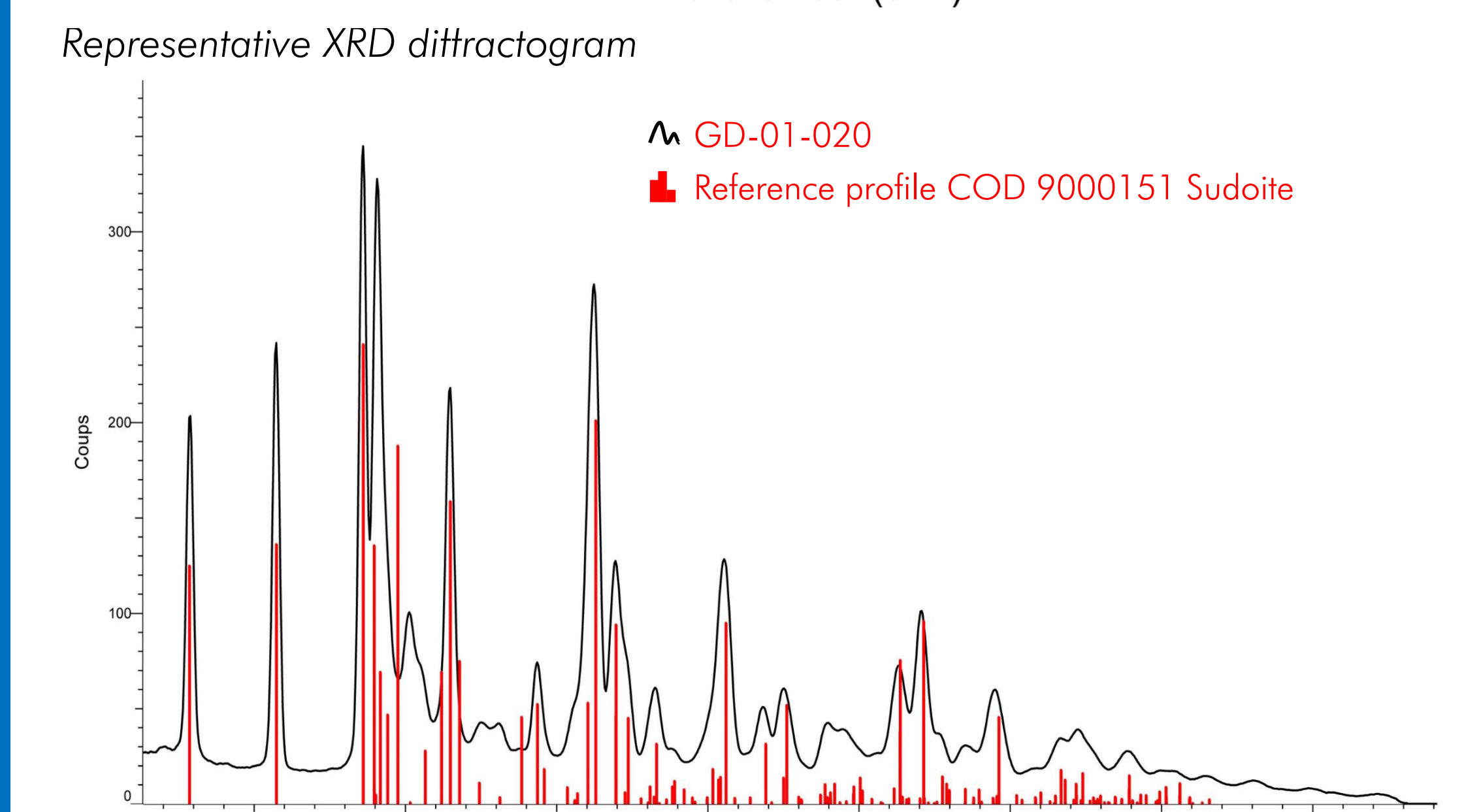
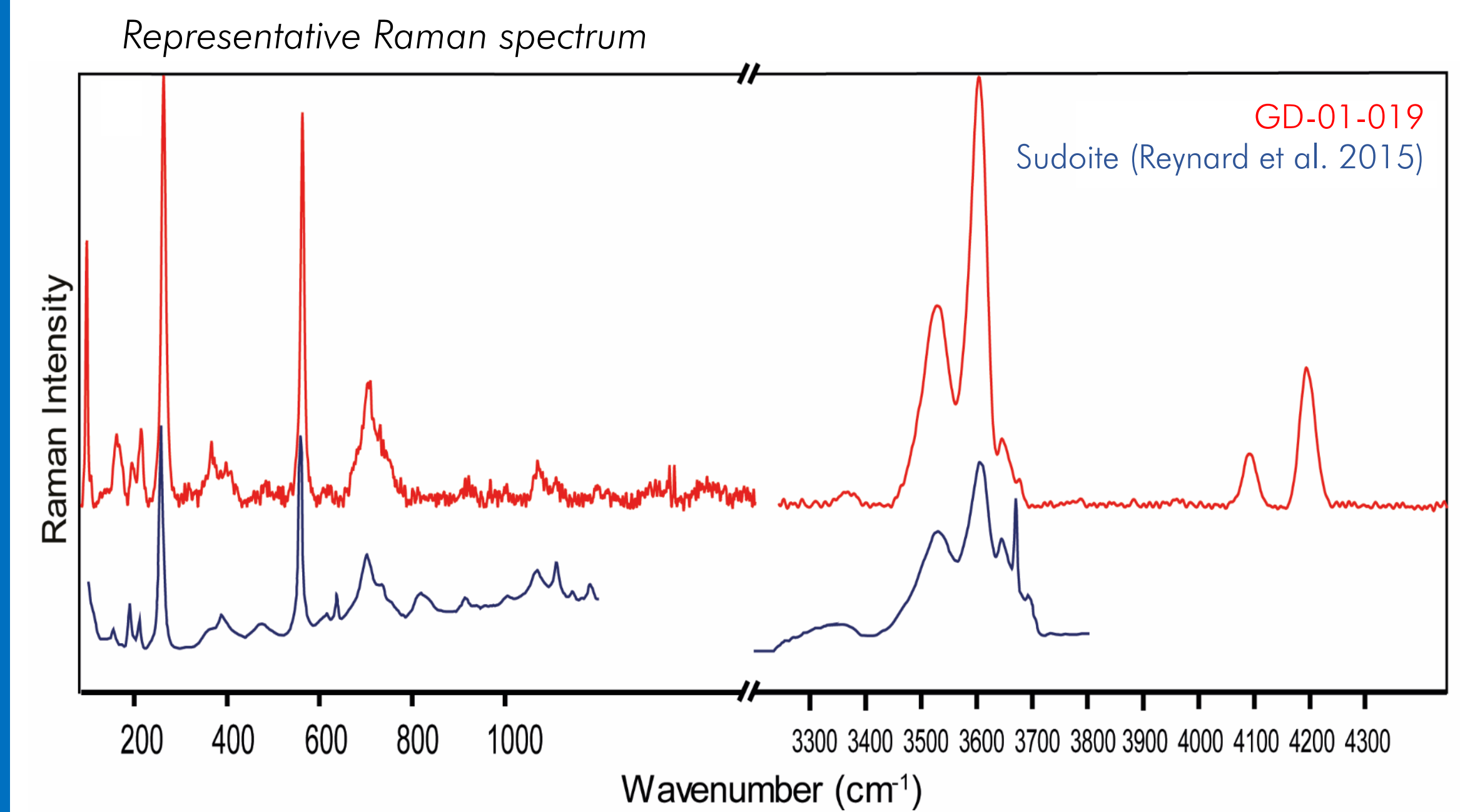
XRF (Bruker Tracer 5i, 15 kV, 100 μA, 120 s, vacuum)

Sudoite as a gem material First identification



These Amerindian ornaments from the Lesser Antilles were carved in this chlorite group mineral

RESULTS



Sudoite is typically white to light green. As all minerals from the chlorite group, it is soft and thus easy to carve.

DISCUSSION

This mineral has never been identified so far as a gem or ornamental material. It is thus a new type of the archaeological greenstones.

Sudoite is known from several metamorphic environments, especially in subductions zones. Therefore it is not surprising to find it in the Lesser Antilles, but its specific source remains unknown.

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FUNDINGS



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