

Identification of excavated black lacquer resin by pyrolysis-gas chromatography/mass spectrometry

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Lacquer sap is collected not only in Japan and China but also in Southeast Asia for manufacture of lacquer ware. However, the kind of lacquer tree depends on the region in which it was grown, and the lacquer saps of different trees are different.¹ Lacquer trees that grow in Japan and China belongs to *Rhus vernicifera*, and urushiol (MW=320) is the main component. On the other hand, laccol (MW=348) is the main component of the sap of *Rhus succedanea*, which grows in Vietnam and Taiwan, and thitsiol (MW=348) is the main component of the sap of *Melanorrhoea (Gluta) usitata*, which grows in Thailand and Myanmar². In order to study the history and use of the valuable ancient objects made of lacquer resin, identification of the kind of lacquer is important.³ In this study, a piece of black lacquer resin in “Shijiko” style (pottery with four ears) excavated from 17th century ruins in Kyoto, Japan, was analyzed by Py-GC/MS, and the result was compared with the standards of natural lacquer film to determine the origin of the lacquer. It was confirmed that the lacquer resin was made from lacquer sap of *M. usitata*. In addition, the use of the excavated black lacquer is discussed.

References

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