Roman marble from Lusitania: petrographic and geochemical characterisation

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1. Introduction

Since the modernisation of the quarrying industry in the 1970s, the marble production and export in Portugal has increased exponentially. Nowadays, Portugal is ranked 5th in Europe and 10th in the world regarding ornamental stone production. Around 50% of these stones are high-quality white and coloured marbles from the Estremoz and Vila Viçosa region (Casal Moura, 2007). Already in Roman times, the potential of this area for marble production was known; recent studies have proven that the marbles were extensively used from the 1st century CE onward in Roman Hispania and in other parts of the western Roman world (Alvarez Pérez et al., 2009; Antonelli et al., 2009; Cisneros Cunchillos et al., 1988, 1997; Cisneros Cunchillos et al., 2010–2011; Lapuente, 1995, 1999; Lapuente and Blanc, 2002; Lapuente and Turi, 1995; Lapuente et al., 2000; Lopes et al., 2000; Morbidelli et al., 2007; Peixoto Cabral et al., 1992).

In this paper, a petrographic and geochemical overview of the Estremoz marble is presented. For this, a multimethod approach was adopted, combining petrographic examination and strontium (Sr) isotopic analysis. Given that previous archaeometric studies have mainly focused on marbles from the central (Italy) and eastern Mediterranean (Greece and Turkey), the present work provides an important update on the petrographic and geochemical knowledge of ancient marbles. In particular, new Sr isotopic data is presented that can be used for future artefact provenance studies. Moreover, the 87Sr/86Sr data enlarge the Sr isotopic composition reference database for ancient marbles, thus improving the use of this parameter for provenance studies. In conclusion, the Estremoz marble signature is compared with that of other known Roman marbles of the Iberian Peninsula (Viana do Alentejo, Almeria group, Malaga group, and Almadén de la Plata), as well as to that of the principal classical marbles from the Mediterranean (Carrara, Paros, Naxos, Pentelikon, Hymettos, Dokimeion, Thasos, Aphrodisias and Proconnesos).