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The genetic history of Ice Age Europe

(estratto)

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Ostuni (Apulia, Italy)

The Grotta di Santa Maria di Agnano is a cave near the village of Ostuni, located at about 170 meters above sea level in a limestone formation (*Calcare di Altamura*) on the south eastern slopes of the Murge tablelands in central Apulia (southeast Italy). Excavations at this site led by one of the authors (D. Coppola) have demonstrated that the cave was occupied for tens of thousands of years from the Middle Palaeolithic until modern times, including Middle Palaeolithic (Mousterian) and Upper Palaeolithic (Aurignacian, Gravettian and Epigravettian) industries. The excavation discovered two burials, which on stratigraphic and typological grounds are attributable to the Gravettian culture.

The first of these burials (*Ostuni1*) is of a pregnant female of around 20 years of age, about to give birth[57]. The skeletons of both the mother and the fetus are remarkably well preserved and, to the best of our knowledge, constitute the oldest reported burial of a pregnant female in the world. The second burial (*Ostuni2*) contains the remains of an adult whose gender has not yet been established based on morphology (due to the partial excavation of this inhumation) but who genetically is female. Around their crania, both *Ostuni1* and *Ostuni2* had numerous ornaments made of perforated shells of the marine gastropod *Cyclope neritea*, similar to other Gravettian burials from Italy. We extracted collagen from the ribs of both individuals using the protocol of Talamo and Richards[58]. The radiocarbon dates for both samples are based on ultrafiltration, and give dates that confirm the assignment of both samples to the Gravettian:

- *Ostuni1* at 27,810-27,430 cal BP (MAMS-11449: 23,446 ± 107 ^{14}C) (direct date, using collagen ultrafiltration; the present study is the first report of this date)
- *Ostuni2* at 29,310-28,640 cal BP (MAMS-11450: 24,910 ± 125 ^{14}C) (direct date, using collagen ultrafiltration; the present study is the first report of this date)