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## Microsatellite analysis of *Trichinella britovi* isolates from the Mediterranean islands of Corsica and Sardinia suggests their different geographical origin

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In 2004 and 2005, two foci of *Trichinella britovi* appeared suddenly in domestic and wild animals of two restricted areas of the Mediterranean islands of Corsica (France) and Sardinia (Italy), considered until then to be *Trichinella* free. An epidemiological link between the two foci was suspected due to their geographic proximity and animal trade (pigs and dogs) between the two islands.

To investigate the origin of these foci, an average of 19 single larvae belonging to 11 isolates of *T. britovi* (3 from Corsica; 2 from Sardinia; 3 from continental France; 2 from continental Italy; and 1 from continental Spain) were genotyped at 6 loci containing microsatellites. Two polymorphic loci were used to investigate the genetic structure of the isolates. The two polymorphic loci showed the presence of 5 and 6 alleles with an average expected heterozygosity ( $H_e$ ) of 0.25. Only one isolate from continental France showed both loci fixed to a single allele.

The test of the Hardy–Weinberg equilibrium showed that only 2 isolates (from continental France and Italy) displayed a significant departure from the null hypothesis ( $P < 0.05$ ). The  $F_{st}$  index showed a consistent genetic differentiation among the isolates (average  $0.206 \pm 0.16$  SD; range 0.782–0.005). This index displays the Sardinian isolates well separated from the continental and Corsican isolates. A similar pattern was obtained by the Bayesian analysis, which grouped the isolates in 8 clusters. The genetic relationships obtained by the UPGMA algorithm, showed the Sardinian isolates included in one cluster with an isolate from continental France; and the Corsican isolates in another cluster with two isolates from continental France and Spain.

In conclusion, these preliminary results show that the two Sardinian isolates are genetically different from both the continental (France, Italy and Spain) and Corsican isolates, suggesting an ancient introduction of *T. britovi* in this island, followed by the fixation of alleles scarcely represented in other areas of the Mediterranean basin. On the contrary, the detection in the Corsican isolates of alleles circulating in the continental Europe, suggests a recent introduction of *T. britovi* on this island. This conclusion is also supported by the detection of lower  $H_e$  values in the Corsican isolates (average 0.17) than in those from Sardinia (average 0.50), suggesting a drastic reduction of the genetic variability caused by the founder effect.