



molecular Characterization of *E. granulosus* Larval Form in Sardinian Patient Affected by Cystic Echinococcosis: Project Results



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Cystic Echinococcosis (CE) is a neglected zoonotic disease caused by the larval stage of the tapeworm *Echinococcus granulosus* sensu lato (s.l.).

Materials and Methods Investigation on patients from Sassari and Nuoro Hospital Wards was performed by imagine-techniques and serum analysis.

On 7 hydatids surgically excised the internal and external structures were inspected and biomolecular characterization and genotyping of larval form was carried out:

- PCR *E.g.s.s.* [primers: Cal (F5':CAATTTACGGTAAAGCAT-3' R5':CCTCATCTCCACTCTCT-3') for Calreticulin gene of 1001 bp] on DNA by Qiagen DNeasy Blood and Tissue Kit.
- Sequencing analysis of the amplicon generated by PCR [primers: COX1 (F5'-TTTTTTGGCCATCCTGAGGTTTAT-3' R5'-TAACGACATAACATAATGAAAATG-3') for Cytochrome Oxidase I].

34 patients with symptoms referable to CE

19 males 15 females

Ultrasound techniques

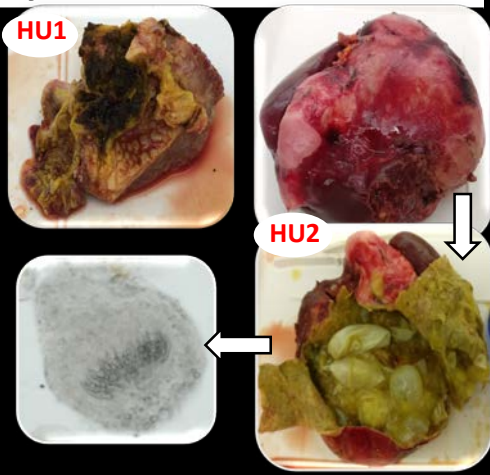
23 CE cysts positive 12 negative to CE cysts
21 liver / 2 lung

Serology: ELISA *Echinococcus* IgG (DRG) *Echinococcus* WB IgG (LDBIO)

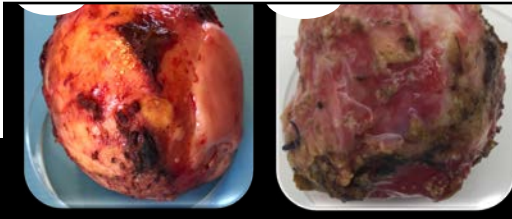
14 positive sera 20 negative sera

WHO classification 7 hydatids excised: **HU1-HU7**

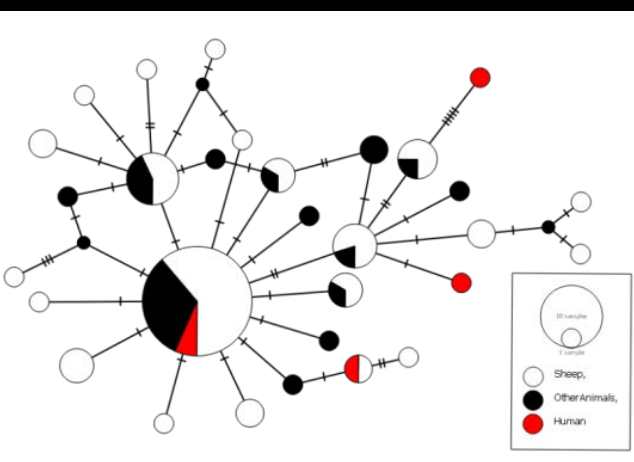
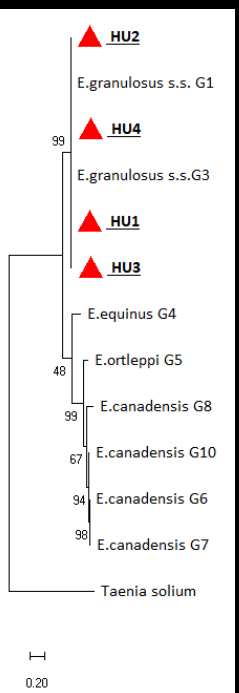
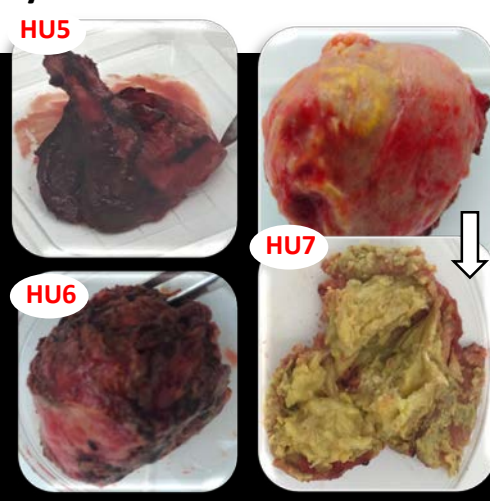
cysts stadium: active - CE2



cysts stadium: transitional CE3b



cysts stadium: inactive - CE5



A. Maximum Likelihood Phylogenetic tree build on a dataset comprising 4 human isolates (HU1, HU2, HU3, HU4) of *E. granulosus* from this study and other reference sequences of *E. granulosus* s.l. retrieved from GenBank.
B. Haplotype networks calculated on 83 DNA sequences of *E. granulosus* isolated in Sardinia from different animal species.

cysts	protoscolices	PCR <i>E.g.s.s.</i>	genotyp _e
HU1	non-viable	<i>E. granulosus</i> ss	G3
HU2	non-viable	<i>E. granulosus</i> ss	G1
HU3	non-viable	<i>E. granulosus</i> ss	G3
HU4	non-viable	<i>E. granulosus</i> ss	G1
HU5	no	neg	/
HU6	no	neg	/
HU7	no	neg	/



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