

EDTA on Iron Scabs in Vertebrate Fossils

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Vertebrate remains from the Late Cretaceous "Lo Hueco" fossil site (Fuentes, Cuenca, Spain) present conservation problems derived from the application of some methods for the elimination of the matrix (Marcos-Fernández, Plaza-Beltrán and Ortega, 2018). To avoid these problems, some alternative cleaning methods have been explored (Marcos-Fernández et al., 2020). In this context, the use of gels associated with EDTA has given positive results to remove iron crusts on vertebrate remains.

Different treatments have been proven by modifying the EDTA concentration, the amount of gelling agent and the action time of the gelled solution.



The treatment effectiveness was verified both by direct observation of the amount of crust that is dissolved in the gel and by the ability to facilitate its subsequent removal by mechanical methods.

Once the most suitable gelled solution has been determined, a treatment has been set. This

treatment consists of applying a 150 ml solution of water with 7,5 g of EDTA and a drop of surfactant for 7 to 15 minutes. To gel the mixture, 6gr of carboxymethylcellulose and 3gr of neutralized polyacrylic acid (carbogel®) are used. 1

To remove the gel and to neutralize the treatment the application of paper pulp with demineralized water has been used until the total elimination of the gel. 2 In the last phase, a scalpel was used to support the cleaning method. 3

The treatment is slow, but results very effective since it allows the removal of the iron crusts on the vertebrate remains from Lo Hueco and it doesn't affect the integrity of the fossil surface during the process.

