



## ORAL PRESENTATION ABSTRACT

### 4.3. "Evaluation of the Effects of Different Traditional Methods of Cleaning Skeletal Material by Means of Scanning Electron Microscopy". "Evaluación de los Efectos de Distintos Métodos Tradicionales de Limpieza de Material Esqueletario mediante Microscopía Electrónica de Barrido".

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**Introduction:** Biological collections that constitute unique repositories of biodiversity, with few preparation protocols that ensure minimal long-term deterioration. Our objective was to evaluate the effects of different preparation techniques of skeletal material on the bone surface. **Material and Method:** 11 Wistar rat femur cleaning treatments were tested, consisting of burial (2 months) and combination of chemical agents (enzymes, EZ; potassium hydroxide, KOH), temperatures and exposure times: EZ-10% -25°C-70h; EZ-10%-70°C-2h; EZ-15%-25°C-70h; EZ-15%-70°C-2h; KOH-5%-25°C-1h; KOH-5%-25°C-2h; KOH-5%-40°C-1h; KOH-5%-40°C-2h; KOH-5%-40°C-4h; KOH-10%-40°C-2h. On images of the clean bones, obtained by scanning electron microscopy, bone integrity and the percentage of surface covered by soft tissues were evaluated. **Results:** The best results in terms of soft tissue removal were obtained by burial (100% clean bone surface), and with the KOH-10%-40°C-2h and KOH-5%-40°C-4h treatments. (96 and 95%, respectively); however, in all of them there is superficial flaking, cracking and porosity. The other KOH combinations yielded less cleaning (20-81%), with less surface damage. In the enzymatic treatments, the bone structure was greater but the removal achieved was less, observing a strong relationship with temperature (treatments at 70°C: 69-80% of clean bone; treatments at 25°C: 16-30%). **Discussion:** The treatments tested in this work are frequently used in scientific collections. The success obtained, in terms of cleaning and preserving the bone surface, was not homogeneous. The damage caused by burial and KOH on the bone surface coincided with that observed by other authors, although the enzymatic treatments left more tissue than reported. **Conclusions:** Our results reveal a consideration to be taken into account to obtain clean bones while preserving their surface. More combination will be analyzed that will allow maximizing the cleanliness of the material minimizing its damage.

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#### References:

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