

Fig. E-1

Electron probe microanalyzer images of alumina in osteolytic tissues. Bright green and red colors in the evaluation field indicate that high levels of alumina particles are diffusely present in tissue.

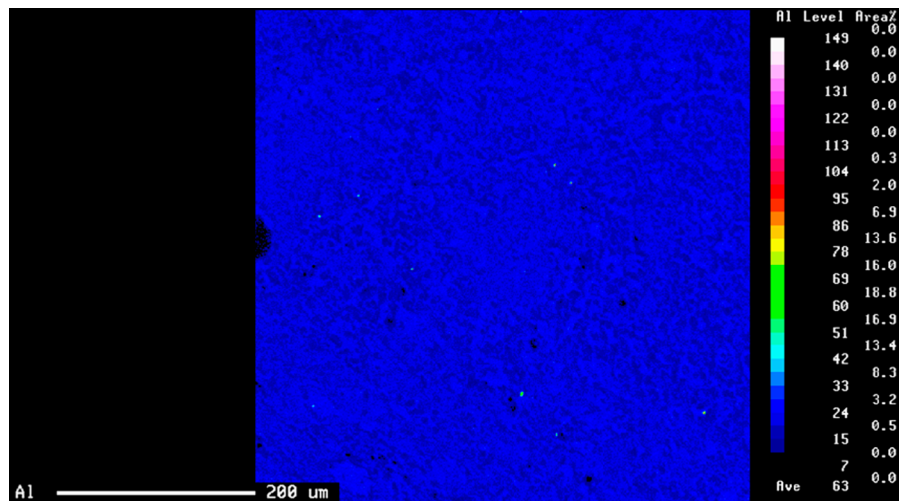


Fig. E-2

Electron probe microanalyzer mapping shows a dark blue color in the other field of the same tissue (in which particles were not seen with optical microscopy), indicating a low level or a lack of alumina particles.

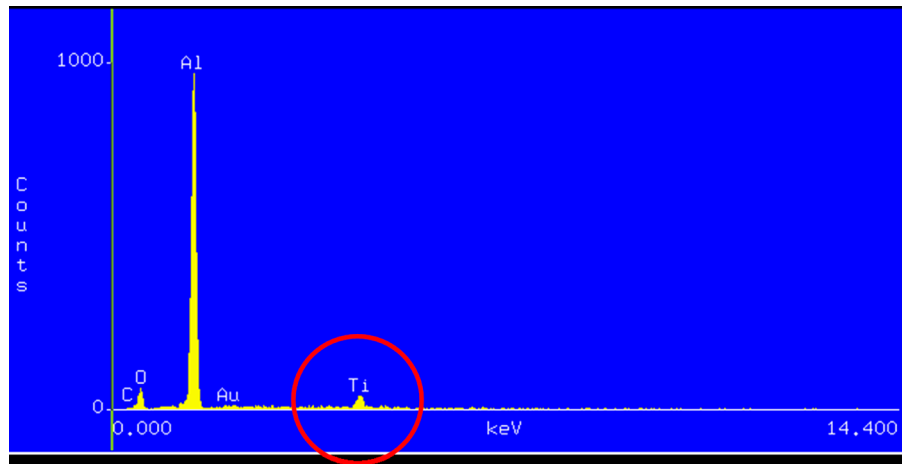


Fig. E-3

Energy-dispersive x-ray spectrophotometric analysis confirms that the black discoloration on the alumina liner bearing surface is a titanium metal stain (circle).