



Geochemical investigations on biogenic materials from the Lukeino formation (Tugen Hills, Kenya) to assess the palaeoenvironment of the early hominid *Orrorin tugenensis*.

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Throughout the Neogene, a series of events modified global climate with impact on continental biotas. In Africa, environmental changes are recorded in the late Miocene and Pliocene, with the appearance of C_4 grasses and the expansion of more open landscape in the late Pliocene.

In the Tugen Hills region, hominids remains are found in the Lukeino formation, which is a fluvio-lacustrine sedimentary formation (~ 6 Ma). Palaeontological investigations showed that hominid *Orrorin tugenensis* is associated with well wooded to forested palaeoenvironment.

In parallel to the palaeontological studies, geochemical analyses (stable isotope analyses, trace elements) were performed on some remains of mammalian teeth (Elephantidae, Rhinocerotidae, Equidae, Bovidae, Deinotheriidae and Suidae) to independently assess the palaeoenvironment of *Orrorin tugenensis*. The first objective of this study was to understand the depositional, taphonomic and fossilisation history of these biogenic materials using cathodoluminescence (optical and SEM), X-Ray Diffraction, FTIR and biochemical methods (e.g. Ca/P ratio). Some of them present REE contaminations on the outer enamel margin. For the well-preserved samples, the stable

isotope preliminary results seem to indicate some heterogenic diets, between the different lineages and are interpreted as different ^{13}C plant feed sources. These results are compared to other contemporaneous east African sites and interpreted on a global scale.