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# Development and application of a method for ivory dating by analyzing radioisotopes to distinguish legal from illegal ivory

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## Highlights

- Age determination of ivory by <sup>14</sup>C analysis provides ambiguous findings
- Precise age determination possible with subsequent <sup>90</sup>Sr and <sup>228</sup>Th/<sup>232</sup>Th analysis
- Fast and cheap <sup>90</sup>Sr extraction from ivory via ion chromatography
- Providing a method to distinguish between legal and illegal ivory

## Abstract

The age determination of elephant ivory provides necessary and crucial information for all criminal prosecution authorities enforcing the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The knowledge of the age of ivory allows to distinguish between pre-convention, hence legal material and ivory deriving from recent, illegal poaching incidents. The commonly applied method to determine the age of ivory is radiocarbon dating in the form of bomb pulse dating, which however will fade out soon. This work provides an enhancement of the

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