



E I N L A D U N G

zum

V E R A - S E M I N A R

von

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**C-14 bomb peak dating of human DNA samples at the
microgram level**

The preparation of carbon samples below 10 μg for ^{14}C AMS measurements is still a challenging task. In a collaboration between the Karolinska Institute in Stockholm and the VERA Laboratory in Vienna, we developed graphite sample preparation methods in the μg range for measuring ^{14}C in genomic DNA extracted from neuronal cells of the human brain. Emphasis was put on the reduction of carbon background throughout the whole sample preparation process.

^{14}C measurements of μg -size DNA samples allows one to perform retrospective ^{14}C bomb peak dating of neurons from the human olfactory bulb, thereby studying possible neurogenesis in this small region of the human brain. First ^{14}C AMS measurements from this material were performed with graphitized samples between 2.3 and 3.7 $\mu\text{g C}$. A precision of 1.8 to 3.5 % for $^{14}\text{C}/^{12}\text{C}$ ratio measurements could be achieved. Sample preparation and carbon background investigations currently applied at VERA for μg -size carbon samples will be presented. Furthermore, the potential of applying the method to study the human olfactory bulb will be discussed.

Donnerstag, 5. Mai 2011, 16:30 Uhr

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess Hörsaal**

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