^{220}Ac

In the 1970 article "Production and decay properties of protactinium isotopes of mass 222 to 225 formed in heavy-ion reactions," Borggreen et al. identified ^{220}Ac (1970Bo13). The Berkeley heavy-ion linear accelerator (HILAC) was used to bombard ^{209}Bi, ^{208}Pb and ^{205}Tl targets with ^{16}O, ^{19}F and ^{22}Ne beams forming ^{224}Pa, ^{223}Pa, and ^{222}Pa in (xn) fusion-evaporation reactions. ^{218}Ac was then populated by α-decay. Recoil products were deposited by a helium gas stream on a metal surface located in front of a gold surface-barrier detector which recorded the subsequent α decay. "The half-life of ^{220}Ac was measured in an experiment in which a sample was collected during a 104-msec period and then, with the beam off, the α spectrum was recorded for 16 time periods of 20-msec each. The decay of individual peaks of ^{220}Ac and of the 9.005-MeV peak of ^{216}Fr were plotted separately. The most accurate value of the halflife (26.1$\pm$0.5 msec) came from the decay of the ^{216}Fr peak as shown in [the figure]."

Adapted from reference (2013Fr03)

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