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ORAL PRESENTATION - New experiments to study properties of ^{268}Db produced in the $^{48}\text{Ca} + ^{243}\text{Am}$ reaction

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We conducted a new round of experiments to isolate and study chemical properties of ^{268}Db , the end product of 288115 synthesized in a $^{48}\text{Ca} + ^{243}\text{Am}$ reaction. In contrast to previous experiments [1, 2] the reaction products passed through a gas filled recoil separator (DGFRS) and were stopped in a catcher (copper foil) which provided an additional separation from the actinides with a decontamination factor of 4–5 orders of magnitude. The chemical separation procedures have been developed for selective isolation of Db from the catcher using coprecipitation with LaF_3 [3], ion-exchange and extraction chromatography from HF and HCl solutions. Altogether 8 spontaneous fission events were detected with a half-life of $23 \pm 13 \pm 6$ hour. The cross-section for the production of 288115 was found to be $6 \pm 3.6 \pm 2.4$ pb. This is in agreement with the previously reported data [1, 2, 4]. According to all previous experiments the half-life of spontaneously decaying nuclide ^{268}Db was estimated to be $27.4 \pm 4.6 \pm 3.4$ hour. Also the extraction behavior of Db together with those of the lighter group-5 elements Nb and Ta into UTEVA resin was investigated in 2–5.5 M HCl solutions by reversed-phase extraction chromatography. The obtained order of extraction $\text{Nb} > \text{Ta} > \text{Db}$ suggests that stability of the chloride complex of Db is lower than those of Nb and Ta.

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