In 1964 researchers in the Soviet Union at Dubna announced their discovery of element 104. A similar claim was made by researchers at the University of California at Berkeley. The Soviet scientists claimed to have bombarded a target of Pu-242 with Ne-22, resulting in a nucleus with 104 protons and a mass number of 260.

\[
\ce{^{22}_{10}Ne + ^{242}_{94}Pu \rightarrow ^{260}_{104}Rf}
\]

The Berkeley team used a Cf-249 target and isotopes of carbon for projectiles, resulting in isotopes of 104 with mass numbers of 257 and 259. Several other isotopes were also prepared by the American team.

\[
\ce{^{12}_{6}C + ^{249}_{98}Cf \rightarrow ^{257}_{104}Rf + 4^{1}_0n}
\]

The naming and priority of discovery controversy has raged ever since and Rutherfordium is the approved name selected by the IUPAC in August 1997.

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**Contributors**

Stephen R. Marsden ([ChemTopics](https://www.chemtopics.com))