

Checking DNA Painter

Blaine Bettinger's DNA Painter Shared cM Project 4.0 tool v 4 is the gold standard for comparing shared cM relationship ranges.

Mary and KH share 509 cM of DNA. This amount is too high for their match to be a ½ first cousin once removed.

Double Connections

Two connections through different ancestral lines, however, can inflate DNA to make the relationship look closer than it really is. When DNA amounts exceed expected ranges, always check for additional family connections.

Enter the total number of cM for your match here:

509 reset

Or enter %

Then any relationships that fit will stand out below

[Click here for a shareable link to the cM amount above](#)

Most distant common ancestors
Assuming no [pedigree collapse](#) or [endogamy](#) and that you're related in just one way, the *furthest* back you might need to go to find common ancestors for a match of 509cM is 2nd-Great-Grandparent or generation 5 on your pedigree chart.
The connection could be closer. Also, depending on your family, this match could be a close younger generation relative, such as the descendant of your sibling.

Relationship probabilities (based on stats from [The DNA Geek](#))
[Click on any relationship to view a histogram](#)
New: [View these relationships in a tree](#)

90%	Great-Great-Aunt / Uncle Half Great-Aunt / Uncle Half 1C 1C1R Half Great-Niece / Nephew Great-Great-Niece / Nephew
6%	Great-Grandparent Great-Aunt / Uncle Half Aunt / Uncle 1C Half Niece / Nephew Great-Niece / Nephew Great-Grandchild
4%	Half GG-Niece / Nephew † Half GG-Aunt / Uncle † 1C2R † Half 1C1R † 2C

† this relationship has a non-zero probability for 509cM in thednaageek's table of probabilities, but is outside the bounds of the shared cM project (99th percentile)

[Read more about cousin relationships](#)