

- Notes:**
- Only test results for 37 markers or more for McCarthy (and surnames associated therewith) have been considered. For other surnames, qualification for inclusion is 111 STR markers or a minimum of 67 STR markers with SNP testing beyond CTS4466 or any of its equivalents. Some kits not meeting these requirements are included where of interest in relation to qualifying kits. Please report any perceived errors to www@mcCarthyDNA.com.
 - All Y-chromosome position references are to Build 37 unless explicitly noted as "Build 38".
 - Some of these (SNP(s) / indel(s)) (as applicable) may have occurred on a higher branch of this tree, but not as high as the next level above which includes SNPs.
 - Recurrent, but phylogenetically consistent as placed.
 - It is likely that bases marked with this note within a lineage fall within a variable region of the Y-chromosome or, where very close together, participated in a MNP. In the latter case, since it is much easier for SNP interpretation software to handle single base substitutions rather than complex mutations, they are treated separately.
 - With corresponding change in 389-0 (the allele count for which includes 389-1).
 - This tree assumes CDYb = 37 and DYS 712 = 21 for the ancestral Irish Type II haplotype; they may however be 38 and 20 respectively, in which case appropriate adjustments should be made throughout the subsequent branches.
 - Where tested.
 - Test on first cousin.
 - It appears that a subsequent 13-12 back mutation at DYS 442 occurred independently on many occasions, implying some instability with 13 at this marker.
 - Where precise location is given for these MacAulays, it is Outer Hebrides (Lewis and Hirtis).
 - A second McCarthy-Gee descendant has a very different haplotype.
 - Subject to verification for all subclades.
 - There are several distinct O'Sullivan Irish Type II lineages. O'Sullivan and O'Sullivan Geans are also found in the P2H4.2 lineage of McCarthy R-L21 Group B.
 - SNPs proposed by FTDNA within the 105 kb repetitive zone known as DK219 (positions 3201880 to 3201946). They are not shown on this tree unless potentially breaking up a subclade and / or offered by FTDNA for individual or "Pack" component testing, in which case they will be among those having BY series SNP identifiers (e.g. BY267).
 - Suspected SNP may be difficult or impossible to confirm by Sanger Sequencing. Note 18 may also apply.
 - Position determined through diligence of James Kane and detailed investigation by Alex Williamson.
 - A defining SNP appears to exist on the Y-chromosome, but its location is uncertain.
 - SNP occurs within a STR and may therefore be unreliable. May also be seen elsewhere but phylogenetically consistent where Note applied.
 - Other configurations of this tree are quite possible from hereon. Full participant testing to 111 STR markers and / or SNP testing is needed for resolution.
 - Alternate configuration based on shared mutation at DYS19384 possible.
 - Note the phonetic similarity among McCarthy, McIneragh, Mooney, Mayhew and Mithan. If a back mutation in the Mooney stem is surmised, the Mooneys become closer still to S2742 Mayhew.
 - Clark may alternatively be paired with Sullivan, to the left.
 - Configuration based on reported family history. Otherwise kit 46395 would be shown branching off the stem before the occurrence of mutations at DYS 576 and 532 and thus without the need to conjecture back mutations.
 - Assignment as McCarthy McIneragh is provisional and requires testing to 111 markers to confirm.
 - SNP occurs at the junction of two homopolymers: may be difficult or impossible to confirm by Sanger Sequencing.
 - (not used)

LEGEND (and key to highlighting):

STR Mutations:

- Very slow moving STR markers (very low mutation rates) or rare multi-step mutation
- Slow moving STR markers (low mutation rates)
- Postulated STR back-mutation

Participant kit number and testing details:

No. of STR markers for which results have been published
 Has taken BY test (BY) (Results not yet available)
 Has taken Y-CC, Y-CP, Y-PP, Y-PC - Has taken Y-CC or Y-PP test with FGC, or Personal Genome Project (PGP) or other "full" Y-chromosome test (FC) elsewhere.
 Participant ancestral surname / kit no. (XXX) (Results not yet available)

Validation of position on tree is indicated as follows:

- SNP path proven. If NGS tested (BY, YC, YP or FC), participant will have further SNPs not yet observed in other samples. We call these "longshots".
- Postulated position based on positive test for a higher level SNP and on STR pattern being similar to that of (set) other(s) who have tested the terminal SNP (and sometimes some similarity).
- Postulated position based on STR pattern being similar to that of (set) other(s) who have tested the terminal SNP (and sometimes some similarity).

bc: To be confirmed (e.g. by Sanger sequencing)
 ps: STR marker in FTDNA Panel 4 (289 - 378 markers in FTDNA sequence)
 ps: STR marker in FTDNA Panel 5 (389 - 1119 markers in FTDNA sequence)
 ps: Following a DYS number denotes a STR mutation, e.g. DYS-18-17 indicates a mutation from 18 to 17 at DYS 18, elsewhere (in cases) it is used to indicate "later than".

IMPORTANT NOTICE

THIS TREE COMBINES POSTULATED RELATIONSHIPS BASED ON STR TEST DATA WITH FIRM DEFINITION AFFORDED BY SNP TESTING.

IT WAS ORIGINALLY INTENDED TO SERVE 'R-L21 GROUP A' IN THE MCCARTHY SURNAME STUDY AND INCLUDES ALL IRISH TYPE II MCCARTHY'S WHO HAVE TESTED TO 37 STR MARKERS. IT NOW ALSO INCLUDES ALL R1b-CTS4466 PLUS PROJECT MEMBERS WHO HAVE TESTED TO 111 MARKERS OR HAVE TESTED SNPS BEYOND CTS4466 PLUS SOME OF INTEREST FROM OTHER SURNAME PROJECTS.

WHERE CONFIGURATIONS ARE NOT CONFIRMED BY SNP TESTING, DIFFERENT PERMUTATIONS ARE POSSIBLE FROM THE TIME OF FORMATION OF THE ANCESTRAL IRISH TYPE II HAPLOTYPE FORWARDS, PARTICULARLY IN THE OCCURRENCE OF MUTATIONS AT DYS 458, DYS 576, CDYb, DYS 442, DYS 715, DYS 714, DYS 532 AND DYS 712 AND THE CONSIDERATION OF FEASIBLE BACK MUTATIONS.

THE RELIABILITY CAN ONLY BE IMPROVED BY MORE PARTICIPANTS TESTING STRs TO 111 OR TO 125 MARKERS AND NGS TESTING, IDENTIFYING SNPs WHICH GIVE FIRM DEFINITION TO THE BRANCHES AND TWIGS (SUBCLADES) OF THE TREE.

ACKNOWLEDGEMENTS

Data has been mined from various sources in the public domain. Not all kits are owned by members of the McCarthySurname Study or R1b-CTS4466 Plus Project. Thanks are due to the haplotype owners and their project administrators for making them available in the spirit of 'citizen science' for the mutual benefit of all concerned. Should anyone wish his kit reference to be omitted from this tree, he is asked to contact me privately (via the website of either of the aforementioned projects). Projects from which haplotypes have been taken include but are not limited to Ireland DNA, Munster Irish Project, R-L21, Z260 and Subclades Project, R1b-L21 South Irish Project, and those pertinent to the following surnames or variants thereof: Colclough, Collins, Coffey, Daly, Donovan, Driscoll, Ferguson, Gleeson, Hayes, Healy, Lane, Leahy, Moon, Moriarty, O'Clairigh, O'Donoghue, O'Hairns, O'Keefe, O'Mahony, Patterson, Reegan, Sheehan, Sullivan.

Thanks are due to James Kane for his assistance in identifying some SNPs.

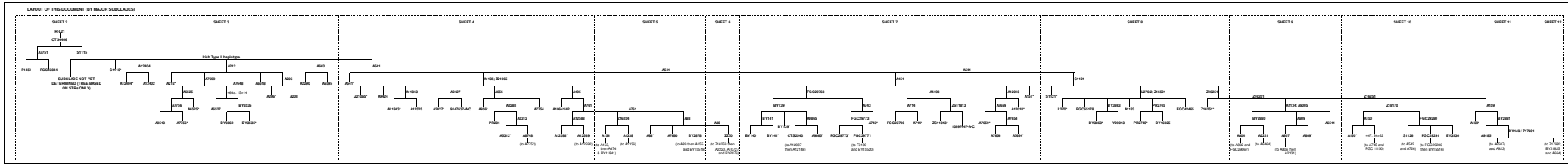
ND McCarthy

MCCARTHY (Y-DNA) SURNAME STUDY and R1b-CTS4466 PLUS PROJECT

POSTULATED "IRISH TYPE II" PHYLOGENETIC TREE FOR MCCARTHY (MCCARTHY R-L21 GROUP 'A') AND VARIOUS OTHER SURNAMSES

Sheet 1 of 12

N McCarthy Last updated - 28 July 2017





McCarthy (YOMA) SURNAME STUDY
and PIS-CITRUS PLUS PROJECT

POSTULATED 'TIMETYPES' OF PHYLlogenetic TREE FOR
McCARTHYS (McCARTHY #1,2, GROUP 3), AND VARIOUS OTHER
SURNAMES

Sheet 2 of 12

McCarthy

For Revision date, Legend, Notes and Acknowledgment, see sheet 1

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