

Are you Descended from Diarmid O'Duibne?
By Kevin Campbell, Campbell DNA Project Coordinator

The Campbell DNA project was begun nearly five years ago with the hope categorizing major Clan lines and helping genealogists look at DNA patterns among Campbells throughout the world. Recently, the project has received new results which allow the project to significantly strengthen its analysis.

Core Campbell DNA Signature

First let me begin with a discussion of our Clan. A common Clan misconception is that everyone descended from a single progenitor. Statements like “Diarmid O'Duibne founded Clan Campbell” or “Clan Campbell traces its ancestry to Diarmid O'Duibne” tend to reinforce this incorrect notion. The truth is that Clan Campbell is a tapestry of genetic lines – some traceable to our Chiefs, some traceable to other landed Scottish gentry, and most traceable to farmers and commoners who occupied the Highlands of Western Scotland and Ireland.

When people talk about the lineage of the Clan, they frequently mean the lineage of the Clan Chieftain's line – in our case the Campbells of Lochawe. The most visible embodiment of this line are the Campbells of Argyll represented by His Grace, the 13th Duke of Argyll. However, the Campbells of Argyll have a number of offshoots represented by Houses and Cadet lines.

The large chart elsewhere in this issue illustrates the Lochawe/Argyll Family Tree as described in Volume One of Alistair Campbell's “History of Clan Campbell”. Many of the cadet lines shown on this chart are blood and genetic offshoots of the earliest Campbell lines; however, many are not. Some of these lines are honorary positions bestowed on friends and allies or titles that have moved back and forth along female rather than strictly primogenetic paths.

In a 2004 article for the Journal of the CCSNA, I used samples from three branches of the Clan tree to speculate about the possible DNA signature of Sir Colin "Iongantach" Campbell, of Lochawe. Sir Colin lived between 1338 and 1412 and married Mariota Campbell. Of the samples that I used, two were very similar but one was a bit different. With these samples we were able to identify 15 out of 25 DNA markers that were common to all three individuals.

Since that time, more and better data has come available. By incorporating the new data, which has a strong and reliable paper trail, and excluding the previous sample (which just didn't seem to fit) we now have a very strong genetic signature for the blood lines descended from the Lords of Lochawe.

Figure 1 shows DNA values of the three samples. Even though none of the three participants share a common ancestor in the last 16 generations, the DNA signatures of these three participants share 21 of the same 25 genetic markers.

Genetic Line	393	390	19	391	385a	385b	426	388	439	389-1	392	389-2	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d
Campbells or Argyll, Argyll, Scotland	13	24	14	10	11	15	12	12	11	13	13	30	20	9	10	11	11	25	15	19	30	15	15	16	17
Campbells of Auchinbreac, Scotland	13	23	14	10	11	15	12	12	11	13	13	30	20	9	10	11	11	25	15	19	30	15	15	16	17
Campbells of Inverawe, Scotland	13	24	14	10	11	15	12	12	12	14	13	31	20	9	10	11	11	25	15	19	30	15	15	16	17

Figure 1 – DNA Signatures of Historic Campbell Lines

Statistical analysis of the DNA data indicates that there is a 78% chance that the Argyll and Auchinbreac lines have a common ancestor 12 generations ago and 89% chance within 16 generations. Since generally accepted documented lineages suggest that their common ancestor was the first Lord Campbell (who died in 1453) -- 16 generations ago - - the DNA and historic records for this pair are very consistent.

Statistical analysis of the Argyll and Inverawe lines indicates that there is a 71% chance that they have a common ancestor 16 generations ago and an 84% certainty of a common ancestor in 20 generations. Documented lineages suggest that the common ancestor for these lines is Sir Gillespic Archibald Cambel of Lochawe (c1310-bef 1394) who married Isabella Lamont 22 generations ago. Again, the DNA and historic record are very consistent.

Because of the tight grouping of the data and the strong support of the individual's documented lineages, I believe that the DNA project has isolated the DNA signature of the Campbells of Lochawe. This DNA signature, represented by the 21 common values displayed in Figure 1, represents a common identifier unique to Campbell tree shown elsewhere in this issue.

If true, this signature is not only the signature of branches and twigs of the Campbell tree, but also its earliest roots. The values shown in Figure 1 would also then represent the DNA of Sir Cailean Mor Cambel (also known as Mac Cailein Mor), his father Sir Gillespic Cambel (who married "Heretrix of Lochow") and his father Dugald "Cam Beul" O'Duibne (aka: Diarmid O'Duibhne).

I believe that this is an impressive result. The Campbell DNA Project through the support of participants world-wide has discovered a genetic signature of historic Campbell lines. These results may require historians to rethink popular genealogies and provide a tool for deciphering lineages, debunking myths, and breaking down brick walls. It's not every day that one gets a chance to rewrite history.

Comparing Campbell and MacDonald DNA Results

One interesting analysis that can be done is to compare Campbell DNA data with the DNA results of the MacDonald Clan. Although, as the 21st largest surname project, the Campbell project is considered large, the MacDonald project is almost twice as large and is one of the five largest projects in the world.

Before comparing results, it's worth reviewing the overall genetic tree used in Y chromosome (i.e., male) DNA analysis. This tree is shown as Figure 2 below.

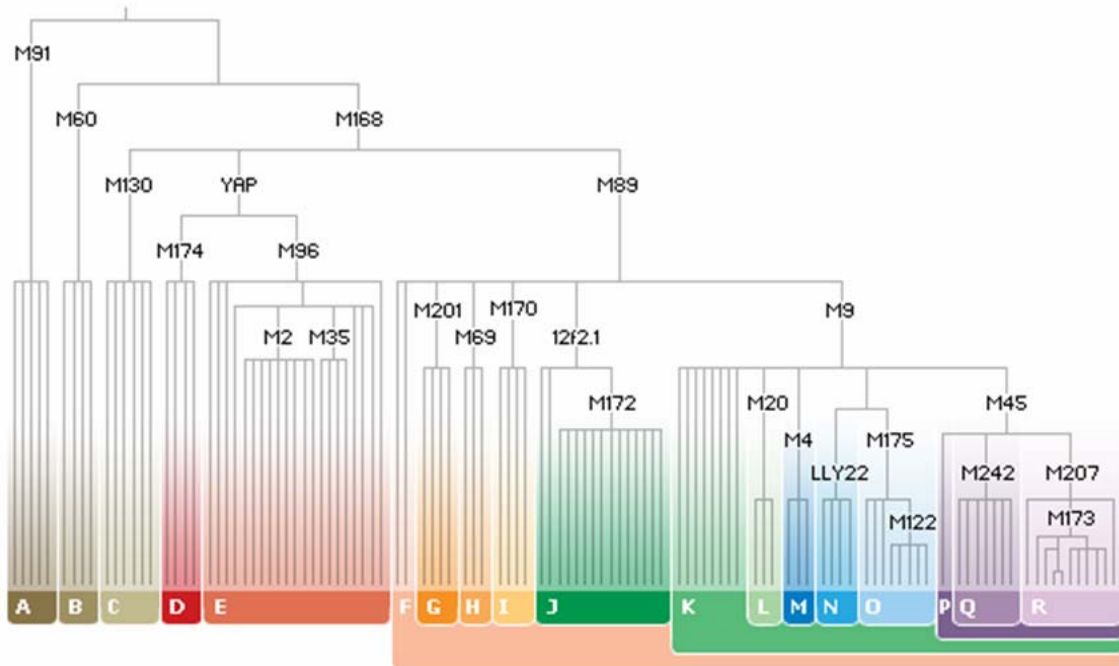


Figure 2 – Genetic Tree of Male Chromosomes

There are several important points worth noting about this figure. First, every male alive today or who has ever lived fits somewhere on this DNA tree. Every male is traceable to the “genetic Adam”. Second, the major branches of male Y-Chromosome tree are defined by letter groups (e.g., R, I, J, etc.) and further divided hierarchically into second order breakdowns (e.g., R1, J2, etc.) and so on (e.g., R1b1c9, etc).

Now comparing Campbell and McDonald data, we get a striking contrast. Figure 3 shows this Clan data mapped onto the genetic tree above.

	Campbell	McDonald
R1b	85% (Chiefs)	70%
R1a	3%	22% (Chiefs)
I	8%	7%
E3b	2%	
Other	3%	1%

Figure 3 – Genetic Profile of the Campbell and MacDonald Clans

This data shows that Campbells are a heavily a R1b Clan while the MacDonalds show a disproportionately high concentration of R1a . While I hesitate to oversimplify the analysis done to date, in general R1b can be grossly thought of as “Celtic” while R1a is considered “Norse” and “Viking”.

This is doubly interesting when one understands that the Campbell Chiefs have a Celtic origin while the MacDonald Chiefs trace their lineage to the famous chief Somerled. It was only recently that Professor Bryan Sykes of Oxford has determined that Somerled was a Norse and not a Celtic chief as so many have believed.

When we just compare R1b's of the two Clans, we can also identify differences in individual markers – i.e., specific mutations on the Y-chromosome. Figure 4 shows the “average” or R1b modal markers for each Clan.

Marker	Campbell	MacDonald	Marker	Campbell	MacDonald	Marker	Campbell	MacDonald
393	13	13	459a	9	9	GATA H4	12	11
390	24	24	459b	10	10	YCA II a	19	19
19	14	14	455	11	11	YCA II b	24	23
391	10	11	454	11	11	456	15	15
385a	11	11	447	25	25	607	15	15
385b	15	14	437	15	15	576	18	18
426	12	12	448	19	19	570	16	17
388	12	12	449	30	30	CDY a	38	37
439	12	12	464a	15	15	CDY b	39	39
389-1	13	13	464b	15	15	442	12	12
392	13	13	464c	16	17	438	12	12
389-2	30	29	464d	17	17			
458	20	17	460	11	11			

Figure 4 – Comparison of Modal Values of Campbell and MacDonald Clan Data

The MacDonald R1b modal is very close to the overall R1b modal. Only three marker differences separate them from the average R1b: DYS449=29, DYS456=15, CDYb=38. The Campbell modal also shares these differences.

However, a number of markers distinguish the Campbells from the MacDonalds and other Clans. These markers include.

- DYS391 – 11 is the most common value and twice as common as 10.
- DYS385b – 14 is the most common value and 2-3 times as common as 15
- DYS389ii -- 29 is the most common value and 4-5 times as common as 30. (DYS389ii=30 occurs in just 14% of the population.)
- DYS458 – 17 is the most common value. A value of 20 is extremely rare. It occurs 25 times less frequently than the most common value and occurs less frequently than 17, 18, 16, 19, and 15 (in decreasing order of occurrence). A value of 20 occurs in only 2% of the R1bs.
- DYS464c – A value of 16 is slightly less common than the most common value of 17
- GATA H4 – 11 is the most common value and 5 times as common as a value of 12. (GATA H4 = 12 occurs in just 13% of the R1bs)
- YCAIIb – 23 is the most common value. A value of 24 is rare and occurs in only 7% of the R1b population.
- DYS570 – 17 is the most common value and 5 times as common as a value of 16. (DYS570 = 16 occurs in just 14% of the R1bs)
- CDY a – 37 is the most common value and twice as common as a value of 38.

In particular, values of DYS458=20 and YCAIIb=24 are unique and appear to be defining markers of the core line of the Campbell Clan.

Population Genetics – A Recent Book

Bryan Sykes “Blood of the Isles” and its American version (“Saxons, Vikings, and Celts: The Genetic Roots of Britain and Ireland”) is another recent book in the emerging world of genetic genealogy. Sykes, a professor of genetics at Oxford, balances the science of population genetics with the need to provide a historical and anthropological context and comes up with a good and very readable story.

The book is laid out as follows: The early part of the book talks about DNA testing in general and Professor Sykes methods of DNA research. Later chapters follow the pattern of spending one chapter on the history/mythology/anthropology of the territory and following that with a chapter discussing the maternal (mtDNA) and paternal (Y) DNA results of that territory. Specific chapter pairs are included for Ireland, Scotland/Pictland, Wales, and England.

In the book Sykes coins names for the male tribes in the Isles, similar to his work in female DNA in the Seven Daughters of Eve. Sykes’ names for the major haplogroups which are present in Britain and Ireland, and which are defined in Figure 1, are:

Oisin (R1b): Descended from Iberian fishermen who migrated to Britain between 4,000 and 5,000BC and now considered the UK's indigenous inhabitants.

Wodan (I): Second most common clan arrived from Denmark during Viking invasions in the 9th century.

Sigurd (R1a): Descended from Viking invaders who settled in the British Isles from AD 793. One of the most common clans in the Shetland Isles, and areas of north and west Scotland.

Eshu (E3b): The wave of Oisin immigration was joined by the Eshu clan, which has roots in Africa. Eshu descendants are primarily found in coastal areas.

Re (J2): A second wave of arrivals which came from the Middle East. The Re were farmers who spread westwards across Europe.

Roman (G): Although the Romans ruled from AD 43 until 410, they left a tiny genetic footprint. For the first 200 years occupying forces were forbidden from marrying locally.

It is interesting to note that Sykes has named the R1b group – i.e., the Celtic or indigenous Briton people -- after Oisin the son of the mythical Celtic leader Finn mac Cumhaill (a/k/a Finn mac Cool).

As described in History of Clan Campbell, Vol.1, Finn mac Cumhaill was mythical Irish hero who became trapped in a love triangle with his lady friend Grainn and Diarmid

O'Duibne. Thinking that he would eliminate Diarmid and gain his true love, he gave Diarmid the task of killing a fierce wild boar that terrorized his village. After the Battle of the Boar was fought and won and Diarmid was basking in his glory, Finn challenged him to measure the hide of the slain boar with his naked feet. Unfortunately, unknown to Diarmid, the bristles of the wild boar were poisonous. As Diarmid walked the length of the slain creature to see how long his trophy measured, one of the poisonous bristles pricked Diarmid and he subsequently died a terrible and agonizing death.

It is from this legend of Diarmid O'Duibne and Finn mac Cumhaill that the boar's head as the crest of the Campbell Clan originated.

Could it be that Cumhaill is a variant of Campbell and maybe Finn and Diarmid were really related? Maybe Professor Sykes knows something that we don't in naming the DNA tribe of the indigenous Celts after the son of Finn mac Cumhaill? Only time and more research will tell.

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