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Table S1: Distribution (%) of *var* transcripts by DBL α domain type

| | Uncomplicated (n=8) | Severe malaria (n=36) | P§ | Severe anaemia (n=21) | Cerebral malaria (n=9) | P§ |
|--|--------------------------------|----------------------------------|-----------|----------------------------------|-----------------------------------|-----------|
| Domain subtypes | Median [IQR] | Median [IQR] | | Median [IQR] | Median [IQR] | |
| DBL α 1 | 9 [0 - 49] | 23 [11- 57] | 0.32 | 20 [7 - 57] | 57 [21- 77] | 0.10 |
| DBL α 1.[1/2/4/7] | 4 [0 - 9] | 19 [9 - 57] | 0.01 | 18 [4- 44] | 57 [14- 8] | 0.12 |
| DBL α 1.5 | 0 [0 - 0] | 0 [0 - 0] | 0.22 | 0 [0 - 0] | 0 [0 - 0] | 0.51 |
| DBL α 1.6 | 0 [0 - 0] | 0 [0 - 0] | 0.22 | 0 [0 - 0] | 0 [0 - 0] | 0.13 |
| DBL α 1.8 | 0 [0 - 0] | 0 [0 - 0] | 1.00 | 0 [0 - 0] | 0 [0 - 0] | 0.44 |
| DBL α 2 | 0 [0 - 24] | 13 [0 - 39] | 0.24 | 16 [0 - 42] | 0 [0 - 19] | 0.21 |
| DBL α 0 | 43.7 [21.9 - 84.7] | 20.8 [0 - 35.1] | 0.05 | 14.1 [0 - 32.1] | 23.0 [5.4 - 25.8] | 0.80 |
| VAR1 | 0 [0 - 2] | 0 [0 - 0] | 1.00 | 0 [0 - 0] | 0 [0 - 0] | 0.83 |
| DBL α 1.[1/2/4/7] +DBL α 2 + DBL α 2 prediction* | 9 [4 - 42] | 65 [28- 83] | 0.005 | 68 [28- 84] | 63 [38- 68] | 0.74 |
| DBL α 1.[1/2/4/7] : (DBL α 2+DBL α 2- prediction*) ratio [§] | 1.0 [0.2-8.9] | 0.9 [0.3 - 13.6] | 0.87 | 0.6 [0.2 - 3.2] | 7.0 [0.7 - 66.6] | 0.09 |

§ P values were calculated using Wilcoxon rank sum test

* Transcripts annotated with a DBL α 1 or DBL α 2 domain or predicted by the DBL α tag sequence to encode a DBL α 2 domain.

§ The patient-wise ratio between the level of transcripts encoding group A type DBL α domains (DBL α 1.[1/2/4/7]) and group B type DBL α domains (DBL α 2) coupled to CIDR α 1.[4-7] and CIDR α 1.[1/8] types, respectively, was calculated as follows:
 $(\sum \text{DBL}\alpha 1.[1/2/4/7] + 0.01) : (\sum \text{DBL}\alpha 2/\alpha 2\text{-prediction} + 0.01)$.

Table S2: Proportions (%) of *var* transcripts encoding the DBL domains listed

| | Uncomplicated (<i>n</i> =8) | Severe malaria (<i>n</i> =36) | P§ |
|------------------|---------------------------------|-----------------------------------|------|
| Domain subtypes# | Median [IQR] | Median [IQR] | |
| DBL2β | 49 [20 - 65] | 66 [40 - 79] | 0.17 |
| DBL2β1 | 0 [0 - 0] | 0 [0 - 14] | 0.04 |
| DBL2β3 | 0 [0 - 34] | 12 [0 - 26] | 0.74 |
| DBL2β5 | 0 [0 - 26] | 0 [0 - 11] | 0.57 |
| DBL2β12 | 0 [0 - 4] | 4 [0 - 30] | 0.13 |
| DBL2β A type* | 19 [0 - 47] | 48 [23 - 75] | 0.05 |
| DBL2β BC type§ | 5 [0 - 41] | 0 [0 - 16] | 0.31 |
| DBL2γ | 0 [0 - 3] | 0 [0 - 4] | 1 |
| DBL2δ | 34 [6 - 41] | 7 [0 - 22] | 0.05 |
| DBLε/ζ | 11 [6 - 62] | 4 [0 - 20] | 0.13 |

The number before the Greek letter reflects that the domain is the second DBL domain encoded by the gene.

§ P values were calculated using Wilcoxon rank sum test.

* DBL2β A type: DBLβ [1/3/6/7/9/11/12]. DBLβ12 is part of the group B/A chimeric DC8 PfEMP1; DBLβ12 was here considered a group A domain.

§DBLβBC types: DBLβ[2/4/5/8/10/13]

Figure S1. Annotation of *var* genes expressed in patients suffering from malaria

Patient ID and clinical symptoms/grouping cerebral malaria (CM), severe anaemia (SA), hyper-parasitaemia (hyper), respiratory distress (RD) or uncomplicated malaria (UM) is shown. Patients who died are also indicated (†). Domain composition of the six most abundant *var* transcripts in each patient is shown. For some genes the long range PCR amplification was not successful and these genes are annotated based on the DBLα-tag sequence (*Group A*, *Group B/C*, *DBLα2 prediction* or *VARI*). Transcript proportions are here given as the un-normalized proportion of the total DBLα-tag sequence read count within the patient.

| Patient | Syndrome(s) | Haemoglobin (g/dL) | Blantyre score | Gene | Proportion | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | | | | | |
|---------|-------------|--------------------|----------------|---------|------------|------------------|-----------|--------|---------|---------|---------|--------|--------|--------|--------|--|--|--|--|
| 1734 | SA RD | 3.7 | 5 | 1734-1 | 11% | DBLa0.11 | CIDRa2.1 | DBLb5 | DBLb1 | CIDRy11 | Intron | | | | | | | | |
| | | | | 1734-2 | 9% | DBLa0.13 | CIDRa2.8 | ... | | | | | | | | | | | |
| | | | | 1734-3 | 7% | Group B/C | | | | | | | | | | | | | |
| | | | | 1734-4 | 6% | DBLa0.15 | CIDRa2.10 | DBLb1 | CIDRy7 | ... | | | | | | | | | |
| | | | | 1734-5 | 5% | DBLa0.4 | CIDRa6 | DBLb5 | DBLy12 | DBLb7 | CIDRy6 | DBLc1 | DBLe14 | Intron | | | | | |
| | | | | 1734-6 | 4% | Group B/C | | | | | | | | | | | | | |
| 1841 | SA | 4.9 | 5 | 1841-1 | 26% | DBLa1.2 | CIDRa1.5a | DBLb6 | DBLy2 | DBLy4 | DBLb1 | CIDRb1 | Intron | | | | | | |
| | | | | 1841-2 | 15% | DBLa2 | CIDRa1.8a | DBLb12 | DBLc3 | DBLe6 | DBLb1 | CIDRb1 | Intron | | | | | | |
| | | | | 1841-3 | 14% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy4 | DBLb1 | CIDRy11 | Intron | | | | | | | |
| | | | | 1841-4 | 11% | DBLa2 prediction | | | | | | | | | | | | | |
| | | | | 1841-5 | 9% | Group A | | | | | | | | | | | | | |
| | | | | 1841-6 | 6% | Group A | | | | | | | | | | | | | |
| 1861 | SA | 4.7 | 5 | 1861-1 | 36% | Group B/C | | | | | | | | | | | | | |
| | | | | 1861-2 | 31% | DBLa2 prediction | | | | | | | | | | | | | |
| | | | | 1861-3 | 8% | DBLa0.21 | CIDRa2.1 | DBLb1 | CIDRy12 | Intron | | | | | | | | | |
| | | | | 1861-4 | 6% | DBLa0.8 | CIDRa3.1 | DBLb5 | DBLy10 | DBLb1 | CIDRb6 | Intron | | | | | | | |
| | | | | 1861-5 | 6% | Group B/C | | | | | | | | | | | | | |
| | | | | 1861-6 | 4% | Group A | | | | | | | | | | | | | |
| 1869 | SA | 2.2 | 5 | 1869-1 | 10% | DBLa0.1 | CIDRa3.2 | DBLb1 | CIDRb1 | Intron | | | | | | | | | |
| | | | | 1869-2 | 8% | DBLa0.21 | CIDRa2.1 | DBLb2 | DBLb1 | CIDRb6 | DBLy3 | DBLc4 | Intron | | | | | | |
| | | | | 1869-3 | 8% | DBLa2 | CIDRa1.8a | DBLb3 | DBLy11 | DBLc4 | Intron | | | | | | | | |
| | | | | 1869-4 | 8% | DBLa1.1 | CIDRa1.7 | DBLb3 | DBLy2 | DBLy4 | DBLy2 | DBLb1 | CIDRb6 | Intron | | | | | |
| | | | | 1869-5 | 8% | DBLa1.4 | CIDRa1.3 | DBLb1 | DBLy15 | DBLe1 | DBLy8 | DBLc1 | DBLe5 | Intron | | | | | |
| | | | | 1869-6 | 6% | Group B/C | | | | | | | | | | | | | |
| 1920 | SA † | 4.8 | 4 | 1920-1 | 59% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy6 | DBLb4 | CIDRb1 | Intron | | | | | | | |
| | | | | 1920-2 | 10% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLy2 | DBLy4 | Intron | | | | | | | | |
| | | | | 1920-3 | 8% | DBLa2 prediction | | | | | | | | | | | | | |
| | | | | 1920-4 | 5% | Group A | | | | | | | | | | | | | |
| | | | | 1920-5 | 3% | Group A | | | | | | | | | | | | | |
| | | | | 1920-6 | 3% | Group A | | | | | | | | | | | | | |
| 1922 | SA | 3.7 | 5 | 1922-1 | 31% | Group B/C | | | | | | | | | | | | | |
| | | | | 1922-2 | 21% | DBLa0.19 | CIDRa6 | DBLb1 | CIDRb1 | Intron | | | | | | | | | |
| | | | | 1922-4 | 16% | DBLa0.19 ... | | | | | | | | | | | | | |
| | | | | 1922-3 | 15% | DBLa0.6 | CIDRa3.1 | DBLb5 | DBLy13 | DBLb1 | CIDRb1 | Intron | | | | | | | |
| | | | | 1922-5 | 12% | DBLa0.5 | CIDRa2.6 | DBLy2 | DBLb1 | CIDRb1 | ... | | | | | | | | |
| | | | | 1922-6 | 3% | Group B/C | | | | | | | | | | | | | |
| 1931 | SA | 3.8 | 5 | 1931-1 | 24% | DBLa0.15 | CIDRa3.1 | DBLb5 | DBLy9 | DBLb1 | CIDRy9 | DBLe2 | DBLc3 | DBLe6 | Intron | | | | |
| | | | | 1931-2 | 21% | DBLa2 prediction | | | | | | | | | | | | | |
| | | | | 1931-3 | 10% | DBLa0.6 | CIDRa3.1 | DBLy5 | DBLb1 | CIDRb1 | Intron | | | | | | | | |
| | | | | 1931-4 | 8% | DBLa0.13 | CIDRa2.3 | DBLb3 | DBLy5 | DBLb1 | CIDRb5 | Intron | | | | | | | |
| | | | | 1931-5 | 7% | DBLa2 | CIDRa1.1 | DBLb3 | DBLy13 | DBLc2 | DBLe4 | Intron | | | | | | | |
| | | | | 1931-6 | 6% | Group A | | | | | | | | | | | | | |
| 1939 | SA | 4.1 | 5 | 1939-1 | 24% | DBLa1.7 | CIDRa1.4 | DBLb1 | DBLy10 | DBLb1 | CIDRb5 | Intron | | | | | | | |
| | | | | 1939-2 | 22% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy6 | DBLy4 | DBLc5 | ... | | | | | | | |
| | | | | 1939-3 | 12% | DBLa1.1 | CIDRa1.4 | DBLb12 | DBLy2 | DBLy4 | DBLb1 | CIDRb5 | Intron | | | | | | |
| | | | | 1939-4 | 7% | DBLa1.7 | CIDRa1.4 | DBLb1 | DBLb6 | DBLy2 | DBLy11 | DBLb1 | CIDRb1 | Intron | | | | | |
| | | | | 1939-5 | 6% | DBLa2 | CIDRa1.8b | DBLb12 | DBLy4 | DBLb1 | CIDRb6 | ... | | | | | | | |
| | | | | 1939-6 | 5% | Group A | | | | | | | | | | | | | |
| 1965 | SA | 4.4 | 5 | 1965-1 | 30% | DBLa2 | CIDRa1.8a | DBLb12 | DBLy4 | DBLb4 | CIDRb1 | ... | | | | | | | |
| | | | | 1965-3 | 27% | DBLa2 | CIDRa1.8a | DBLb12 | DBLy4 | ... | | | | | | | | | |
| | | | | 1965-5 | 11% | DBLa1.2 | CIDRa1.5b | DBLb3 | DBLy17 | DBLy14 | DBLc5 | DBLe4 | Intron | | | | | | |
| | | | | 1965-2 | 9% | DBLa1.2 | CIDRa1.5a | DBLy17 | DBLb5 | CIDRb4 | DBLb6 | DBLy13 | Intron | | | | | | |
| | | | | 1965-7 | 6% | DBLa1.2 | CIDRa1.6b | DBLb3 | DBLy12 | DBLb5 | CIDRb4 | DBLe2 | ... | | | | | | |
| | | | | 1965-11 | 5% | Group A | | | | | | | | | | | | | |
| 1971 | SA | 3.3 | 5 | 1971-1 | 21% | DBLa0.5 | CIDRa2.5 | DBLb1 | CIDRb1 | DBLc6 | DBLe6 | Intron | | | | | | | |
| | | | | 1971-2 | 14% | Group A | | | | | | | | | | | | | |
| | | | | 1971-3 | 12% | DBLa2 | CIDRa1.8a | DBLb12 | DBLc1 | DBLe6 | DBLb1 | CIDRb1 | Intron | | | | | | |
| | | | | 1971-4 | 12% | DBLa1.2 | CIDRa1.4 | DBLb7 | DBLy13 | DBLb7 | CIDRb4 | DBLb7 | DBLy2 | ... | | | | | |
| | | | | 1971-5 | 11% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy4 | DBLb1 | CIDRy11 | Intron | | | | | | | |
| | | | | 1971-6 | 6% | Group A | | | | | | | | | | | | | |
| 2021 | SA | 4.4 | 5 | 2021-1 | 21% | DBLa0.13 | CIDRa2.3 | DBLb1 | CIDRy5 | Intron | | | | | | | | | |
| | | | | 2021-2 | 9% | DBLa1.1 | CIDRa1.7 | DBLb1 | DBLy16 | DBLy2 | DBLb1 | CIDRb1 | Intron | | | | | | |
| | | | | 2021-3 | 8% | DBLa0.9 | CIDRa2.7 | DBLb1 | CIDRb1 | Intron | | | | | | | | | |
| | | | | 2021-5 | 7% | DBLa0.19 | CIDRa3.4 | ... | | | | | | | | | | | |
| | | | | 2021-4 | 6% | DBLa0.18 | CIDRa4 | DBLb5 | DBLb1 | ... | | | | | | | | | |
| | | | | 2021-6 | 5% | Group B/C | | | | | | | | | | | | | |
| 2052 | SA | 3.4 | 5 | 2052-1 | 21% | DBLa1.8 | CIDRb4 | DBLy2 | DBLy11 | Intron | | | | | | | | | |
| | | | | 2052-2 | 17% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy6 | DBLb1 | CIDRb1 | Intron | | | | | | | |
| | | | | 2052-3 | 13% | DBLa1.8 | CIDRb2 | DBLy7 | DBLe11 | DBLc3 | DBLe6 | Intron | | | | | | | |
| | | | | 2052-4 | 7% | DBLa0.9 | CIDRa2.2 | DBLb1 | CIDRb1 | Intron | | | | | | | | | |
| | | | | 2052-5 | 6% | DBLa1.1 | CIDRa1.2 | DBLb11 | DBLy1 | DBLe1 | DBLy8 | DBLc1 | DBLe5 | Intron | | | | | |
| | | | | 2052-6 | 6% | Group B/C | | | | | | | | | | | | | |
| 2083 | SA | 4.1 | 5 | 2083-1 | 21% | DBLa1.1 | CIDRa1.7 | DBLb1 | DBLy2 | DBLy4 | DBLy2 | DBLc3 | DBLe6 | Intron | | | | | |
| | | | | 2083-2 | 13% | DBLa1.2 | CIDRa1.7 | DBLb3 | DBLb6 | DBLy13 | DBLb1 | CIDRb6 | Intron | | | | | | |
| | | | | 2083-3 | 13% | DBLa2 | CIDRa1.8a | DBLb12 | DBLy17 | DBLb1 | CIDRb5 | Intron | | | | | | | |
| | | | | 2083-4 | 13% | DBLa2 | CIDRa1.1 | DBLb1 | DBLy16 | DBLy14 | ... | | | | | | | | |
| | | | | 2083-5 | 10% | DBLa1.2 | CIDRa1.6a | DBLb12 | DBLy6 | DBLy2 | DBLb1 | CIDRb6 | Intron | | | | | | |
| | | | | 2083-6 | 7% | Group A | | | | | | | | | | | | | |
| 2110 | SA RD | 1.7 | 5 | 2110-1 | 39% | DBLa1.2 | CIDRa1.5a | DBLb9 | DBLe13 | DBLy11 | DBLb7 | CIDRb4 | Intron | | | | | | |
| | | | | 2110-2 | 15% | DBLa0.18 | CIDRa6 | DBLb5 | DBLb1 | ... | | | | | | | | | |
| | | | | 2110-3 | 15% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy6 | DBLb1 | CIDRb5 | Intron | | | | | | | |
| | | | | 2110-4 | 12% | VAR1 | | | | | | | | | | | | | |
| | | | | 2110-5 | 7% | Group A | | | | | | | | | | | | | |
| | | | | 2110-6 | 6% | Group A | | | | | | | | | | | | | |

| Patient | Syndrome(s) | Haemoglobin (g/dl) | Blantyre score | Gene | Proportion | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | | | |
|---------|----------------|--------------------|----------------|---------|------------|------------------|-----------|--------|---------|--------|--------|--------|--------|--------|--------|--|--|
| 2114 | SA | 3.8 | 5 | 2114-1 | 25% | DBLa0.11 | CIDRa2.4 | DBLs1 | CIDRb1 | Intron | | | | | | | |
| | | | | 2114-2 | 19% | DBLa1.1 | CIDRa1.7 | DBLb11 | DBLy2 | DBLy9 | DBLs1 | CIDRb3 | Intron | | | | |
| | | | | 2114-3 | 16% | DBLa0.9 | ... | | | | | | | | | | |
| | | | | 2114-4 | 16% | Group A | | | | | | | | | | | |
| | | | | 2114-5 | 8% | DBLa1.5 | CIDRb1 | DBLb3 | DBLy12 | DBLy2 | Intron | | | | | | |
| | | | | 2114-6 | 3% | Group A | | | | | | | | | | | |
| 2120 | SA | 3.9 | 5 | 2120-1 | 89% | DBLa2 prediction | | | | | | | | | | | |
| | | | | 2120-2 | 9% | DBLa1.7 | CIDRa3 | DBLb6 | DBLy2 | DBLy11 | ... | | | | | | |
| | | | | 2120-3 | 2% | DBLa1.4 | CIDRa1.3 | DBLb1 | DBLy15 | DBLe1 | DBLy8 | DBLc2 | DBLe5 | Intron | VAR1 | | |
| | | | | 2121-1 | 19% | Group A | | | | | | | | | | | |
| | | | | 2121-2 | 14% | DBLa2 | CIDRa1.1 | DBLb1 | DBLy4 | DBLs1 | CIDRb6 | Intron | | | | | |
| | | | | 2121-3 | 9% | Group A | | | | | | | | | | | |
| 2121 | SA | 4.5 | 5 | 2121-4 | 6% | DBLa0.11 | CIDRa2.4 | DBLs1 | CIDRb1 | Intron | | | | | | | |
| | | | | 2121-5 | 5% | Group A | | | | | | | | | | | |
| | | | | 2121-6 | 5% | Group A | | | | | | | | | | | |
| | | | | 2132-1 | 23% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLb7 | DBLs1 | CIDRy9 | Intron | | | | | |
| | | | | 2132-2 | 17% | DBLa1.7 | CIDRa1.4 | DBLb1 | DBLy13 | DBLy12 | DBLs5 | CIDRb4 | DBLb9 | DBLy9 | Intron | | |
| | | | | 2132-3 | 10% | DBLa1.1 | CIDRa1.7 | DBLb1 | DBLy2 | DBLy4 | DBLy2 | DBLc3 | DBLe6 | Intron | | | |
| 2132 | SA RD | 4.4 | 3 | 2132-4 | 7% | DBLa0.1 | CIDRa3.4 | ... | | | | | | | | | |
| | | | | 2132-5 | 5% | DBLa1.2 | CIDRa1.1 | DBLb12 | DBLy11 | DBLy6 | Intron | | | | | | |
| | | | | 2132-6 | 4% | Group B/C | | | | | | | | | | | |
| | | | | 2142-1 | 42% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy4 | DBLs1 | CIDRb1 | Intron | | | | | |
| | | | | 2142-2 | 12% | DBLa0.6 | CIDRa3.4 | DBLs5 | DBLy16 | DBLs1 | CIDRb1 | Intron | | | | | |
| | | | | 2142-3 | 11% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy4 | DBLs1 | CIDRb1 | Intron | | | | | |
| 2142 | SA | 3.4 | 5 | 2142-4 | 7% | DBLa2 | CIDRa1.8a | DBLb12 | DBLy4 | DBLc3 | DBLe12 | Intron | | | | | |
| | | | | 2142-5 | 5% | DBLa1.4 | CIDRy3 | DBLb6 | DBLy2 | DBLy12 | DBLs1 | CIDRb1 | Intron | | | | |
| | | | | 2142-6 | 5% | Group A | | | | | | | | | | | |
| | | | | 2157-1 | 17% | DBLa1.8 | CIDRb2 | DBLy7 | DBLe11 | DBLc2 | DBLe6 | Intron | | | | | |
| | | | | 2157-2 | 17% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLy2 | DBLy12 | DBLs5 | CIDRb5 | Intron | | | | |
| | | | | 2157-3 | 15% | DBLa2 | CIDRa1.8b | DBLb12 | DBLs5 | DBLs1 | CIDRb1 | Intron | | | | | |
| 2157 | SA RD | 3.8 | 3 | 2157-4 | 7% | Group A | | | | | | | | | | | |
| | | | | 2157-5 | 6% | DBLa2 prediction | | | | | | | | | | | |
| | | | | 2157-6 | 5% | Group B/C | | | | | | | | | | | |
| | | | | 2268-1 | 59% | DBLa2 | CIDRa1.1 | DBLb3 | DBLy14 | DBLc5 | DBLe4 | Intron | | | | | |
| | | | | 2268-2 | 21% | DBLa1.4 | CIDRa1.3 | DBLb1 | DBLy15 | DBLe1 | DBLy8 | DBLc2 | DBLe5 | Intron | VAR1 | | |
| | | | | 2268-3 | 4% | Group B/C | | | | | | | | | | | |
| 2268 | SA | 4.5 | 5 | 2268-4 | 3% | Group B/C | | | | | | | | | | | |
| | | | | 2268-5 | 3% | Group B/C | | | | | | | | | | | |
| | | | | 2268-6 | 3% | Group B/C | | | | | | | | | | | |
| | | | | 1873-1 | 42% | Group B/C | | | | | | | | | | | |
| | | | | 1873-4 | 23% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy13 | DBLs1 | CIDRb1 | Intron | | | | | |
| | | | | 1873-2 | 19% | DBLa2 | CIDRa1.1 | DBLb3 | DBLy16 | DBLs5 | CIDRb4 | DBLb7 | DBLy12 | Intron | | | |
| 1873 | CM RD | N/A | 0 | 1873-3 | 9% | DBLa0.13 | CIDRa2.3 | DBLs1 | CIDRb7 | Intron | | | | | | | |
| | | | | 1873-5 | 4% | VAR1 | | | | | | | | | | | |
| | | | | 1873-6 | 2% | Group B/C | | | | | | | | | | | |
| | | | | 1890-1 | 24% | DBLa0.11 | CIDRa2.4 | DBLs1 | CIDRb1 | Intron | | | | | | | |
| | | | | 1890-2 | 18% | DBLa1.2 | CIDRa1.5a | DBLb3 | DBLy12 | DBLs5 | CIDRb4 | DBLb9 | DBLy6 | Intron | | | |
| | | | | 1890-3 | 15% | DBLa2 | CIDRa1.1 | DBLb5 | DBLs1 | CIDRb1 | Intron | | | | | | |
| 1890 | Hyper | 6.8 | 5 | 1890-4 | 10% | DBLa2 prediction | | | | | | | | | | | |
| | | | | 1890-5 | 5% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLb3 | DBLy11 | ... | | | | | | |
| | | | | 1890-6 | 3% | Group A | | | | | | | | | | | |
| | | | | 1914-21 | 37% | DBLa1.7 | CIDRa1.4 | DBLb1 | DBLb6 | DBLy11 | DBLs1 | CIDRy9 | Intron | | | | |
| | | | | 1914-14 | 26% | DBLa1.7 | CIDRa1.7 | DBLb6 | DBLy2 | DBLy6 | DBLs4 | CIDRb1 | Intron | | | | |
| | | | | 1914-12 | 22% | DBLa1.8 | CIDRy3 | DBLy7 | DBLs5 | CIDRb3 | DBLb9 | DBLy11 | ... | | | | |
| 1914 | CM Hyper | 6.9 | 2 | 1914-20 | 4% | DBLa0.10 | CIDRa2.2 | DBLs1 | CIDRy11 | Intron | | | | | | | |
| | | | | 1914-16 | 2% | Group B/C | | | | | | | | | | | |
| | | | | 1914-27 | 2% | Group B/C | | | | | | | | | | | |
| | | | | 1918-1 | 26% | DBLa1.2 | CIDRa1.5a | DBLb7 | DBLy10 | DBLy11 | DBLy4 | DBLs1 | CIDRb4 | ... | | | |
| | | | | 1918-2 | 17% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLy11 | DBLy2 | DBLs1 | CIDRb1 | Intron | | | | |
| | | | | 1918-5 | 9% | DBLa1.2 | CIDRa1.5b | DBLy17 | DBLs5 | CIDRb3 | DBLb7 | DBLy2 | Intron | | | | |
| 1918 | CM | N/A | 0 | 1918-3 | 9% | DBLa1.2 | CIDRa1.4 | DBLb1 | DBLb7 | DBLy13 | DBLs6 | CIDRb2 | Intron | | | | |
| | | | | 1918-4 | 8% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy11 | DBLs1 | CIDRb1 | Intron | | | | | |
| | | | | 1918-6 | 4% | Group A | | | | | | | | | | | |
| | | | | 1919-1 | 59% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy6 | DBLs4 | ... | | | | | | |
| | | | | 1919-2 | 21% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLy2 | DBLy4 | Intron | | | | | | |
| | | | | 1919-3 | 10% | DBLa1.7 | CIDRa1.7 | DBLb1 | DBLy11 | DBLs1 | CIDRy9 | Intron | | | | | |
| 1919 | CM SA RD Hyper | 3.4 | 2 | 1919-4 | 7% | DBLa2 | CIDRa1.1 | DBLb12 | DBLy4 | DBLy14 | DBLc5 | DBLe4 | Intron | | | | |
| | | | | 1919-5 | 3% | Group A | | | | | | | | | | | |
| | | | | 1945-2 | 14% | Group A | | | | | | | | | | | |
| | | | | 1945-1 | 12% | DBLa1.2 | CIDRa1.7 | DBLb3 | DBLy2 | DBLy11 | DBLy2 | DBLs1 | CIDRb1 | Intron | | | |
| | | | | 1945-4 | 8% | DBLa0.1 | ... | | | | | | | | | | |
| | | | | 1945-3 | 8% | DBLa1.8 | CIDRy3 | DBLy7 | DBLc5 | DBLe11 | DBLe12 | Intron | | | | | |
| 1945 | CM | 7.5 | 0 | 1945-5 | 8% | DBLa2 | CIDRa1.8b | DBLb12 | DBLy4 | DBLs1 | CIDRb5 | Intron | | | | | |
| | | | | 1945-6 | 7% | Group A | | | | | | | | | | | |
| | | | | 1950-1 | 30% | DBLa1.2 | CIDRa1.5a | DBLb6 | DBLy11 | ... | | | | | | | |
| | | | | 1950-2 | 9% | DBLa1.2 | CIDRa1.6b | DBLb3 | DBLy14 | DBLs1 | CIDRb1 | Intron | | | | | |
| | | | | 1950-3 | 6% | DBLa0.24 | CIDRa6 | DBLs1 | CIDRb1 | Intron | | | | | | | |
| | | | | 1950-4 | 5% | Group B/C | | | | | | | | | | | |
| 1950 | CM † | 6.1 | 2 | 1950-5 | 5% | Group B/C | | | | | | | | | | | |
| | | | | 1950-6 | 4% | Group B/C | | | | | | | | | | | |
| | | | | 1974-1 | 14% | DBLa1.6 | CIDRy3 | DBLy11 | DBLs5 | CIDRb3 | DBLb6 | Intron | | | | | |
| | | | | 1974-2 | 13% | DBLa0.11 | CIDRa2.4 | DBLs1 | CIDRb1 | DBLy10 | Intron | | | | | | |
| | | | | 1974-3 | 11% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLb7 | DBLy2 | DBLy17 | DBLs1 | CIDRb1 | Intron | | | |
| | | | | 1974-4 | 9% | DBLa1.1 | CIDRa1.7 | DBLb1 | DBLy6 | DBLy11 | DBLs1 | CIDRb1 | Intron | | | | |
| 1974 | CM | 8.8 | 2 | 1974-5 | 8% | DBLa1.7 | CIDRa1.4 | DBLb3 | DBLy11 | DBLy11 | DBLy6 | DBLs1 | CIDRb1 | Intron | | | |
| | | | | 1974-6 | 6% | Group B/C | | | | | | | | | | | |

| Patient | Syndrome(s) | Haemoglobin (g/dL) | Blantyre score | Gene | Proportion | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | | |
|---------|-----------------------|--------------------|----------------|---------|------------|------------------|-----------|--------|--------|---------|--------|--------|--------|--------|------|--|
| 1983 | CM SA RD | 5 | 1 | 1983-4 | 10% | DBL1.1 | CIDRa1.5a | DBL83 | DBLy12 | DBL45 | CIDR83 | DBL87 | DBLy2 | Intron | | |
| | | | | 1983-3 | 10% | DBLa2 | CIDRa1.1 | DBL812 | DBLy12 | DBL61 | CIDR81 | Intron | | | | |
| | | | | 1983-9 | 10% | DBLa0.15 | CIDRa2.5 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1983-1 | 9% | DBLa2 | CIDRa1.1 | DBL812 | DBLy4 | DBL61 | CIDR81 | ... | | | | |
| | | | | 1983-7 | 6% | DBLa1.4 | CIDRa1.7 | DBL81 | DBL87 | DBLy5 | DBLy11 | DBL61 | CIDR84 | Intron | | |
| | | | | 1983-13 | 6% | DBLa1.2 | CIDRa1.5b | DBL86 | DBLy17 | DBLy14 | DBL75 | DBLe4 | Intron | | | |
| 1994 | CM | 5.8 | 2 | 1994-1 | 23% | Group B/C | | | | | | | | | | |
| | | | | 1994-2 | 14% | DBLa1.7 | CIDRa1.4 | DBL83 | DBLy13 | DBLy2 | DBLy4 | DBL61 | CIDR81 | Intron | | |
| | | | | 1994-3 | 10% | DBLa0.9 | CIDRa2.2 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1994-4 | 9% | Group A | | | | | | | | | | |
| | | | | 1994-5 | 7% | Group B/C | | | | | | | | | | |
| | | | | 1994-6 | 5% | Group B/C | | | | | | | | | | |
| 1995 | CM SA RD | 3.7 | 1 | 1995-2 | 18% | DBLa0.5 | CIDRa2.3 | DBL810 | DBLy5 | DBL61 | ... | | | | | |
| | | | | 1995-1 | 17% | DBLa0.5 | CIDRa2.3 | DBL61 | CIDR81 | ... | | | | | | |
| | | | | 1995-3 | 9% | DBLa0.19 | CIDRa2.9 | DBL61 | CIDR83 | Intron | | | | | | |
| | | | | 1995-4 | 5% | Group B/C | | | | | | | | | | |
| | | | | 1995-5 | 5% | Group B/C | | | | | | | | | | |
| | | | | 1995-6 | 4% | Group B/C | | | | | | | | | | |
| 1996 | CM SA | 4.1 | 2 | 1996-1 | 39% | DBLa0.18 | CIDRa5 | DBL85 | DBLy13 | DBL63 | CIDRy2 | DBLe4 | Intron | | | |
| | | | | 1996-2 | 13% | DBLa0.15 | CIDRa3.1 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1996-3 | 7% | DBLa1.1 | CIDRa1.7 | DBL83 | DBLy2 | DBLy6 | DBL61 | CIDR81 | Intron | | | |
| | | | | 1996-4 | 4% | Group A | | | | | | | | | | |
| | | | | 1996-5 | 4% | Group B/C | | | | | | | | | | |
| | | | | 1996-6 | 3% | Group B/C | | | | | | | | | | |
| 2014 | CM | 8.2 | 2 | 2014-1 | 25% | DBLa1.7 | CIDRa1.4 | DBL83 | DBLy11 | DBLy2 | DBLy4 | DBLy12 | DBL61 | ... | | |
| | | | | 2014-2 | 6% | DBLa0.11 | CIDRa2.1 | DBL82 | DBL61 | ... | | | | | | |
| | | | | 2014-3 | 6% | DBLa0.13 | CIDRa2.5 | DBL61 | CIDR85 | Intron | | | | | | |
| | | | | 2014-4 | 6% | DBLa1.4 | CIDRa1.3 | DBL81 | DBLy15 | DBLe1 | DBLy8 | DBL71 | DBLe5 | Intron | VAR1 | |
| | | | | 2014-5 | 5% | DBLa2 prediction | | | | | | | | | | |
| | | | | 2014-6 | 4% | DBLa1.1 | | | | | | | | | | |
| 2053 | CM Hyper | 10.5 | 2 | 2053-2 | 16% | DBLa0.3 | CIDRa3.4 | DBL61 | CIDR81 | ... | | | | | | |
| | | | | 2053-3 | 15% | DBLa2 | CIDRa1.8b | DBL812 | DBLy4 | DBL61 | CIDR86 | Intron | | | | |
| | | | | 2053-1 | 13% | DBLa1.7 | CIDRa1.4 | DBL83 | DBL83 | DBLy11 | DBL61 | CIDR81 | Intron | | | |
| | | | | 2053-4 | 9% | DBLa0.13 | CIDRa2.3 | DBL85 | DBL61 | CIDR86 | Intron | | | | | |
| | | | | 2053-5 | 8% | DBLa2 prediction | | | | | | | | | | |
| | | | | 2053-6 | 7% | Group B/C | | | | | | | | | | |
| 2065 | Hyper | 5.1 | 5 | 2065-1 | 22% | DBLa0.8 | CIDRa2.6 | DBL88 | DBL61 | CIDR81 | Intron | | | | | |
| | | | | 2065-3 | 19% | DBLa1.2 | CIDRa1.1 | DBL812 | DBLy11 | DBLy2 | ... | | | | | |
| | | | | 2065-2 | 19% | DBLa0.22 | CIDRa3.1 | DBL85 | DBLy5 | DBL61 | CIDR81 | Intron | | | | |
| | | | | 2065-4 | 17% | DBLa1.1 | CIDRa1.2 | ... | | | | | | VAR1 | | |
| | | | | 2065-5 | 7% | Group B/C | | | | | | | | | | |
| | | | | 2065-6 | 6% | Group B/C | | | | | | | | | | |
| 1712 | UM | 5.1 | 5 | 1712-1 | 8% | DBLa1.2 | CIDRa1.5a | DBL86 | DBLy12 | DBL66 | CIDR83 | DBL89 | DBLy11 | ... | | |
| | | | | 1712-2 | 7% | DBLa2 prediction | | | | | | | | | | |
| | | | | 1712-3 | 6% | DBLa0.19 | CIDRa2.10 | DBL810 | DBL61 | CIDR81 | Intron | | | | | |
| | | | | 1712-4 | 6% | DBLa2 | CIDRa1.8b | DBL812 | DBLy4 | DBL61 | CIDR81 | Intron | | | | |
| | | | | 1712-5 | 5% | DBLa0.16 | CIDRa3.4 | DBL88 | DBL61 | CIDRy12 | Intron | | | | | |
| | | | | 1712-6 | 5% | Group B/C | | | | | | | | | | |
| 1702 | UM | 8 | 5 | 1702-1 | 50% | DBLa2 | CIDRa1.1 | DBL83 | DBLy11 | DBL4 | ... | | | | | |
| | | | | 1702-2 | 14% | DBLa0.1 | CIDRa3.1 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1702-3 | 12% | DBLa2 | CIDRa1.8b | DBL812 | DBL61 | CIDR81 | Intron | | | | | |
| | | | | 1702-4 | 4% | Group A | | | | | | | | | | |
| | | | | 1702-6 | 4% | DBLa2 prediction | | | | | | | | | | |
| | | | | 1702-5 | 4% | VAR1 | | | | | | | | | | |
| 1678 | UM RD Coma † (sepsis) | 6.5 | 2 | 1678-1 | 70% | DBLa0.9 | CIDRa2.4 | DBL61 | CIDR81 | DBLy14 | DBL75 | DBLe4 | Intron | | | |
| | | | | 1678-2 | 18% | DBLa2 | ... | | | | | | | | | |
| | | | | 1678-3 | 6% | DBLa0.9 | CIDRa2.7 | DBLy11 | DBL75 | DBLe4 | Intron | | | | | |
| | | | | 1678-4 | 3% | DBLa0.8 | CIDRa2.2 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1678-5 | 2% | Group B/C | | | | | | | | | | |
| | | | | 1678-6 | 1% | Group B/C | | | | | | | | | | |
| 1715 | UM | 8 | 5 | 1715-1 | 17% | DBLa0.9 | CIDRa2.2 | DBL61 | CIDRy7 | Intron | | | | | | |
| | | | | 1715-2 | 8% | DBLa1.2 | CIDRa1.6b | DBL83 | DBLy11 | DBLy4 | Intron | | | | | |
| | | | | 1715-3 | 6% | DBLa0.18 | CIDRa3.1 | DBL85 | DBL61 | CIDR81 | DBLy3 | DBL4 | Intron | | | |
| | | | | 1715-4 | 6% | DBLa0.1 | CIDRa3.4 | DBL61 | CIDR85 | Intron | | | | | | |
| | | | | 1715-5 | 5% | Group B/C | | | | | | | | | | |
| | | | | 1715-6 | 4% | Group B/C | | | | | | | | | | |
| 1878 | UM | 5.1 | 5 | 1878-1 | 22% | DBLa1.5 | CIDR81 | DBL83 | DBLy2 | DBLy9 | ... | | | | | |
| | | | | 1878-2 | 14% | DBLa0.9 | CIDRa2.2 | DBL61 | CIDRy5 | Intron | | | | | | |
| | | | | 1878-3 | 11% | DBLa1.7 | CIDRa1.7 | DBL83 | DBL89 | DBLe13 | DBL61 | ... | | | | |
| | | | | 1878-4 | 7% | Group A | | | | | | | | | | |
| | | | | 1878-5 | 6% | Group A | | | | | | | | | | |
| | | | | 1878-6 | 5% | Group A | | | | | | | | | | |
| 1886 | UM | 7.8 | 3 | 1886-1 | 17% | DBLa0.6 | CIDRa3.1 | DBL85 | DBLy18 | DBL61 | CIDR85 | DBLy9 | Intron | | | |
| | | | | 1886-2 | 11% | DBLa0.18 | CIDRa5 | DBL84 | DBLy16 | DBL4 | Intron | | | | | |
| | | | | 1886-3 | 10% | DBLa0.11 | CIDRa2.4 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1886-4 | 9% | DBLa0.12 | CIDRa4 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1886-5 | 7% | DBLa1.2 | CIDRa1.6b | DBL87 | DBLy2 | DBLy4 | Intron | | | | | |
| | | | | 1886-6 | 5% | Group B/C | | | | | | | | | | |
| 1848 | UM | 9.9 | 5 | 1848-1 | 27% | DBLa0.6 | CIDRa3.1 | DBL85 | DBLy10 | DBL61 | CIDR84 | Intron | | | | |
| | | | | 1848-2 | 22% | DBLa0.15 | CIDRa3.2 | DBL61 | CIDR81 | Intron | | | | | | |
| | | | | 1848-3 | 10% | DBLa0.14 | CIDRa4 | DBL61 | CIDR87 | Intron | | | | | | |
| | | | | 1848-4 | 7% | DBLa0.23 | CIDRa5 | DBL85 | DBLy16 | DBL61 | CIDR81 | ... | | | | |
| | | | | 1848-5 | 6% | DBLa0.4 | CIDRa6 | DBL85 | DBLy9 | DBL72 | DBLe4 | Intron | | | | |
| | | | | 1848-6 | 5% | VAR1 | | | | | | | | | | |
| 1799 | UM RD † (sepsis) | 5.1 | 3 | 1799-1 | 55% | DBLa1.6 | CIDRy3 | DBLy7 | DBL61 | CIDRy6 | DBLe13 | DBL75 | DBLe4 | Intron | | |
| | | | | 1799-2 | 28% | DBLa1.6 | CIDR81 | DBLy15 | DBLe1 | DBL73 | DBLe6 | Intron | | | | |
| | | | | 1799-3 | 4% | DBLa1.8 | CIDR82 | DBLy7 | DBLe11 | DBL72 | DBLe6 | Intron | | | | |
| | | | | 1799-4 | 4% | Group A | | | | | | | | | | |
| | | | | 1799-5 | 3% | Group A | | | | | | | | | | |
| | | | | 1799-6 | 3% | Group B/C | | | | | | | | | | |

Figure S2

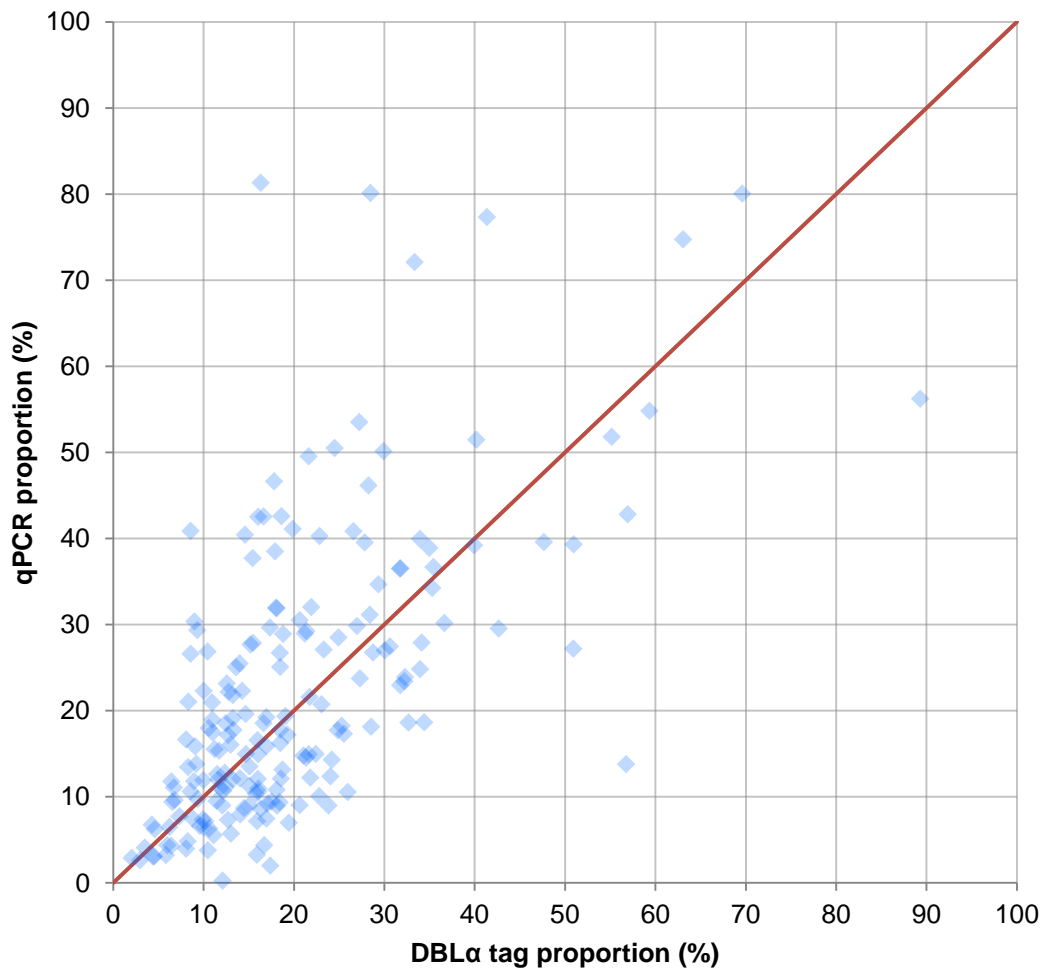


Figure S2: Plot of *var* transcript proportions determined by DBL α -tag analysis against qPCR reported transcript proportions. Red line added as a guide for perfect correlation.

Figure S3

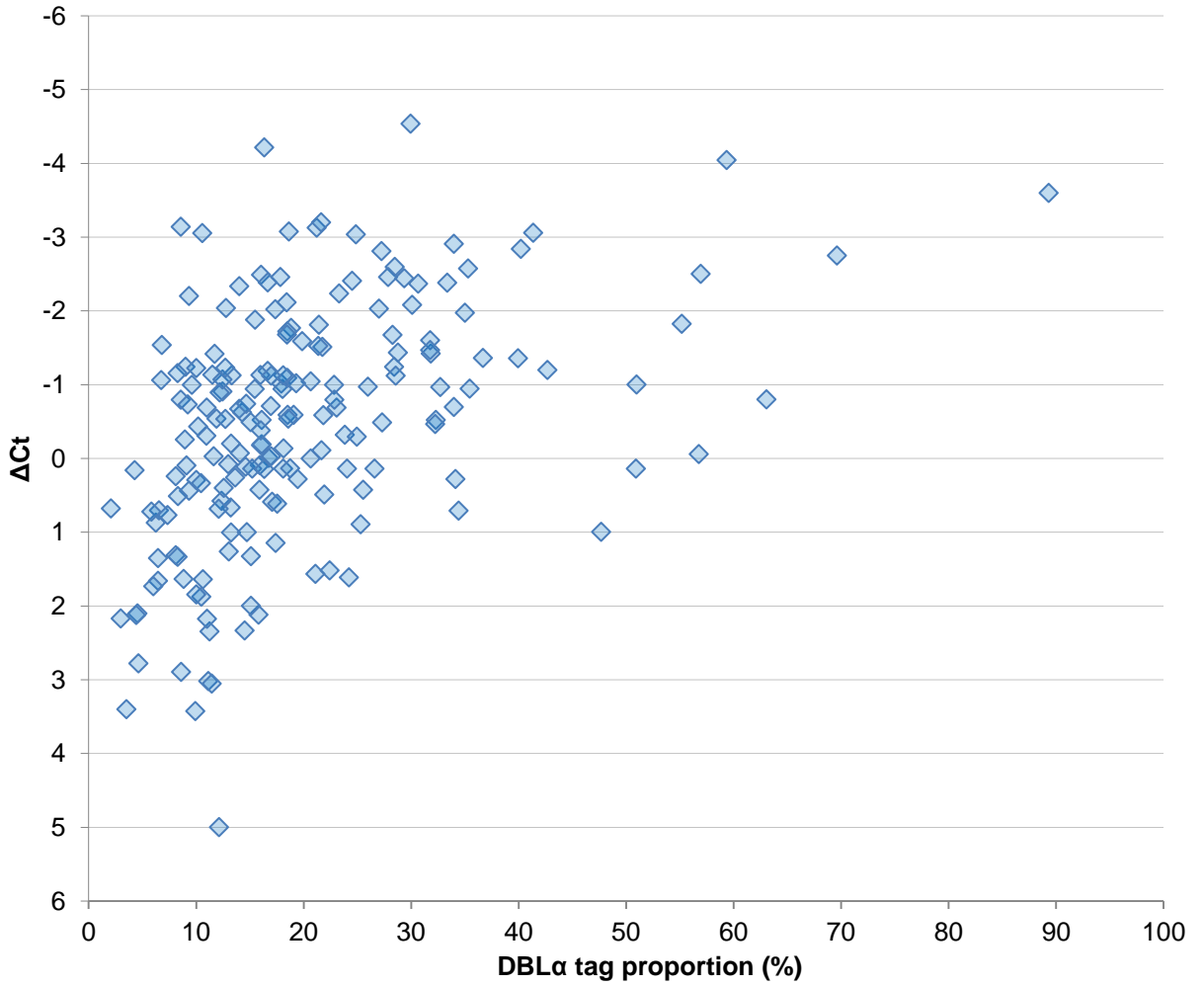


Figure S3: qPCR measured *var* transcript levels (Δ Ct relative to endogenous control gene seryl-tRNA synthetase) plotted against the DBL α -tag determined transcript proportion.