

|           |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH103 UCA | Q        | V        | Q         | L         | Q         | E         | S         | G         | P         | G         | L         | V         | K         | P         | S         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 1        | 2        | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        | 13        | 14        | 15        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | C<br>N/A | A<br>N/A | G<br>0.68 | G<br>1.07 | T<br>0.61 | G<br>0.42 | C<br>0.18 | A<br>0.26 | G<br>2.21 | C<br>3.09 | T<br>0.53 | G<br>1.27 | C<br>0.18 | A<br>0.47 | G<br>0.64 | G<br>0.11 | A<br>0.89 | G<br>0.46 | T<br>0.52 | C<br>0.38 | G<br>0.03 | G<br>0.18 | G<br>0.19 | C<br>0.15 | C<br>0.14 | C<br>0.18 | A<br>0.55 | G<br>0.64 | G<br>0.24 | A<br>0.58 | C<br>0.13 | T<br>0.35 | G<br>0.30 | G<br>0.99 | T<br>0.90 | G<br>0.27 | A<br>0.56 | A<br>1.37 | G<br>0.16 | C<br>0.93 | C<br>0.18 | T<br>0.62 | T<br>0.40 | C<br>1.76 |
| CH103     | Q        | V        | Q         | L         | Q         | E         | S         | G         | P         | G         | V         | V         | K         | S         | S         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 1        | 2        | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        | 13        | 14        | 15        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | C<br>N/A | A<br>N/A | G<br>0.68 | G<br>1.07 | T<br>0.61 | G<br>0.42 | C<br>0.18 | A<br>0.26 | G<br>2.21 | C<br>3.17 | T<br>1.07 | A<br>1.48 | C<br>1.33 | A<br>0.37 | G<br>0.64 | G<br>0.11 | A<br>0.89 | G<br>0.46 | T<br>0.52 | C<br>0.38 | G<br>0.03 | G<br>0.18 | G<br>0.19 | C<br>0.15 | C<br>0.13 | C<br>0.09 | G<br>0.06 | G<br>0.54 | G<br>0.94 | A<br>0.89 | G<br>1.47 | T<br>0.69 | G<br>0.64 | G<br>0.99 | T<br>0.90 | G<br>0.27 | A<br>0.56 | A<br>1.11 | G<br>0.16 | C<br>0.35 | C<br>0.19 | T<br>1.90 | T<br>0.40 | C<br>1.76 |
|           | 0.66476  | 0.69786  | 0.70450   | 0.65928   | 0.80890   | 0.77631   | 0.84373   | 0.91982   | 0.93543   | 0.85848   | 0.01336   | 0.67366   | 0.66549   | 0.09840   | 0.69061   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |



|           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH103 UCA | E         | T         | L         | S         | L         | T         | C         | T         | V         | S         | G         | G         | S         | I         | S         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        | 26        | 27        | 28        | 29        | 30        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.39 | A<br>0.62 | G<br>0.18 | A<br>0.75 | C<br>0.41 | C<br>0.31 | C<br>0.22 | T<br>0.62 | G<br>0.15 | T<br>0.56 | C<br>0.37 | C<br>0.32 | C<br>0.47 | T<br>0.41 | C<br>0.16 | A<br>0.86 | C<br>0.58 | C<br>1.08 | T<br>0.25 | G<br>1.27 | C<br>0.94 | A<br>1.58 | C<br>0.84 | T<br>0.30 | G<br>0.15 | C<br>0.48 | T<br>0.24 | T<br>0.32 | C<br>0.36 | T<br>0.48 | G<br>0.30 | G<br>0.99 | T<br>0.78 | G<br>0.19 | C<br>2.14 | C<br>0.27 | T<br>0.37 | C<br>0.19 | C<br>0.33 | A<br>1.31 | T<br>0.45 | C<br>0.73 | A<br>0.83 | C<br>4.19 |
| CH103     | E         | T         | L         | S         | L         | T         | C         | T         | V         | S         | G         | G         | S         | M         | G         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        | 26        | 27        | 28        | 29        | 30        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.39 | A<br>0.62 | G<br>0.18 | A<br>0.75 | C<br>0.41 | C<br>0.31 | C<br>0.22 | T<br>0.62 | G<br>0.15 | T<br>0.56 | C<br>0.37 | C<br>0.32 | C<br>0.47 | T<br>0.41 | C<br>0.16 | A<br>1.02 | C<br>0.36 | T<br>1.21 | T<br>0.60 | C<br>2.97 | C<br>0.94 | A<br>1.58 | C<br>0.84 | T<br>0.30 | G<br>0.15 | C<br>0.48 | T<br>0.24 | T<br>0.32 | C<br>0.36 | T<br>0.48 | G<br>0.30 | G<br>0.99 | T<br>0.78 | G<br>0.19 | C<br>2.14 | C<br>0.27 | T<br>0.37 | C<br>0.19 | C<br>0.33 | A<br>1.01 | T<br>1.05 | G<br>0.08 | C<br>0.64 | G<br>0.81 |
|           | 0.79968   | 0.78466   | 0.85402   | 0.82837   | 0.83441   | 0.74339   | 0.69570   | 0.62441   | 0.87012   | 0.86523   | 0.76567   | 0.63025   | 0.88058   | 0.03193   | 0.03469   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |

|           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH103 UCA | S         | Y         | Y         | W         | S         | W         | I         | R         | Q         | P         | P         | G         | K         | G         | L         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 31        | 32        | 33        | 34        | 35        | 36        | 37        | 38        | 39        | 40        | 41        | 42        | 43        | 44        | 45        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | A<br>1.13 | G<br>1.88 | T<br>0.27 | T<br>1.50 | A<br>1.74 | C<br>2.56 | T<br>0.96 | A<br>1.86 | C<br>2.83 | T<br>0.35 | G<br>0.38 | G<br>0.41 | A<br>0.54 | C<br>4.09 | C<br>3.09 | T<br>0.31 | G<br>0.38 | G<br>1.33 | A<br>0.60 | T<br>0.63 | C<br>0.60 | C<br>0.17 | G<br>0.12 | G<br>1.08 | C<br>0.26 | A<br>0.26 | G<br>0.21 | C<br>4.30 | C<br>0.10 | C<br>0.08 | C<br>0.18 | C<br>0.18 | A<br>0.55 | G<br>0.08 | G<br>0.65 | G<br>0.61 | A<br>0.90 | A<br>0.33 | G<br>0.11 | G<br>0.65 | G<br>0.22 | A<br>0.58 | C<br>0.13 | C<br>0.35 |
| CH103     | G         | T         | Y         | W         | S         | W         | L         | R         | L         | S         | P         | G         | K         | G         | L         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 31        | 32        | 33        | 34        | 35        | 36        | 37        | 38        | 39        | 40        | 41        | 42        | 43        | 44        | 45        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.28 | G<br>0.65 | G<br>0.22 | A<br>0.58 | C<br>0.32 | T<br>1.07 | T<br>1.43 | A<br>2.86 | T<br>1.01 | T<br>0.52 | G<br>0.21 | G<br>0.41 | A<br>0.89 | G<br>1.23 | C<br>0.60 | C<br>0.34 | A<br>0.14 | C<br>2.14 | C<br>0.19 | G<br>0.53 | C<br>1.12 | C<br>0.21 | G<br>0.38 | C<br>0.57 | C<br>0.21 | T<br>0.62 | G<br>0.15 | T<br>0.56 | C<br>0.37 | C<br>0.32 | C<br>0.08 | C<br>0.19 | C<br>0.09 | G<br>0.06 | G<br>0.54 | G<br>0.61 | A<br>0.90 | A<br>0.33 | G<br>0.11 | G<br>0.65 | G<br>0.22 | A<br>0.58 | C<br>0.13 | C<br>0.35 |
|           | 0.08133   | 0.00194   | 0.54044   | 0.86404   | 0.33202   | 0.80045   | 0.03754   | 0.93436   | 0.03328   | 0.27767   | 0.92856   | 0.85822   | 0.76202   | 0.85148   | 0.90260   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |



|           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH103 UCA | E         | W         | I         | G         | Y         | I         | Y         | Y         | S         | G         | S         | T         | N         | Y         | N         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 46        | 47        | 48        | 49        | 50        | 51        | 52        | 53        | 54        | 55        | 56        | 57        | 58        | 59        | 60        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.41 | A<br>0.89 | G<br>1.47 | T<br>0.69 | G<br>0.60 | G<br>1.33 | A<br>0.51 | T<br>0.67 | T<br>0.52 | G<br>0.10 | G<br>0.64 | C<br>5.15 | T<br>2.02 | A<br>2.27 | T<br>1.42 | A<br>2.75 | T<br>0.36 | T<br>1.53 | T<br>1.05 | C<br>2.70 | T<br>1.00 | T<br>1.43 | C<br>2.03 | C<br>1.33 | A<br>0.83 | C<br>0.87 | G<br>0.69 | G<br>0.28 | G<br>0.65 | G<br>0.94 | A<br>0.54 | G<br>0.70 | C<br>3.96 | A<br>0.77 | C<br>0.47 | C<br>0.47 | A<br>0.57 | A<br>1.20 | C<br>1.73 | T<br>0.96 | A<br>1.48 | C<br>1.31 | A<br>0.61 | C<br>0.66 |
| CH103     | E         | W         | I         | G         | Y         | I         | F         | H         | T         | G         | E         | T         | N         | Y         | S         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 46        | 47        | 48        | 49        | 50        | 51        | 52        | 53        | 54        | 55        | 56        | 57        | 58        | 59        | 60        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.49 | A<br>1.05 | C<br>2.14 | T<br>1.47 | G<br>0.85 | G<br>1.33 | A<br>0.51 | T<br>0.67 | T<br>0.52 | G<br>0.14 | G<br>2.14 | C<br>0.52 | T<br>0.97 | A<br>3.02 | T<br>1.42 | A<br>2.75 | T<br>0.36 | T<br>1.59 | T<br>0.74 | T<br>0.65 | C<br>0.48 | C<br>0.52 | A<br>1.09 | C<br>1.30 | A<br>1.74 | C<br>2.83 | C<br>0.35 | G<br>0.38 | G<br>0.41 | A<br>0.62 | C<br>0.38 | C<br>0.67 | G<br>0.18 | A<br>0.75 | C<br>0.68 | C<br>0.47 | A<br>0.69 | A<br>2.14 | C<br>0.57 | T<br>1.43 | C<br>2.03 | C<br>1.33 | A<br>0.83 | C<br>0.82 |
|           | 0.63983   | 0.74929   | 0.73716   | 0.81060   | 0.42166   | 0.47921   | 0.11775   | 0.10130   | 0.05679   | 0.82165   | 0.00195   | 0.68092   | 0.57317   | 0.57640   | 0.05504   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |

|           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH103 UCA | P         | S         | L         | K         | S         | R         | V         | T         | I         | S         | V         | D         | T         | S         | K         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 61        | 62        | 63        | 64        | 65        | 66        | 67        | 68        | 69        | 70        | 71        | 72        | 73        | 74        | 75        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | C<br>0.54 | C<br>0.20 | C<br>0.47 | T<br>0.49 | C<br>0.36 | C<br>0.32 | C<br>0.47 | A<br>0.41 | C<br>0.41 | A<br>0.66 | G<br>0.71 | G<br>0.29 | A<br>0.42 | G<br>0.46 | C<br>0.52 | C<br>0.11 | C<br>0.17 | A<br>0.85 | G<br>0.46 | C<br>0.63 | C<br>0.16 | A<br>0.86 | C<br>0.47 | C<br>0.27 | A<br>1.00 | C<br>1.52 | C<br>2.75 | A<br>0.46 | C<br>0.73 | C<br>0.83 | C<br>4.19 | T<br>1.49 | A<br>2.46 | G<br>0.20 | A<br>0.74 | C<br>0.59 | A<br>0.90 | C<br>0.25 | C<br>0.49 | A<br>0.57 | C<br>0.20 | C<br>0.54 | A<br>0.79 | C<br>0.71 |
| CH103     | P         | S         | L         | K         | G         | R         | V         | S         | I         | S         | V         | D         | T         | S         | E         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 61        | 62        | 63        | 64        | 65        | 66        | 67        | 68        | 69        | 70        | 71        | 72        | 73        | 74        | 75        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | C<br>0.37 | C<br>0.32 | C<br>0.47 | T<br>0.49 | C<br>0.36 | C<br>0.32 | C<br>0.22 | C<br>0.38 | C<br>0.57 | A<br>0.56 | A<br>0.33 | C<br>0.11 | G<br>0.70 | G<br>0.17 | C<br>0.43 | C<br>0.11 | C<br>0.17 | A<br>0.85 | G<br>0.46 | C<br>0.35 | C<br>0.24 | C<br>0.66 | C<br>0.19 | C<br>0.33 | A<br>1.00 | C<br>1.52 | C<br>2.75 | A<br>0.46 | C<br>0.73 | C<br>0.83 | C<br>0.87 | C<br>0.69 | C<br>0.60 | G<br>0.17 | A<br>0.45 | C<br>0.59 | A<br>0.90 | C<br>0.25 | C<br>0.49 | A<br>0.57 | C<br>0.10 | C<br>0.37 | C<br>0.50 | A<br>0.55 |
|           | 0.82561   | 0.83250   | 0.84128   | 0.72768   | 0.04464   | 0.94038   | 0.80583   | 0.05898   | 0.51333   | 0.85739   | 0.39707   | 0.75544   | 0.76509   | 0.84845   | 0.04733   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |

|           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH103 UCA | N         | Q         | F         | S         | L         | K         | L         | S         | S         | V         | T         | A         | A         | D         | T         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 76        | 77        | 78        | 79        | 80        | 81        | 82        | 83        | 84        | 85        | 86        | 87        | 88        | 89        | 90        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | A<br>0.33 | A<br>1.33 | C<br>2.44 | C<br>0.56 | A<br>0.60 | G<br>1.61 | T<br>1.01 | T<br>0.45 | C<br>1.04 | T<br>0.66 | C<br>0.36 | C<br>0.32 | C<br>0.22 | T<br>0.38 | G<br>0.57 | A<br>0.56 | A<br>1.37 | C<br>2.01 | C<br>3.09 | T<br>0.19 | C<br>0.53 | A<br>0.74 | C<br>4.09 | C<br>1.55 | C<br>0.27 | C<br>0.36 | C<br>0.45 | A<br>1.11 | G<br>0.64 | G<br>0.33 | C<br>0.65 | C<br>0.42 | C<br>0.33 | C<br>2.33 | C<br>1.55 | C<br>0.53 | A<br>1.12 | C<br>1.98 | C<br>0.31 | G<br>0.21 | A<br>0.45 | C<br>0.59 | A<br>0.90 | C<br>0.15 |
| CH103     | D         | Q         | F         | S         | L         | R         | L         | R         | S         | V         | T         | A         | A         | D         | T         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 76        | 77        | 78        | 79        | 80        | 81        | 82        | 83        | 84        | 85        | 86        | 87        | 88        | 89        | 90        |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.24 | A<br>0.62 | C<br>0.68 | C<br>0.56 | A<br>0.60 | G<br>1.61 | T<br>1.01 | T<br>0.45 | C<br>1.04 | T<br>0.66 | C<br>0.36 | C<br>0.32 | C<br>0.22 | T<br>0.38 | G<br>0.53 | A<br>0.49 | C<br>0.18 | A<br>0.17 | C<br>0.13 | C<br>0.21 | C<br>0.53 | A<br>0.59 | C<br>0.99 | C<br>0.06 | G<br>0.85 | C<br>0.22 | C<br>0.45 | A<br>1.11 | G<br>0.64 | G<br>0.33 | C<br>0.65 | C<br>0.42 | C<br>0.33 | C<br>2.33 | C<br>1.55 | C<br>0.53 | A<br>1.12 | C<br>1.98 | C<br>0.31 | G<br>0.21 | A<br>0.45 | C<br>0.59 | A<br>0.90 | C<br>0.15 |
|           | 0.02792   | 0.67072   | 0.65042   | 0.80604   | 0.89051   | 0.09727   | 0.72154   | 0.12048   | 0.84921   | 0.69881   | 0.79084   | 0.46700   | 0.54729   | 0.78737   | 0.78044   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |



|           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH103 UCA | A         | Y         | F         | D         | Y         | W         | G         | Q         | G         | T         | L         | V         | T         | V         | S         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 106       | 107       | 108       | 109       | 110       | 111       | 112       | 113       | 114       | 115       | 116       | 117       | 118       | 119       | 120       |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.48 | C<br>1.03 | C<br>0.28 | T<br>1.31 | A<br>1.86 | C<br>1.95 | T<br>0.61 | T<br>0.70 | T<br>0.57 | G<br>0.18 | A<br>0.79 | C<br>0.85 | T<br>0.96 | A<br>1.86 | C<br>2.83 | C<br>0.35 | T<br>0.18 | G<br>0.14 | C<br>0.06 | G<br>0.19 | C<br>0.16 | C<br>0.09 | C<br>0.79 | C<br>2.86 | C<br>0.35 | G<br>0.51 | C<br>0.38 | A<br>1.33 | C<br>2.13 | C<br>0.31 | C<br>0.22 | T<br>1.04 | C<br>0.30 | G<br>0.40 | A<br>0.44 | C<br>0.16 | A<br>0.86 | C<br>0.42 | C<br>0.17 | G<br>0.27 | C<br>0.46 | C<br>0.24 | C<br>0.66 | C<br>0.31 |
| CH103     | A         | Y         | F         | R         | N         | W         | G         | R         | G         | S         | L         | V         | S         | V         | T         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | 106       | 107       | 108       | 109       | 110       | 111       | 112       | 113       | 114       | 115       | 116       | 117       | 118       | 119       | 120       |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|           | G<br>0.48 | C<br>1.03 | C<br>0.28 | T<br>1.31 | A<br>1.86 | C<br>1.95 | T<br>0.61 | T<br>0.65 | T<br>0.37 | C<br>1.83 | G<br>0.18 | C<br>1.06 | A<br>0.63 | A<br>2.14 | C<br>1.44 | T<br>0.52 | T<br>0.10 | C<br>0.14 | C<br>0.06 | G<br>0.19 | C<br>0.24 | C<br>0.06 | C<br>0.85 | C<br>0.74 | C<br>0.31 | C<br>2.06 | C<br>0.60 | C<br>0.35 | C<br>0.84 | C<br>0.32 | C<br>0.36 | T<br>0.48 | C<br>0.30 | G<br>0.40 | A<br>0.85 | C<br>0.24 | C<br>0.66 | C<br>0.29 | C<br>0.52 | G<br>0.27 | C<br>0.51 | C<br>0.16 | A<br>0.86 | C<br>0.42 |
|           | 0.74376   | 0.51488   | 0.70853   | 0.00087   | 0.03406   | 0.89666   | 0.94156   | 0.05701   | 0.82602   | 0.13490   | 0.78341   | 0.84374   | 0.06309   | 0.84898   | 0.01236   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |



|           |           |          |
|-----------|-----------|----------|
| CH103 UCA | S         |          |
|           | 121       |          |
|           | T<br>0.41 | C<br>N/A |
| CH103     | A         |          |
|           | 121       |          |
|           | G<br>3.07 | C<br>N/A |
|           | 0.01448   |          |