Below is the nucleotide sequence of the coding strand of the *Mc1r* gene. There are two charts: one for the gene of mice with light-colored fur, and one for the gene of mice with dark-colored fur. In both charts, the first 20 codons (a **codon** is three nucleotides) are numbered. The complete *Mc1r* gene sequence has 318 codons (954 nucleotides).

Mc1r gene sequence in a mouse with light-colored fur

Codon
Nucleotide
Codon number

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

ATGCCCATGCAGGAGCCCCAGAGGAGGCTACTGGGTCCTTTCAACTCCACCCGCACAGGCGTTCCTCAC

CTCGAGCTATCTGCCAACCAGACTGGACCCTGGTGCCTGCACGTATCCATCCCAGATGGCCTCTTCCTC

50
AGCCTGGGGCTGGTGAGCTTGGTGGAAAATGTGCTGGTGGTGATTTCCATTGCCAAGAACCAAAACCTG

CATTCCCCCATGTACTACTTCATCTGCTGCCTGGCTTTGTCTGACCTGCTTGTGAGTGTGAGCATTGTG

100
CTGGAGACCACTCTCATCTTGGTGCTAGAGGCAGGGGCCCTGGCCACCCGGGTGACTGTGGTACAGCAG

CTGGACAATGTCATCGACGTGCTCATCTGTGGCTCCATGGTCTCAAGTCTGTGCTTCCTCGGAGCCATC

150
GCTGTGGACCGGTACATCTCCATCTTCTATGCACTGCGCTATCACAGTATTGTGACACTGCCCCGGGCT

CGGTGGGCCATCGTGGCCATCTGGGTAGCCAGCATCTCTTCCAGCACTCTTTTTGTTGCCTACTACAAC

200
CACACAGCGGTCCTGCTTTGTCTCGTCACCTTTTTTCTAGCCACGCTGGCACTCATGGTAGTTCTGTAT

GTGCACATGCTTGCACGGGCACACCAGCATGCTCAGGCCATTGCTCAGCTCCACAAGAGACAGCACCTT

250
GTCCACCAAGGTTTCCGACTCAAAGGCGCTGCCACCCTCACTATCCTCTTGGGCATTTTCTTCCTGTGC

TGGGGCCCCTTCTTCCTGTACCTCACTCTCATCGTCCTCTGCCCGAAGCACCCTACCTGCGGCTGTTTC

TTCAAGAACCTCAATCTCTTCCTTGCCCTCATCATCTTCAACTCCATTGTTGACCCCCTCATCTATGCC

300
TTCCGAAGTCAGGAGCTCCGCATGACGCTCAAGGAGGTGCTGCTGTGCTCCTGGTGA

318

What Causes Different Fur Colors?

Mc1r gene sequence in a mouse with dark-colored fur

Codon
Nucleotide
Codon number

| ① | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

ATGCCCATGCAGGAGCCCCAGAGGAGGCTACTGGGTCCTTTCAACTCCACCTGCACAGGCGTTCCTCAC

CTCGAGCTATCTGCCAACCAGACTGGACCCTGGTGCCTGCACGTATCCATCCCAGATGGCCTCTTCCTC
50
AGCCTGGGGCTGGTGAGCTTGGTGGAAAATGTGCTGGTGGTGATTTCCATTGCCAAGAACCAAAACCTG

CATTCCCCCATGTACTACTTCATCTGCTGCCTGGCTTTGTCTGACCTGCTTGTGAGTGTGAGCATTGTG
100
CTGGAGACCACTCTCATCTTGGTGCTAGAGGCAGGGGCCCTGGCCACCTGGGTGACTGTGGTACAGCAG

CTGGACAATGTCATCGACGTGCTCATCTGTGGCTCCATGGTCTCAAGTCTGTGCTTCCTCGGAGCCATC
150
GCTGTGGACCGGTACATCTCCATCTTCTATGCACTGCGCTATCACAGTATTGTGACACTGCCCTGGGCT

CGGTGGGCCATCGTGGCCATCTGGGTAGCCAGCATCTCTTCCAGCACTCTTTTTGTTGCCTACTACAAC
200
CACACAGCGGTCCTGCTTTGTCTCGTCACCTTTTTTCTAGCCACGCTGGCACTCATGGTAGTTCTGTAT

GTGCACATGCTCGCACGGGCACACCAGCATGCTCAGGCCATTGCTCAGCTCCACAAGAGACAGCACCTT
250
GTCCACCACGGTTTCCGACTCAAAGGCGCTGCCACCCTCACTATCCTCTTGGGCATTTTCTTCCTGTGC

TGGGGCCCCTTCTTCCTGTACCTCACTCTCATCGTCCTCTGCCCGAAGCACCCTACCTGCGGCTGTTTC

TTCAAGAACCTCAATCTCTTCCTTGCCCTCATCATCTTCAACTCCATTGTTGACCCCCTCATCTATGCC
300   318
TTCCGAAGTCAGGAGCTCCGCATGACGCTCAAGGAGGTGCTGCTGTGCTCCTGGTGA