

INK2J00011R_KIF5A_N256S_E01_AA
 40,608 bp

5'

ACCGCATCGAACTCCGCTTGATCATCCTCAGGTAGGTCGCTAGTTTCATAAACATCTGGCTCATTCCCTGGCCTGCAGGTAGAAGC
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85

KIF5A



AGTGACCACCCAACCTCACTACCCAGCATCCAACAACACCCCTTCCCCACTCCATTTGAATAAGCTAACAGAGAAGGCGGGGTG
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170

KIF5A



TGATGTCAGGGTTCTGTCTTTCTCCTCCACCTGCCCGTGAGTCAACAGTATGTCAGTTCCCATGTCTCAAGGGGTAGGGATGA
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255

KIF5A



CAGCGGAAACAATTGGGACCTGACAGTAAACGGTGAGTGTAAGTGATAGCAACGATGTTACCCTAAATCTAGAGGCGGGCAGGTC
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340

KIF5A



CTTGGCAATCACTATTGCCAAAGAAGGTGAAGGCTATCCTCCAATTAGGCCCGTACACCACCACCCTGGCACAAGGATTGAGAG
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425

KIF5A



TGACTCAGGACCTTAGTACTCAAGGTCCTGTGTCCCAACCCTCACCTTGAGAAGCAGGCAGGGCAGCACAAAAGGAAGGTACACG
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510

KIF5A



CCAGGATTGTCATGGGAGTGGGGGCTGGGGGAGGGGCATAGGTTCCCTCAAGGATAGAGCTCCCATCTGGCACAAGAGGGTTCTG
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595

KIF5A



CCAGATGGCAGAACCTCTTCTTGGCAGGATGAAGGCCATCGTTAAGTGGTCTGGTGTGTGTCTGGGGTAGCGATGGGGTCTT
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680

KIF5A



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765

KIF5A



TTCTGGGCCGAGCTACCGGCGACTGCCGAAAGGGGGCCTGGTGCGCCGTCCGGCGGCCCGGCCAGTCGGGTGAGAAAGATTTCG
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850

KIF5A



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935

KIF5A



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1020

KIF5A



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1105

KIF5A



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KIF5A >

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KIF5A >

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KIF5A

2295

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KIF5A

2380

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KIF5A

2465

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KIF5A

2550

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KIF5A

2635

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KIF5A

2720

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2805

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KIF5A

2890

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KIF5A

2975

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KIF5A

3060

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KIF5A

3145

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KIF5A

3230

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KIF5A

3315

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KIF5A

3400

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KIF5A

3485

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3570

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KIF5A

3655

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KIF5A

3740

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KIF5A

3825

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KIF5A

3910

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KIF5A

3995

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KIF5A

4080

KIF5A-202

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KIF5A

4165

KIF5A-202

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KIF5A

4250

KIF5A-202

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4335

KIF5A

KIF5A-202

A E T N N E C S I K V L C R F R P L N Q A E I L R G D K F

ENSE00001264380

KIF5A-202

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4420

KIF5A

KIF5A-202

I P I F Q G D D S V V I G

ENSE00001264380

KIF5A-202

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4505

KIF5A

KIF5A-202

KIF5A-202

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4590

KIF5A

KIF5A-202

KIF5A-202

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4675

KIF5A

KIF5A-202

KIF5A-202

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4760

KIF5A

KIF5A-202

KIF5A-202

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4845

KIF5A

KIF5A-202

KIF5A-202

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4930

KIF5A

KIF5A-202

KIF5A-202

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5015

KIF5A

KIF5A-202

KIF5A-202

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5100

KIF5A

KIF5A-202

KIF5A-202

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5185

KIF5A

KIF5A-202

KIF5A-202

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5270

KIF5A

KIF5A-202

KIF5A-202

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5355

KIF5A

KIF5A-202

KIF5A-202

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5440

KIF5A

KIF5A-202

KIF5A-202

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5525

KIF5A

KIF5A-202

KIF5A-202

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5610

KIF5A

KIF5A-202

KIF5A-202

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5695

KIF5A

KIF5A-202

KIF5A-202

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5780

KIF5A

KIF5A-202

KIF5A-202

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5865

KIF5A

KIF5A-202

KIF5A-202

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5950

KIF5A

KIF5A-202

KIF5A-202

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6035

KIF5A

KIF5A-202

KIF5A-202

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6120

KIF5A

KIF5A-202

KIF5A-202

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6205

KIF5A

KIF5A-202

KIF5A-202

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6290

KIF5A

KIF5A-202

KIF5A-202

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6375

KIF5A

KIF5A-202

KIF5A-202

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6460

KIF5A

KIF5A-202

KIF5A-202

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6545

KIF5A

KIF5A-202

KIF5A-202

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6630

KIF5A

KIF5A-202

KIF5A-202

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6715

KIF5A

KIF5A-202

KIF5A-202

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6800

KIF5A

KIF5A-202

KIF5A-202

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6885

KIF5A

KIF5A-202

KIF5A-202

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6970

KIF5A

KIF5A-202

KIF5A-202

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7055

KIF5A

KIF5A-202

KIF5A-202

CCCATCTTGTTTTGCTTTTGCACACTCAGAATCCAGTGTGACTTTTTCGCCAGACCCATTTAAGTGTCTGTCTTCTCTGCCTTG
GGGTAGAACAACAAACGAAAACGTGTGAGTCTTAGGTCACACTGAAAAAGCGGTCTGGGTAAATTCACAGACAGAAGGAGACGGAAC

7140

KIF5A

KIF5A-202

KIF5A-202

GTCTTTCTCAGCAGTGTCCCAGTGCCTGCTGTCTGGACTGCTGCATCTGTACCAGATGTGGGAGGGATGACAGTGAAGAAACACA
CAGAAAGAGTCGTACAGGGTCACGGACGACAGACCTGACGACGTAGACATGGTCTACACCCTCCCTACTGTCACTTCTTTGTGT

7225

KIF5A

KIF5A-202

KIF5A-202

TACATACACACACACTCTTTCTCTTTCCCCTTCATTCAAGTGTACACAGCTACCTCCCTCAGGTCTCCCAATGGTTAAGTGGG
ATGTATGTGTGTGTGTGAGAAAGAGAAAGGGGAAGTAAGTTCACATGTGTGCGATGGAGGGAGTCCAGAGGGTTACCAATTCACCC

7310

KIF5A

KIF5A-202

KIF5A-202

TTCTTAATGCAAGAACTAGGACCATTGTGTACCTCACTTGGCAAAGCTAGGTTGGGACCTGCAGGGTTATTGGAGCAGAATCAG
AAGAATTACGTTCTTTGATCCTGGTAACACATGGAGTGAACCGTTTCGATCCAACCCTGGACGTCCCAATAACCTCGTCTTAGTC

7395

KIF5A

KIF5A-202

KIF5A-202

TATTGTTTGGGGTGGCCTGGGATTTGATATCTGAAGTGGGGAGCAGGGCTGTCTTTGCTTTGGGGGAGTCTCATAAAGAAAAAT
ATAACAAACCCACCGGACCCTAAACTATAGACTTCACCCCTCGTCCCGACAGGAAACGAAACCCCTCAGAGTATTTCTTTTTA

7480

KIF5A

KIF5A-202

KIF5A-202

GGAGACGAGAAGTAACGTTTCATTGTGGCCAGTGTCTCTCCAGCATTACCATGGCAACAATCCCCACGGGTGTCACTATGGAAATC
CCTCTGCTCTTCATTGCAAGTAACACCGGTCACAGAGAGGTGTAATGGTACCGTTGTTAGGGGTGCCACAGTGATACCTTTAG

7565

KIF5A

KIF5A-202

KIF5A-202

AGGCCCTGGCACTTGAAGTTCAGCTTATACCAAGTGCTTTACTGAGGGTTGAACAGGTTGGTTCATCTTTGGACCCCTGATCTTAAA
TCCGGACCGTGAACCTCAAGTCGAATATGGTTCACGAAATGACTCCCAACTTGTCCAACCAGTAGAAACCTGGGGACTAGAATTT

7650

KIF5A

KIF5A-202

KIF5A-202

CCCCCAGCCCAATTAGCTTCAGTCAGCACACATGATAGAAAAGTACAGAAAGGTGCTGGGATACACAAATGGAAGAGGAGACAC
GGGGGTGCGGGTTAATCGAAGTCAGTCGTGTGTAATCTTTTCATGTCTTTCCACGACCCTATGTGTTTACCTTCTCTCTGTG

7735

KIF5A

KIF5A-202

KIF5A-202

CAGGGAGGCTCGGAGTGTGATTAAATTAAGAGAAACAAAGAACCCTGGACTGTGGGACTCTGAAGAGAGGCCCTTCAGAGAAGG
GTCCCTCCGAGCCTCACACTAATTTAATTTTCTCTTGTCTTGGGACCTGACACCCTGAGACTTCTCTCCGGGAAGTCTCTTCC

7820

KIF5A

KIF5A-202

KIF5A-202

CTATAAGGAGCACTTAGACTGCTGGGGGTGGGAGAGAGATTGGATTTTCGGCGACATTTCTAAGAGGAGGAGGGGACTCTGTGACTA
GATATTCCTCGTGAATCTGACGACCCCCACCCTCTCTCTAACCCTAAAGCCGCTGTAAAGATTCTCCTCCTCCCTGAGACACTGAT

7905

KIF5A

KIF5A-202

KIF5A-202

TTTCTCATTAAACAACCTCACAGAGTCTTCGATTACCTGGAGGTAGAGAGGGTGGGTGGCAGAATTACATACTTCTGAAAATGGGAT
AAAGAGTAATTGTTGAGTGTCTCAGAAAGCTAATGGACCTCCATCTCTCCACCCACCGTCTTAATGTATGAAGACTTTTACCCTA

7990

KIF5A

KIF5A-202

KIF5A-202

TGAGGTTGGAAAAAGGGAGTGATGAAAGGCTTTAGTTCTGTCTGGAAATACTTGGAAAAATGCCCAAATGTGAGGAGGGGGGATA
ACTCCAACCTTTTTCCCTCACTACTTTCCGAAATCAAGACAGACCTTTATGAACCTTTTTACGGGTTTACACTCCTCCCCCTAT

8075

KIF5A

KIF5A-202

KIF5A-202

TGGAGTAGGGGAAGAAAAAGCCTTGATAAGGCTCTGACACAGTGTGGCATTTCAGTTCTTGGATCACTTTGCAGTGTGGGTCTG
ACCTCATCCCTTCTTTTTTCGGAACCTATTCCGAGACTGTGTCAACAACCGTAAAGTCAAGAACCTAGTGAAACGTCACACCCAGAC

8160

KIF5A

KIF5A-202

KIF5A-202

GAATCAGATTGCTTGAATTTGAAACTGTGCTCTACCATTTCTCAGCCATGTGACTGTGGGGAAGCTACCTGACCTCTTTGAGCCT
CTTAGTCTAACGAACTTAAACTTTGACACGAGATGGTAAAGAGTCGGTACACTGACACCCCTTCGATGGACTGGAGAAACTCGGA

8245

KIF5A

KIF5A-202

KIF5A-202

GTTTCGTCATCTATAAAGTGGTAATAATAATAGTATCTATGTCCTAGGATTACTGTGAACATTAATGAGATAATGCATATAAAC
CAAAGCAGTAGATATTTACCATTATTATTATCATAGATACAGGATCCTAATGACACTTGTAAATTTACTCTATTACGTATATTTG

8330

KIF5A

KIF5A-202

KIF5A-202

TGCTTTGTAACATGGCAGGCACACAGTAAACCCTCAATAAGAGTTAGATATTATCACTATTTTATATGCTATCTCCCCACAAGCT
ACGAAACATTGTACCGTCCGTGTGTCATTTGGGAGTTATTCTCAATCTATAATAGTGATAAAATATACGATAGAGGGGTGTTTCGA

8415

KIF5A

KIF5A-202

KIF5A-202

AGCTTTGACAAAATTGGGAAGTGGGTAACTTTTCTTTTTACTAATTGTTTTTCATGCAAACCTCCAGATCCCAAGTATCTTCTT
TCGAAACTGTTTTAACCCCTTCACCCATTGTGAAAAGGAAAAATGATTAACAAAGTACGTTTTGGAGGTCTAGGGTTCATAGAAGAA

8500

KIF5A

KIF5A-202

KIF5A-202

GCTCCCTTCCTTGCAATATCTATGTTTAGTCAACAAATATTTATGAAGAGCATCTGTCATAGTCCTCTATATGTTGCTATAAAG
CGAGGGAAGGAACAGTTATAGATACAAATCAGTTGTTTATAAATACTTCTCGTAGACAGTATCAGGAGATATACAACGATATTTTC

8585

KIF5A

KIF5A-202

KIF5A-202

GAATACCCAGGCTGGGTAAATTTATAAAGAAAAGAGATATATTTGGCTAACAGTTCTGCAGGCTGTACAAGAAGCATGGCACCCAG
CTTATGGGGTCCGACCCATTAAATATTTCTTTTCTCTATATAAACCGATTGTCAAGACGTCCGACATGTTCTTCGTACCGTGGTC

8670

KIF5A

KIF5A-202

KIF5A-202

CATCTGCTCTGATGAGGGCCTCAGGAAGCTTCCAGTCATGGTGGGAGGCCAAAGAGGGAGCAGGAATCACATGGCGAGAGAGGGAA
GTAGACGAGACTACTCCCGGAGTCCCTTCGAAGGTCAGTACCACCTCCGTTTCTCCCTCGTCTTAGTGTACCGCTCTCTCCCTT

8755

KIF5A

KIF5A-202

KIF5A-202

AAAGAGGGAGAGCAAGAGGTTGCCAAGCTCTTTTTAACAGCCAGCTCTCACATGAACTCATAAAGCGATAACTCACTCATTACCAT
TTTTCTCCCTCTCGTTCTCCACGGTTCGAGAAAAATTGTCGGTTCGAGAGTGTACTTGAGTATTTGCTATTGAGTGAGTAATGGTA

8840

KIF5A

KIF5A-202

KIF5A-202

GGGGAAGGCACCAAGCCACTCATCAGGGATTTACCTCCTTGAGCCAAGCACTTCCCACCATGCCCCACCTCCAACAATGGGGATC
CCCCTTCGTTGGTTCGGTGAAGTAGTCCCTAAATGGAGGAACTCGGTTCTGTAAGGGTGGTACGGGGTGGAGGTTGTTACCCCTAG

8925

KIF5A

KIF5A-202

KIF5A-202

AAATGTCAACATGAGATTTGGAGGGGACAAACATCCAAACTACATCAGCATCCTATAGGCCAGGGACTGTGTTTGGTGTGGGGA
TTTACAGTTGTACTCTAAACCTCCCCTGTTTGTAGGTTTGTAGTGTAGTTCGTAGGATATCCGGTCCCTGACACAAACCACAACCCCT

9010

KIF5A

KIF5A-202

KIF5A-202

TTTAAAGGGAATCCCTGCCTTCAAGAAAATCTGGATCAAGGTTGTGATCCATAGCCCATGGAGTGGCCTGCGCAGAGGCAGGGGA
AAATTTCCCTTAGGGACGGAAGTTCCTTTTAGACCTAGTTCCAACACTAGGTATCGGGTACCTCACCGGACGCGTCTCCGTCCCCT
KIF5A >
KIF5A-202 >
KIF5A-202 >

GAGGAACATCAGATATGGCTTTTGTAACTATCTATATACTCCCCAGATTCTGATAAGGAACCTCCACACAACATACTACAGTCT
CTCCTTGTAGTCTATAACGAAAACGATTGATAGATATATGAGGGGGTCTAAGACTATTCCTTGGAGGGTGTGTATGATGTCAGA
KIF5A >
KIF5A-202 >
KIF5A-202 >

GATTCAGAGTATTGTGTGTTATGAGAGCTGTAAATAATGGTGGTGCTTCCCATGTCTATGGGCAGGAAAAGTGGGAAGACCACTGG
CTAAGTCTCATAACACACAATACTCTCGACATTTATTACCACCACGAAGGGTACAGATACCCGTCCTTTTTCACCTTCTGGTACC
KIF5A >
KIF5A-202 >
KIF5A-202 >

TCTAGTTATTTTTCATGAAAAGATCACTTTTCTCTAGGCACATTGCCCATGGGTAGCCCTGCTGTACAAGGAGCAGTAATGAAAA
AGATCAATAAAAAGTACTTTTCTAGTGAAAAGAGATCCGTGTAACGGGTACCCAATCGGGACGACATGTTCTCCTCGTCACTTTT
KIF5A >
KIF5A-202 >
KIF5A-202 >

AAAAATCAGGCAAAAATTAATTCATCCTGAGTATAATCAATAGAAAATTAAGAAAATGTACAAAACCTTAGCCGAGCATGGTGGTG
TTTTTAGTCCGTTTTAATTAAGTAGGACTCATATTAGTTATCTTTAATTTTCTTTACATGTTTTGAATCGGCTCGTACCACCAC
KIF5A >
KIF5A-202 >
KIF5A-202 >

GCTGCCTGTAGTCCCAGCTACTCAGGAGGCTGATGCAGGAGAATTGCTTGAACCTGGGAGGCGGAGGTTGCAGTGAGCCGAGATC
CGACGGACATCAGGGTCGATGAGTCCTCCGACTACGTCTTAAACGAACTTGGACCCTCCGCCTCCAACGTCACTCGGCTCTAG
KIF5A >
KIF5A-202 >
KIF5A-202 >

TTGCCACTGCACTCCAGCCTGGGCAACAGAGCAAGACTCCGTCTCAAAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAA
AACGGTGACGTGAGGTCGGACCCGTTGTCTCGTTCTGAGGCAGAGTTTTTATTTATTTATTTATTTTAAATTTTTTTGTTTAACC
KIF5A >
KIF5A-202 >
KIF5A-202 >

CTGGGCACGGTGGCTCACGCCTATAATCTCAGCACTTTGGGAGACAGAGGCGGGTGGATAACAAGGTCAGGAGTTCGACACCAGC
GACCCGTGCCACCGAGTGCGGATATTAGAGTCGTGAAACCTCTGTCTCCGCCACCTATTGTTCCAGTCTCAAGCTGTGGTCG

9690

KIF5A

KIF5A-202

KIF5A-202

ATGGCCAACATGGTGAAACCTGTCTGTACTGAAAATATAAAAATTAGCCGGGCGTGGTGGTGGGCGCCTGTAATCCCAGCTACT
TACCGGTTGTACCACTTTGGGACAGACATGACTTTTATATTTTAATCGGCCCGCACCACCACCCGCGGACATTAGGGTCGATGA

9775

KIF5A

KIF5A-202

KIF5A-202

CGGAAGGCTGAGGCAGGAGAATCGCTTGAACCTGGGAGGCGAAGGTTGCAGTGAGCCAAGATCATGCTGCTGCACTCCAGCCTGG
GCCTTCCGACTCCGTCTTCTTAGCGAACTTGGACCCTCCGCTTCCAACGTCACCTCGGTTCTAGTACGACGACGTGAGGTCGGACC

9860

KIF5A

KIF5A-202

KIF5A-202

GCGAAAGAGTGAAACTCTATCTCAAAAAAAAAAAAAAAAAAGAAAAAGAAAGAAAGAAAAAAAAAGAAAAACAATTTACATTTTAA
CGCTTCTCACTTTGAGATAGAGTTTTTTTTTTTTTTTTCTTTTTCTTTCTTTCTTTTTTTTTCTTTTTTGTAAATGTAAATTT

9945

KIF5A

KIF5A-202

KIF5A-202

AAGGAATAAACAACTTAAAGACATAAAGAGCCAGGCTTGGAAATTTAGAGCCCAGCCAAGAATACAGAAGTAGGTAGCAGGCCTT
TTCTTATTTGTTGAATTTCTGTATTTCTCGGTCCGAACCTTAAAATCTCGGGTTCGGTTCTTATGTCTTCATCCATCGTCCGGAA

10,030

KIF5A

KIF5A-202

KIF5A-202

CCCAGAACTCCTGAAATCATATCTCATGTCACATGGCTTTCCCTGCTCAGGAGATTACTAAATGCACCAATTTTTAGCTCTTGGG
GGGTCTTGAGGACTTTAGTATAGAGTACAGTGTACCGAAAGGGACGAGTCTCTAATGATTTACGTGGTTAAAAATCGAGAACCC

10,115

KIF5A

KIF5A-202

KIF5A-202

TATCTTTTTTTTTTTTTCAGACGGAGTCTCGCTCTGTCACCCAGGCTGGAGTGCAGTGGCGCGATCTCGGCTCACTGGAAACTCCG
ATAGAAAAAAAAAAAAAGTCTGCCTCAGAGCGAGACAGTGGGTCGACCTCACGTACCCGCGCTAGAGCCGAGTGACCTTTGAGGC

10,200

KIF5A

KIF5A-202

KIF5A-202

CCTTCCGGGTTACAGCCATTCTTCTGCCTCAGCCTCCCAAGCAGCTGGGACTACAGGCGCCTGCCACCACGCCCGGCTAATTTTT
GGAAGGCCCAAGTGCGGTAAGAAGACGGAGTCGGAGGGTTTCGTCGACCTGATGTCCGCGGACGGTGGTGCGGGCCGATTAAAAA

10,285

KIF5A

KIF5A-202

KIF5A-202

TGTATTTTTAGTGGAGACGGGGTTTTACCGTGTTAGCCAGGATGGTCTCGATCTCCTGACCTCGTGATCCACCCGCCTCGGCCTC
ACATAAAAAATCACCTCTGCCCAAAAGTGGCACAATCGGTCTACCAGAGCTAGAGGACTGGAGCACTAGGTGGGCGGAGCCGGAG

10,370

KIF5A

KIF5A-202

KIF5A-202

CCAAAGTGCTGGGATTACAGATGTGAGCCACCGCGCCAGCCCACTCTTGGGTATCTTTAGACTCAGATCTGAGAATCTCTTCC
GGTTTACGACCTAATGTCTACACTCGGTGGCGCGGGTCGGGTGAGAACCATAGAAAATCTGAGTCTAGACTCTTAGAGAAGG

10,455

KIF5A

KIF5A-202

KIF5A-202

TTCTTCCCTCTCTGCTCTTTTCTTTCTTCCCAGCCTAGACTGATGTAAAGGGGTTCTGATGAAAAGGGGCTATAATTGGCTTCA
AAGAAGGGAGAGACGAGAAAAGAAAGAAGGGTCGGATCTGACTACATTTCCCAAGGACTACTTTTCCCGATATTAACCGAAGT

10,540

KIF5A

KIF5A-202

KIF5A-202

GCATTTGGAGAGCGCTCTCCATTTAATGCGTCTGTGGAGCCTTCTAGATCCTGTAACCTGGGAATGTTTTGAGGGAGTGTGTGTG
CGTAAACCTCTCGCGAGAGGTAATAATTACGCAGACACCTCGGAAGATCTAGGACATTGACCCTTACAAAACCTCCCTCACACACAC

10,625

KIF5A

KIF5A-202

KIF5A-202

GGGGCTGGGGTGGGGTGGTTGGTGTGTTGGTGCCCATGTGTTTGTGGGGGAGGGGAGGGGCAAGATTGGCTTGAGAGTTACATT
CCCCGACCCACCCACCAACCACACAACCACGGGTACACAAAACCCCCCTCCCCTCCCCTTCTAACCGAACCTCTCAATGTAA

10,710

KIF5A

KIF5A-202

KIF5A-202

TAATCCCCTTTGGCTGGGTGCCTGGCTTCATGAAGCATGGATAGAGATTGTTGGTGGGAAAGAGATGAGAAAGCCAGTCTCATCT
ATTAGGGGAAACCGACCCACGGACCGAAGTACTTCGTACCTATCTCTAACAACCACCCTTTCTCTACTCTTTTCGGTCAGAGTAGA

10,795

KIF5A

KIF5A-202

KIF5A-202

TTTCACATTTTTCTGCCTGTTTTATATTCTGGCTGCACTGGCAGTTGATTAAATGATGCCACCCAGATTAAGGGTGGATCTGCC
AAAGTGTA AAAAAGACGGACAAAATATAAGACCGACGTGACCGTCAACTAATTTACTACGGGTGGGTCTAATTCACCTAGACGG

10,880

KIF5A

KIF5A-202

KIF5A-202

TTTCCCAGTCCACTGACTCATATGTTAATATCCTTTGGCAACACCCTCACAGACACACCCAGGATCAATACTTTGCATCATTTCAG
AAAGGGTCAGGTGACTGAGTATACAATTATAGGAAACCGTTGTGGGAGTGTCTGTGTGGGTCTTAGTTATGAAACGTTAGTAAGTC

10,965

KIF5A

KIF5A-202

KIF5A-202

TCCAGTCAAGTTGACACTCAGTATTAACCATCACAAATTCACCCCTCATCAACTTGAACCCATACACATCTCCTGAGATCGTACA
AGGTCAGTTCAACTGTGAGTCATAATTGGTAGTGTAAAGGTGGGGAGTAGTTGAACTTGGGTATGTGTAGAGGACTCTAGCATGT

11,050

KIF5A

KIF5A-202

KIF5A-202

AATCTTCAAATAAGGACAATAATAAGGTCATAATTATGCGCCTAATATAATAACAATATCCTTCGTACAACCGGAAATGCACCAA
TTAGAAGTTTATTCTGTTATTATTCCAGTATTAATACGCGGATTATATTATGTTGATAGGAAGCATGTTGGCCTTTACGTGGTT

11,135

KIF5A

KIF5A-202

KIF5A-202

TCCCCAACCCAAATGCTATTATATAAAGTTAACATACTTAAATGCTGATACGAAGTCAATAAGTCTTATGTCACATAATAAAGGA
AGGGGTTGGGTTTACGATAATATATTTCAATTGTATGAATTTACGACTATGCTTCAGTTATTCAGAATACAGTGTATTATTTCTT

11,220

KIF5A

KIF5A-202

KIF5A-202

AAAAGGAAATTA AAAAAAAAAAAGATGAGAGGCATTGGCTTGAGATAGACATATTTTGCTTGTCTTCTGTTTCTTGCCACTGGGTG
TTTTCTTTAATTTTTTTTTTTTCTACTCTCCGTAACCGAACTCTATCTGTATAAAACGAACAAAGACAAAGAACC GG TGACCCAC

11,305

KIF5A

KIF5A-202

KIF5A-202

GGAGAAACATTGAGGTAGATTACAATTTAAAATTAATTACAATTCAAAATTAAGGTAGATTTTTCTTTAATAATATTAAAAATAA
CCTCTTTGTAACCTCATCTAATGTTAAATTTAATTAATGTTAAGTTTTAATTCATCTAAAAAGAAATTTATTATAATTTTTATT

11,390

KIF5A

KIF5A-202

KIF5A-202

TGTAATTACAACACTAATACATTTTAATTGTTAACAAAGTTCAAGACAAAGGAAAGGACACCGAAGAAGCTAAAAATCACCCAAT
ACATTAATGTTGTGATTATGTAAAATTAACAATTGTTTCAAGTTCTGTTTCCTTTCCTGTGGCTTCTTCGATTTTTAGTGGGTTA

11,475

KIF5A

KIF5A-202

KIF5A-202

ATCTTACCACCCCAAAGAAGCACTGTTATTAATAATAATTTGATGTATTTTTCCAGTGTTTTTTCTACATATATACATATGTTAA
TAGAATGGTGGGGTTTCTTCGTGACAATAATTATTATTAACTACATAAAAAAGGTCACAAAAAAGATGTATATATGTATACAATT

11,560

KIF5A

KIF5A-202

KIF5A-202

TTTTAATAAGATTATATATCATAAACTATATATTGTTTTGTAACCTTTTTTCTCAAACAAAATATTATTACTATTTTTGCCATTGT
AAAATTATTCTAATATATAGTATTTGATATATAACAAAACATTGGAAAAAAGAGTTTGTTTTATAATAATGATAAAACGGTAACA

11,645

KIF5A

KIF5A-202

KIF5A-202

TAAATATTTTTACATAACTTTATTATTTTTACAATTTTTCTGTTTTTTTTTTGAGATGGAGTCAGGCTGGAGTGTGCAGTGGTGTG
ATTTATAAAAATGTATTGAAATAATAAAATGTTAAAAAGACAAAAAAAACCTCTACCTCAGTCCGACCTCACACGTCACCCACAC

11,730

KIF5A

KIF5A-202

KIF5A-202

ATCTTGGCTCACTGCAACCTCTGCCTCCCGGGTTCAAGCAATCCTCCCACCTCAGCTTCTCGAGTAGCTAGGATTATAGGCATGT
TAGAACCGAGTGACGTTGGAGACGGAGGGCCCAAGTTCGTTAGGAGGGTGGAGTCGAAGGACTCATCGATCCTAATATCCGTACA

11,815

KIF5A

KIF5A-202

KIF5A-202

ACCACCATGCCTGGCTATATTTTTACAATTTTTCAATTTAACTTTTGAATGTCTTACCTGCACATGTGACAAAATGCAAAGGATATG
TGGTGGTACGGACCGATATAAAAATGTTAAAAAGTTAAATTTGAAAAGCTTACAGAATGGACGTGTACACTGTTTTACGTTTCCTATAC

11,900

KIF5A

KIF5A-202

KIF5A-202

AAAAGGTTTATATTGTTTCCTTCTCCTTCTCACCCCTCTTTTCCAGCCACACAGTTCCCTTTTTCAGAAGGCAACTTCTTGTGGAT
TTTTCCAAATATAACAAAGGAAGAGGAAGAGTGGGGAGAAAAGGTCGGTGTGTCAAGGGAAAAGTCTTCCGTTGAAGAACACCTA

11,985

KIF5A

KIF5A-202

KIF5A-202

CTTTCCAAAAACCTACTATACATTTATAAGCAAATACATATATACATGCATACCTTTTTTTTACACAAATGGTAGCGTATTATACA
GAAAGGTTTTTGGATGATATGTAATATTCGTTTATGTATATATGTACGTATGGAAAAAATGTGTTTACCATCGCATAATATGT

12,070

KIF5A

KIF5A-202

KIF5A-202

TCCATTCTGCACCTTTAAAAACAAAAACAGCCTGGGTGTGGTGGCTCATGCCTGTAATCTAAGCACTTTGAGGCCGAGGCGGGAG
AGGTAAGACGTGGAAATTTTTGTTTTTGTTCGGACCCACACCACCGAGTACGGACATTAGATTTCGTGAAACTCCGGCTCCGCCCTC

12,155

KIF5A

KIF5A-202

KIF5A-202

GATCACTTGAGGTCAGGAGTTCGAGACCAGCCTGACCAACATGGTGAACCCCATCTCTACTAAAAATATAAAAAATTCTGGCTGG
CTAGTGAACCTCCAGTCCCTCAAGCTCTGGTCGGACTGGTTGTACCACCTTTGGGGTAGAGATGATTTTTATATTTTTAAGACCGACC

12,240

KIF5A

KIF5A-202

KIF5A-202

GTGCAGTGGCTCACACCTGTAATCCCAGCACTTTGGGAGGCTGAGGTGGGCGGATCATGAGGTCAGGAGATGGAGACCATCCTGG
CACGTCACCGAGTGTGGACATTAGGGTCGTGAAACCTCCGACTCCACCCGCTAGTACTCCAGTCCCTCTACCTCTGGTAGGACC

12,325

KIF5A

KIF5A-202

KIF5A-202

CCAACATGGTGAACCTCGTCTCTACTAAAAATACAAAAATTAGGCCAGGTGCGGTGGCTTACGCCTGTAATCTCAGCATTGGGA
GGTTGTACCACCTTTGGAGCAGAGATGATTTTTATGTTTTAATCCGGTCCACGCCACCGAATGCGGACATTAGAGTCGTAACCTC

12,410

KIF5A

KIF5A-202

KIF5A-202

GGCCAAGGCGGGTGGATCACCTGAGGTCAGGAGTTCAAGACCAGCCTGGCCAACATGGCCAACCCCATCTCTACTAAAAATACA
CCGGTTCCGCCACCTAGTGGACTCCAGTCCCTCAAGTTCTGGTCGGACCGGTTGTACCGGTTTGGGGTAGAGATGATTTTTATGT

12,495

KIF5A

KIF5A-202

KIF5A-202

GAAATTAGCCGGGTGTGGTGGCGGGCGCCTATAATCCCAGCTACTCTGGAGGCTGAAGCAGGAGAACTGCTTGAGCCCGGGAGGC
CTTTAATCGGCCACACCACCGCCCGCGGATATTAGGGTCGATGAGACCTCCGACTTCGTCTCTTTGACGAACTCGGGCCCTCCG

12,580

KIF5A

KIF5A-202

KIF5A-202

AGAGGTTGCGGTGAGCTGAGATGGAGCCACTGCACTCCAGCTTGGGCGACAGAGCAAGACTCTTGTCTCAAAAAACAAAAAGCAA
TCTCCAACGCCACTCGACTCTACCTCGGTGACGTGAGGTGGAACCCGCTGTCTCGTTCTGAGAACAGAGTTTTTTTGTTCGTT

12,665

KIF5A

KIF5A-202

KIF5A-202

AACAAACAAACAAAAACCCAAAACAAAACAGAGTCTTGGACACCCCTTCTTATCAGCACATAAAGATTTATCTCATTCTTTTTT
TTGTTTGTGTTGTTTTTGGGTTTTGTTTTGTCTCAGAACCTGTGGGAAGGAATAGTCGTGATTCTAAATAGAGTAAGAAAAAA

12,750

KIF5A

KIF5A-202

KIF5A-202

GGTTTTGTTTTGTTTTTCAAGACAGGGTCTCACTCTGTTGCTCAGGCTGGAGTGCAGTGGTGCATCATGGCTCACTGCAACCTT
CCAAAACAAAACAAAAAGTTCTGTCCCAGAGTGAGACAACGAGTCCGACCTCACGTCACCACGTTAGTACCGAGTGACGTTGGAA

12,835

KIF5A

KIF5A-202

KIF5A-202

CACCTTCGAGGCTCAGGCCATCATCCTGCCTCAGCCTGCTGAGTAGCTGGGACCACAAGGCCCATGCCACCACACCTGGCTATTT
GTGGAAGCTCCGAGTCCGGTAGTAGGACGGAGTCGGACGACTCATCGACCTGGTGTTCGGGTACGGTGGTGTGGACCGATAAA

12,920

KIF5A

KIF5A-202

KIF5A-202

TTTTTAATTTTTGTAGAGACAGGGTCTCCCTATGTTGCCAGGCTGGTCTCCAACCTCCTGGCCTCAAGGATCCTCCAGACTTGA
AAAAAATTA AAAACATCTCTGTCCCAGAGGGATACAACGGGTCCGACCAGAGGTTGAGGACCGGAGTTCTTAGGAGGTCTGAACT

13,005

KIF5A

KIF5A-202

KIF5A-202

CCTCCAAAGGGCTCGGATTACACGGTACATGAGCTATCTCATTCAACTGTATAATTTGTTGTAGGGATAGGCCATTATTTAACC
GGAGGGTTTTCCGAGCCTAATGTGCCATGTACTCGATAGAGTAAGTTGACATATTAACAACATCCCTATCCGGTAATAAATTGG

13,090

KIF5A

KIF5A-202

KIF5A-202

AGGCCTCTGTTGGTGGACATTAAGGGTTGTTCTAATCATCTGCTATTACAAACAGTTGAATGACCTTGTATAAATATTTTTTGCA
TCCGGAGACAACCACCTGTAATTCCAACAAGATTAGTAGACGATAATGTTTGTCAACTTACTGGAACATATTTATAAAAAACGT

13,175

KIF5A

KIF5A-202

KIF5A-202

TATGTGCAGTATGTCTACAGGATAAAATTTTTCGAAGTGGAGGTCATAAAGCATATGCATTTAAAAATGTGAGGCTATTTCCAAAT
ATACACGTCATACAGATGTCCTATTTAAAAAGCTTCACCTCCAGTATTTTCGTATACGTAAATTTTTTACACTCCGATAAAGGTTTA

13,260

KIF5A

KIF5A-202

KIF5A-202

TGCCTTTACAGAGTTGGCTCCAATTTCTATGTACCCTCAGCAGTATGTGTGAATATCTATTTACTCACATTCTCACCAGTGTA
ACGGAAAAGTGTCTCAACCGAGGTTAAAGATACATGGGAGTCGTCATACACACTTATAGATAAATGAGTGTAAGAGTGGTCACATT

13,345

KIF5A

KIF5A-202

KIF5A-202

TGCGTTGTCTATTTTTATTTGGCCACTTTTCATAGGTAAAAATGGTGTTCATAGTTTTAATATGCATTTTGCTTATTAACAGTGA
ACGCAACAGATAAAAATAAACCGGTGAAAGTATCCATTTTACCACAAAGTATCAAAATTATACGTAAAACGAATAATTGTCCT

13,430

KIF5A

KIF5A-202

KIF5A-202

GGTCGAGCATTAAATTAATATTAATTAATATATTTTTAACATTTAGGAGCCACTATAACATCATTTTTATGATGTTATAATTTATGAT
CCAGCTCGTAATTAATTATAATTAATTATATAAAATTGTAATCCTCGGTGATATTGTAGTAAAATACTACAATATTAATACTA

13,515

KIF5A

KIF5A-202

KIF5A-202

AGTGATATAATTTACATACAGTGTACAGATCTTAGGCAAACAGCTTGATAAATTTTATGACATATGTAGACACCCATGTAACCAC
TCACTATATTAATGATGTCACATGTCTAGAATCCGTTTGTGCGAACTATTTAAAATACTGTATACATCTGTGGGTACATTGGTG

13,600

KIF5A

KIF5A-202

KIF5A-202

TACACAGATCAAGATCTAGAACATTTCTGTCACCTCCTGAAAGCTCCTTCATATCCTCTTCTGTAATACCACTTGTATGTTGTT
ATGTGTCTAGTTCTAGATCTTGTAAAGACAGTGAGGACTTTGAGGAAAGTATAGGAGAAGGACATTTATGGTGAACATACAACAA

13,685

KIF5A

KIF5A-202

KIF5A-202

ACCACAATAGCAGGTAGCTGCTGTTTTGACTTCTAGCACTACAGATAAGTTCTGTCCATTCTTGAACCTTCATATGAAGGGAGTAA
TGGTGTATCGTCCATCGACGACAAAACCTGAAGATCGTGATGTCTATTCAAGACAGGTAAGAACTTGAAGTATACTTCCCTCATT

13,770

KIF5A

KIF5A-202

KIF5A-202

TACAGTATGTGCTCTTTTGTGTTTGGATTCTTTCAACGTGTTTTTGGAGATATATTGACGTTCTATTTATTAATGTTCTATTATGA
ATGTCATACACGAGAAAAACACAAACCTAAGAAAAGTTGCACAAAAACTCTATATAACTGCAAGATAAAATAATTACAAGATAACT

13,855

KIF5A

KIF5A-202

KIF5A-202

TATTTTAATTTTATTTATTTATTTTTTTTTGGGACAGAGTTGCACTTTTGTGCTCAGGCTGGAGTGCGGTGGCGCGATCTCGGCTC
ATAAAATTAATAAAATAAAATAAAAAAACCTGTCTCAACGTGAAACGACGAGTCCGACCTCACGCCACCGCGCTAGAGCCGAG

13,940

KIF5A

KIF5A-202

KIF5A-202

ACTGCAACCTCTGCCTCCTGGGTTCAAGCGATTCTTGTGCCTCAGCCTCCCAAGTAGCTGAGATTACAGGCATGCACCGCTATGC
TGACGTTGGAGACGGAGGACCCAAGTTCGCTAAGAACACGGAGTCGGAGGGTTCATCGACTCTAATGTCCGTACGTGGCGATACG

14,025

KIF5A

KIF5A-202

KIF5A-202

CCAGCTAATTTTTGTATTTTTAGTAGAGACATGGTTTTACCATGTTGGCCAGGCTAGTCTCGAACTCCTGACCTCAAGTAATCTG
GGTCGATTAAAAACATAAAAAATCATCTCTGTACCAAAGTGGTACAACCGGTCCGATCAGAGCTTGAGGACTGGAGTTCATTAGAC

14,110

KIF5A

KIF5A-202

KIF5A-202

CCTGCCTTGGCCTCCCAAAGTGCTGAGATTACAGGCGTGAGCCACCATGCCTAGCCAGTTATGGCATTATTTTAAATAACAGTGA
GGACGGAACCGGAGGGTTTTACGACTCTAATGTCCGCACTCGGTGGTACGGATCGGTCAATACCGTAATAAAATTTATTGTCACT

14,195

KIF5A

KIF5A-202

KIF5A-202

GGAATAAAATATATGTATATGCTATAATTTAATTCACCTCCTTAGGTTAACAGTCTCCTAAATGTTACTCCTTTAAGTCGTCTTC
CCTTATTTTATATACATATACGATATTAAATTAAGTGAGGAATCCAATTGGTCAGAGGATTTACAATGAGGAAATTCAGCAGAAG

14,280

KIF5A

KIF5A-202

KIF5A-202

AATTTCTCATTATTATAAGCAATGTGATGATAAACACCCTTGTAGCGAAATCTTGATTTCCATGATATCAATTCTTAGAAGTAGA
TTAAAGAGTAATAATATTGTTACTACTATTTGTGGGAACATCGCTTTAGAATAAAGGTACTATAGTTAAGAATCTTCATCT

14,365

KIF5A

KIF5A-202

KIF5A-202

ATTTCTAGATCAATGGATATGTAAAAATTTAAGGCTTTTGGATTATGCATTTTTGAATTGTTATATGGATGTACTCTCCAACCAGAA
TAAAGATCTAGTTACCTATACATTTTAAATTCGAAAACTAATACGTAAAAACTTAACAATATACCTACATGAGAGGTTGGTCTT

14,450

KIF5A

KIF5A-202

KIF5A-202

AATAATGAAAGTTCTCATTTTTTTGAACCCACATCTACACTGGGTATTACAATGCAAATTTTGTTCAGTTTGGAGAGGTGAAA
TTATTACTTTCAAGAGTAAAAAACTTGGGTGTAGATGTGACCCATAATGTTACGTTTAAAAACAAAAGGTCAAACCTCTCCACTTT

14,535

KIF5A

KIF5A-202

KIF5A-202

AGAAATTTTACCATTTTCAGTTTCTTTTCTTGGAAAATGTTGAACATCTTCATGATTGCTGAACATTTATATTTCTTCTTCTGTTG
TCTTTAAATGGTAAAGTCAAAGAAAAGAACCTTTTACAACCTTGTAGAAGTACTAACGACTTGTAAATATAAAGAAGAAGACAAC

14,620

KIF5A

KIF5A-202

KIF5A-202

CTTGTTTCTAGTTCTTGTTACCTTTTTCTGTTTAGTTTTGTCTTTTTGTTACTAATTTATGAGAGTTTTTAAGGCGGGGCATG
GAACAAAGATCAAGAACAAGTGGAAAAGACAAATCAAAAACAGAAAAACAATGATTAATACTCTCAAAAATTCCGCCCGTAC

14,705

KIF5A

KIF5A-202

KIF5A-202

GTGGCTCACGCTTGCAATCCTAGCACTTTGGGAGGCTGAGGTGGGTGGATTGCTTGAGCCCAGGAGTTTGAGACCAGCCAGGCA
CACCGAGTGCGAACGTTAGGATCGTGAAACCCTCCGACTCCACCCACCTAACGAACTCGGGTCTCAAACTCTGGTCGGGTCCGT

14,790

KIF5A

KIF5A-202

KIF5A-202

ACATGGTGAGACTCTGCCTCTACAAAAATAAACAAAATTAGGCAGATATAGTGGTATGTGCCTGTGGTCCAGCTACTTGGGAG
TGTACCACTCTGAGACGGAGATGTTTTTTATTTGTTTTAATCCGTCTATATCACCATACACGGACACCAGGGTTCGATGAACCCTC

14,875

KIF5A

KIF5A-202

KIF5A-202

GATTGCTTGGGCCTGGGAGGTTGCAGCTGCAGTGAGCTGTGATTTCCGCACTGTACTCCAGCCTACATGACAGATGAGACCCTGA
CTAACGAACCCGGACCCTCCAACGTCGACGTCACCTCGACACTAAAGCGGTGACATGAGGTTCGGATGTACTGTCTACTCTGGGACT

14,960

KIF5A

KIF5A-202

KIF5A-202

CTCAAGAAAAAGAAAAAGAAAAAGAAAAATAGAGAGATTTTTTGGATTATTTGTTTGTGTTTATTTGTTTGTGTTTGTGTTGATACAGGGTCTC
GAGTTCTTTTTCTTTTTCTTTTTCTTTTTATCTCTCTCTAAAAAACTAATAAACAAACAAATAAACAAACAAACAAACTATGTCCCAGAG

15,045

KIF5A

KIF5A-202

KIF5A-202

TCTCTGTCACCCAGGCTGGAGTGCAGTGGCCCGATCTTGGCTCACTGCAACCTCTGCCTTTTGGAGCTCAGGTAATTCTCCCATCT
AGAGACAGTGGGTCCGACCTCACGTCAACGGGCTAGAACCGAGTGACGTTGGAGACGGAAAACTCGAGTCCATTAAGAGGGGTAGA

15,130

KIF5A

KIF5A-202

KIF5A-202

CAGCCTCCTGAGTAGCTGGAATTACAGGTGTGCACCACCACACCCAGCTAATTTTTGTATTTTTGTAGAGATGGGGTTTCACCA
GTCGGAGGACTCATCGACCTTAATGTCCACACGTGGTGGTGTGGGTCGATTAACAAACATAAAAAACATCTCTACCCCAAAGTGGT

15,215

KIF5A

KIF5A-202

KIF5A-202

TGTTGCCAGTCTGGTCTTAAACTCCTGACCTCAAGTAATCTGCCTGCCTCAGCCTCCCAAAGTGCTGGGATTACATGCATGAGT
ACAACGGGTGAGACAGAAATTTGAGGACTGGAGTTCATTAGACGGACGGAGTCGGAGGGTTTCACGACCCTAATGTACGTA

15,300

KIF5A

KIF5A-202

KIF5A-202

CACCGTGCCAGCCAGCAGTGTGTTTTGTAAAAGGAAATCTTAGCACTGGAATCCTGGTGCAGACTATGAACAGTATGGACATTT
GTGGCACGGGTGCGGTCGTCAACAAAACATTTTTCTTTTGAATCGTGACCTTAGGACCACGTCGTGATACTTGTGCATACCTGTAAA

15,385

KIF5A

KIF5A-202

KIF5A-202

AAATATTTAATAGAATTGTCCTCCAGAAAGGTTCTATCAGTTGGTAATTTACAGAGAGCACTTTTTCTAACTTCTTTTTCTTTGTG
TTTATAAATTATCTTAACAGGAGGTCTTTCCAAGATAGTCAACCATTAAATGTCTCTCGTGAAAAGATTGAAGAAAAGGAAACAC

15,470

KIF5A

KIF5A-202

KIF5A-202

GATTCTGTTTCTTGGACTTCAGAGGCTTTACCACAGAGAGACTGGATAAATATTTTAGGTAGGATTTTTTCTATAAGCCAAAT
CTAAGACAAAGAACCTGAAGTCTCCGAAAGTGGTGTCTCTCTGACCTATTTATAAAATCCATCCTAAAAAAGATATTCGGTTTA

15,555

KIF5A

KIF5A-202

KIF5A-202

TTAATTGTTTAAATATTAATAAAAAACATTTATTAGTTTTCTTTTATACAAAGAAATATAAAGAAGAAAAGAATAAACGATTATTTCT
AATTAACAAAATTATAATTTTTTGTAAATAATCAAAGAAAATATGTTTTCTTTATATTTCTTCTTTTCTTATTTGCTAATAAAGA

15,640

KIF5A

KIF5A-202

KIF5A-202

TTTTTGCCATTAAAACTTTTTAAATATAATGCTCGTACATAGTTTTAAAAATGTAAACCATGCAGGATACAAAATGAAAAATAAA
AAAAACGGTAATTTTGAAAAATTTTATATTACGAGCATGTATCAAATTTTACATTTGGTACGTCCTATGTTTTACTTTTTATTT

15,725

KIF5A

KIF5A-202

KIF5A-202

AGCCTTTCTCTCAGTTTTCTCTCCTCAAAGTAACCACTGTTAACACTTTTTGTATAATTCCTTCTAGAAAAAAATTTCTGTAGATAT
TCGGAAGAGAGATCAAAGAGAGGAGTTTCATTGGTGACAATTGTGAAAACATATTAAGGAAGATCTTTTTTTTAAAGACATCTATA

15,810

KIF5A

KIF5A-202

KIF5A-202

TCATGCAATGTTATTGCTATACCTAGAGCCACATCTCCAGCTCTAGCCAAGGTTTACAACCTTTCCTTAATTAGTTAAAACATATC
AGTACGTTACAATAACGATATGGATCTCGGTGTAGAGGTCGAGATCGGTTCCAAATGTTGAAAGGAATTAATCAATTTTGTATAG

15,895

KIF5A

KIF5A-202

KIF5A-202

TCCAAACTCTGCAAACTCTGGCGTCTGTAGATCTTGAGGTTTACATTTGATTGGATAAAGATGGACTCTGTAGTAAAAACAATT
AGGGTTTTGAGACGTTTGGAGACCGCAGACATCTAGAACTCCAAATGTAAAGCTAACCTATTTCTACCTGAGACATCATTTTTGTTAA

15,980

KIF5A

KIF5A-202

KIF5A-202

TGACAAGTCAGTCACCTATGATAGAGAACAAGCATTGTCTCATTACTCGTCCCAGAGATTTACCTCTAATGCATCTAGCCATCA
ACTGTTTCAGTCAGTGGATACTATCTTGTTCGTAACAGAGTAAATGAGCAGGGTCTCTAAATGGAGATTACGTAGATCGGTAGT

16,065

KIF5A

KIF5A-202

KIF5A-202

AATATATTCATTGGTTAGCTTCCTAAGTTGTAAGTATTTTGTGTCCTTTATCATTCTTATCAGCACATGTGATTTACAACATATTC
TTATATAAGTAACCAATCGAAGGATTCAACATTCATAAAACACAGAAATAGTAAGAATAGTCGTGTACACTAAATGTTGTATAAG

16,150

KIF5A

KIF5A-202

KIF5A-202

CTGAATTAACAAGGATTTGTAAGTCTGAATGATTTGCTTCACAGTCTTTTTTTTTTTGAGACGAAGTCTTGCTCTTGTCCCCAG
GACTTAATTTGTTCCCTAAACATTCAGACTTACTAAACGAAGTGTCAAGAAAAAAAAAACTCTGCTTCAGAACGAGAACAGGGGGTC

16,235

KIF5A

KIF5A-202

KIF5A-202

GCTGGAGTGCAGTGGCGCAATCTTGGCTCACTGCAACCTCCGCCTCCTGGGTTCAAGCGATTCTCCTGCCTCAGCCTCCGGCGTA
CGACCTCACGTCACCGCGTTAGAACCGAGTGACGTTGGAGGCGGAGGACCCAAGTTCGCTAAGAGGACGGAGTCGGAGGCCGCAT

16,320

KIF5A

KIF5A-202

KIF5A-202

GCTGGGATTACAGGTGCCTGCCACCACGCCAGCTAATTTTTGTATTTTTAGTAGAGATGGGGTTTCAGCATGTTGGCCAGGCTG
CGACCCTAATGTCCACGGACGGTGGTGCGGGTCGATTA AAAACATAAAAATCATCTCTACCCCAAAGTCGTACAACCGGTCCGAC

16,405

KIF5A

KIF5A-202

KIF5A-202

GTCTCGAACTCCTCACCTCAGGTGATCTGCCTGCCTTGGCCTCCCAAAGTGCTGGGATTACAGGCTTGAGCCACCGTGCCCGACC
CAGAGCTTGAGGAGTGGAGTCCACTAGACGGACGGAACCGGAGGGTTTCACGACCCTAATGTCCGAACTCGGTGGCACGGGCTGG

16,490

KIF5A

KIF5A-202

KIF5A-202

CACAGTCTCTTTAATTAAGCTTGTCTGTTCTTAAAGGGAGACCCACATATCTGATTTTATATATTCCTTTCACAAAGAGAG
GTGTCAAGAAGAAATTAATTTGAAACAAGACAAGAATTTCCCTCTGGGTGTATAGACTAAAGTATATAAGGAAAGTGTCTCTC

16,575

KIF5A

KIF5A-202

KIF5A-202

AGAGCTTGTGTTAATGTTTCCACAGAGGCTCTCAGTGTAGACTGAATTTTCAATTTACATGGTAGGGAACATGCTATAAATATATGT
TCTCGAACACAATTACAAAGGTGTCTCCGAGAGTCACATCTGACTTAAAGTAAATGTACCATCCCTTGTACGATATTTATATACA

16,660

KIF5A

KIF5A-202

KIF5A-202

CACTAACTTTGCATCTTTCACCTTAGTACATCTAAAGATCTTTCATATCAGGGTACGTGGATCTGTTGAGGAAGATATTTCTAGC
GTGATTGAAACGTAGAAAGTGAATCATGTAGATTTCTAGAAAGGTATAGTCCCATGCACCTAGACAACCTCTTCTATAAAGATCG

16,745

KIF5A

KIF5A-202

KIF5A-202

TTGAGATACTTTTATGTTAATGAATTGTTCTTCAATTTTCATCACCTGTGGCCCTATTGTCTTTTTTCATCTGGTTTTCCAGG
AACTCTATGAAAAATCACAAATTACTTAACAAGAAGTTAAAAGTAGTGACACCCGGGATAACAGAAAAAAGTAGACCAAAGGGTCC

16,830

KIF5A

KIF5A-202

KIF5A-202

GAGGAGTTTGGGGTAGTGGAGTGCTCAATCATCACACCACGACTAAGATCCCCTAACACAATCTCACTGTGCGACACTCCTCTAC
CTCCTCAAACCCCATCACCTCACGAGTTAGTAGTGTGGTGTCTGATTCTAGGGGATTGTGTTAGAGTGACACGCTGTGAGGAGATG

16,915

KIF5A

KIF5A-202

KIF5A-202

CCCACAGACACAACCTCCTGGCATCAGTACCTTTAGTTTCTTTATTCTCCCACATTTCTTTTTCTTTCTTTCTTTTTTTTTTTT
GGGTGTCTGTGTTGAGGACCGTAGTCATGGAAATCAAAGAGAATAAGAGGGTGTAAAGAAAAGAAAAGAAGAAGAAAAA

17,000

KIF5A

KIF5A-202

KIF5A-202

GAGATGGAGTCTCGCTCTATCGCCAGGCTGGAGTGCAGTGGCGCAATCTCGGCTCACTGCAACCTCTGCCTCTCGGGTTCAAGCG
CTCTACCTCAGAGCGAGATAGCGGTCCGACCTCACGTCACCGCGTTAGAGCCGAGTGACGTTGGAGACGGAGAGCCCAAGTTCGC

17,085

KIF5A

KIF5A-202

KIF5A-202

ATTCTCCTGTCTCTGCCTCCCGAGTAGCTGGGACTACAGGCACGTGCCACCACACCAGGCTAATTTTTGTATTTTTAGTAGAGAC
TAAGAGGACAGAGACGGAGGGCTCATCGACCCTGATGTCCGTGCACGGTGGTGTGGTCCGATTA AAAACATAAAAATCATCTCTG

17,170

KIF5A

KIF5A-202

KIF5A-202

GGGGTTTCACCATATTGGTCAGGCTGGTCTTGAACCTCTGACCTCGTGATCCGCCTGCCTCAGCCTCTTAAAATGATGGGATTAC
CCCCAAAGTGGTATAACCAGTCCGACCAGA AACTTGAGGACTGGAGCACTAGGCGGACGGAGTCGGAGAATTTTACTACCCTAATG

17,255

KIF5A

KIF5A-202

KIF5A-202

AGGTGTGAGCCACCACGCCCCGGCCATTCTCCCACATTTCTGTTTCAATTAAGGGCATTGAAGAAAAGGGTGCCTTTCTCAGCTGCTG
TCCACACTCGGTGGTGC GGGCCGGTAAGAGGGTGTAAAGACAAGTAATTCCCGTAACTTCTTTTCCCACGGAAAGAGTCGACGAC

17,340

KIF5A

KIF5A-202

KIF5A-202

GAAGGAGGTTGTGGTATTTCTTTTCCCTCACATCCTGCCTGTTGACGTCTGATATCTTTTATTTTCATTCCAGGGGAAGCCATAT
CTTCCTCCAACACCATAAAGAAAAGGGAGTGTAGGACGGACAACCTGCAGACTATAGAAAAATAAAAGTAAGGTCCCCTTCGGTATA

17,425

KIF5A

KIF5A-202

45
G K P Y
ENSE00001264365

KIF5A-202

GTTTTTGACCGTGTATTCCCCCAAACACGACTCAAGAGCAAGTTTATCATGCATGTGCCATGCAGATTGTCAAAGGTAATAGAT
CAAAAACCTGGCACATAAAGGGGGGTTTGTGCTGAGTTCTCGTTCAAATAGTACGTACACGGTACGTCTAACAGTTTCCATTATCTA

17,510

KIF5A

KIF5A-202

50 55 60 65 70
V F D R V F P P N T T Q E Q V Y H A C A M Q I V K

ENSE00001264365

KIF5A-202

TTCTTTTGAATGTCTCTTCTCAGCACCCCATTTCTACCCGACCTATCTCCACCAGTACTCTTTTCTCTACTGTCTCTTCCAGA
AAGAAAAATCTTACAGAGAAGAGTCTGTGGGGTAAAGGATGGGCTGGATAGAGGTGGTCATGAGAAAAGAGATGACAGAGAAGGTCT

17,595

KIF5A

KIF5A-202

D

KIF5A-202

TGTCCTTGCTGGCTACAATGGCACCATTTTTGCTTATGGACAGACATCCTCAGGGAAAACACATACCATGGAGGTGAGGGTTCTG
ACAGGAACGACCGATGTTACCGTGGTAAAAACGAATACCTGTCTGTAGGAGTCCCTTTTGTGTATGGTACCTCCACTCCCAAGAC

17,680

KIF5A

KIF5A-202

75 80 85 90 95
V L A G Y N G T I F A Y G Q T S S G K T H T M E

ENSE00001264360

KIF5A-202

GCTTTGGTGGTTGAGGGGCTAGGAGTGTTAATGGAAGATCAGGGAATCTCAGTGGGGGAAGGTCTAGGAATCAAGGATTGCCTGG
CGAAACCACCAACTCCCCGATCCTCACAATTACCTTCTAGTCCCTTAGAGTCAACCCCTTCCAGATCCTTAGTTTCTAACGGACC

17,765

KIF5A

KIF5A-202

KIF5A-202

TCCAGAGGCAGATAGATGAGTACAGAGGATGAACTGAAGGGCAATATTAGGGGAAGTTTAAATGGAATCCCTCCAACCCACTGCAG
AGGTCTCCGTCTATCTACTCATGTCTCCTACTTGACTTCCCGTTATAATCCCTTCAAATTACCTTAGGGAGGTTGGGTGACGTC

17,850

KIF5A

KIF5A-202

KIF5A-202

TGGATCATCCTTTCCACTACTCCAGTCTTCTTTTGATCGGGAAAAGCAATGGAAGTCCAAAGGGCTACTCAATTATCTCCTTGCT
ACCTAGTAGGAAAAGGTGATGAGGTCAGAAGAAAACCTAGCCCTTTTCGTTACCTTCAGGTTTCCCGATGAGTTAATAGAGGAACGA

17,935

KIF5A

KIF5A-202

KIF5A-202

CCTCTAAAAGGCAGACATGGTGGTGACCATCTCCTAACTTAGGATGTTCTTCTTATTGACTCTTGCCTTGGTGTTCACCTGCATA
GGAGATTTTCCGTCTGTACCACCACTGGTAGAGGATTGAATCCTACAAGAAGAATAACTGAGAACGGAACCACAAGTGGACGTAT

18,020

KIF5A

KIF5A-202

KIF5A-202

CATCTGAGTTGTCTCATTCTCCCTGAGCCCCAGCTTCACTCTCAAATACCTTCACTCGCCAGGGAAAGCTGCACGACCCCTCAGCT
GTAGACTCAACAGAGTAAGAGGGACTCGGGGTCGAAGTGAGAGTTTATGGAAGTGAGCGGTCCTTTTCGACGTGCTGGGAGTCTCGA

18,105

KIF5A

KIF5A-202

100 105
G K L H D P Q L

ENSE00001656581

KIF5A-202

GATGGGAATCATTCTCGAATTGCCCGAGACATCTTCAACCACATCTACTCCATGGATGAGAACCTTGAGTTCCACATCAAGGTG
CTACCCTTAGTAAGGAGCTTAACGGGCTCTGTAGAAGTTGGTGTAGATGAGGTACCTACTCTTGGAACTCAAGGTGTAGTTCCAC

18,190

KIF5A

KIF5A-202

110 115 120 125 130
M G I I P R I A R D I F N H I Y S M D E N L E F H I K

ENSE00001656581

KIF5A-202

ACCAGGGCACGACAGCTGGGCATTGAGATGGGGACTGGGAGGGGAAGATCTAAAATCTTCCCACTGAAGAGCCTGGGCTCCCCAA
TGGTCCCGTGCTGTGACCCGTAAGTCTACCCCTGACCCCTCCCCTTCTAGATTTTAGAAGGGTGACTTCTCGGACCCGAGGGGTT

18,275

KIF5A

KIF5A-202

KIF5A-202

CTTGACTCCCTTTCCGGTTACCAGAGTTCTTTGTCAAGATGTTCTTCTTCTGTTCTTTTCTCCACCACCGTTTGAGCAGGTCAC
GAACTGAGGGAAAGGCCAATGGTCTCAAGAAACAGTTCTACAAGAGAAGACAAGAAAAGGAGGGTGGTGGCAAACCTCGTCCAGTG

18,360

KIF5A

KIF5A-202

KIF5A-202

ATTAGTATGGGATTCCTGAACTAGATTTAAGATAGGCCCTCTTACTTCACACTCCTTCTTCTTCTTAAACCAGGTTTCTTACTT
TAATCATACCCTAAGGACTTGATCTAAATTCTATCCGGGAGAAATGAAGTGTGAGGAAGAAAGAAGAATTGGTCCAAAGAATGAA

18,445

KIF5A

KIF5A-202

135
V S Y F

ENSE00001264...

KIF5A-202

TGAAATTTACCTGGACAAAATTCGTGACCTTCTGGATGGTGAGTGTTTTGTCCCAGTGGATGAGGGTGTGTGAGGAGGGTGGAGA
ACTTTAAATGGACCTGTTTTAAGCACTGGAAGACCTACCACTCACAAAACAGGGTCACCTACTCCCACACACTCCTCCCACCTCT

18,530

KIF5A

KIF5A-202

140 145
E I Y L D K I R D L L D

ENSE00001264351

KIF5A-202

AAAGAAAAGCTCACATTGCATTTGGAATTAGGTACCAATTGACAAGAGATGCAGAGGGGCACACAGCACCCAAGTCTTTTGGCCCCG
TTTCTTTTCGAGTGTAACGTA AACCTTAATCCATGGTTAACTGTTCTCTACGTCTCCCGTGTGTCGTGGGTTTCAGAAAAACCGGGGC

18,615

KIF5A

KIF5A-202

KIF5A-202

TTTACCAGAATTTCCAAAACTGAGAAGGTCAGGAGATGAGCTTAGCAGCCAAGGACTACATATAAACAGTTTCGAGAGGATCTGG
AAATGGTCTTAAAGGTTTTTGA CTCTTCCAGTCCTCTACTCGAATCGTCGGTTCTCTGATGTATATTTGTCAAGCTCTCCTAGACC

18,700

KIF5A

KIF5A-202

KIF5A-202

GGCCGAGGAGCAGGAGCCCTGAGGAGGAGAAGGAGGAGGA ACTGAGCCTTCAGCTCGTGCAGGGAGTTT TAGGCTTCACAGGGAGA
CCGGCTCCTCGTCTCGGGACTCCTCCTCTTCTCCTCCTTGACTCGGAAGTCGAGCACGTCCCTCAAATCCGAAGTGTCCCTCT

18,785

KIF5A

KIF5A-202

KIF5A-202

GTCTTCCTTTAGCACAGAGAAGAAAACCAACCATCTGAGCTGACTGCAAGGTGCAGATGGGGGCGGTGGAAGTACTAGTCTTGCTT
CAGAAGGAAATCGTGTCTTCTTTTGGTGGTAGACTCGACTGACGTTCCACGTCTACCCCCGCCACCTTCATGATCAGAACGAA

18,870

KIF5A

KIF5A-202

KIF5A-202

ACCCTGCATTCTTTTGATTGAGTGACCAAGACAAATCTGTCCGTGCACGAGGACAAGAACC GGGTGCCATTTGTCAAGGTGAGAG
TGGGACGTAAGAAA ACTAAGTCACTGGTTCTGTTTAGACAGGCACGTGCTCCTGTTCTTGGCCACGGTAAACAGTTCCACTCTC

18,955

KIF5A

KIF5A-202

V T K T N L S V H E D K N R V P F V K

ENSE00001264346

KIF5A-202

TGGGTGTGGGGCACCTATGTGGGGCCAGTGTATTGAGAATGTTGGTGGGGGAGGAGCATAGGTCAGTGACCCTGAAGTTGGAGGG
ACCCACACCCCGTGGATACACCCCGGTCACATAACTCTTACAACCACCCCTCCTCGTATCCAGTCACTGGGACTTCAACCTCCC

19,040

KIF5A

KIF5A-202

KIF5A-202

TGGATATCCTGGAGGAATGAGATGTGCCTAGGGGCCAGGGAGAGTCTAGGGGATCAGAAAAGATACTGTCTTGGCTGGGCATGGT
ACCTATAGGACCTCCTTACTCTACACGGATCCCCGGTCCCTCTCAGATCCCCTAGTCTTTTCTATGACAGAACC GACCCGTACCA

19,125

KIF5A

KIF5A-202

KIF5A-202

GGCTCATACTGTAATCCCAGCACTTTGGGAGGGCTGAGGTGGGTGGATCACTTGAGGCCGGGAGTTCAAGACCAGCCTGGCCAAT
CCGAGTATGGACATTAGGGTCGTGAAACCCTCCGACTCCACCCACCTAGTGAACCTCCGGCCCTCAAGTTCTGGTCGGACCGGTTA

19,210

KIF5A

KIF5A-202

KIF5A-202

ATAGTGAAACCCCGTTTTCTACTAAAAATACAAAAAATTAACCTGGGCGTGGTGGCACATGCTTGTAATCCCAGCTATTTGGGACAC
TATCACTTTGGGGCAAAGATGATTTTTATGTTTTTAAATTGACCCGCACCACCGTGTACGAACATTAGGGTCGATAAACCCCTGTG

19,295

KIF5A

KIF5A-202

KIF5A-202

TGAAGCAGGAGAATCTCTTGAACCTGGGAGGCAGAGGTTGCGGTGAGCCGAGATTGCGCCACTGCACTCCAGCCTGGGCGACAGA
ACTTCGTCTCTTAGAGAACTTGACCCCTCCGTCTCCAACGCCACTCGGCTCTAACGCGGTGACGTGAGGTCGGACCCGCTGTCT

19,380

KIF5A

KIF5A-202

KIF5A-202

GTGAGAACCTGTCTTTAAAAAAGAAAGAAAAGAAAAGATACTGTCTTGAAAGGTCATTGGTCAGTGTGCATGCAATTTAATTT
CACTCTTGACAGAAATTTTTTTCTTCTTTCTTTCTATGACAGAACTTTCCAGTAACCAGTCACACGTACGTTAAATTTAA

19,465

KIF5A

KIF5A-202

KIF5A-202

GCAAATCAAAGTTTACTGGAAGAAATGCCTGTAATCCCAACACTTTAGAAGGCTGAGGTGGGAGGATCACTTGAGGAGTTCAAGA
CGTTTAGTTTCAAATGACCTTCTTTACGGACATTAGGGTTGTGAAATCTTCCGACTCCACCCTCCTAGTGAACCTCCTCAAGTTCT

19,550

KIF5A

KIF5A-202

KIF5A-202

TCAGCCTGGCCAACATAGCAAGACCCGTCTCTTATTTAATCTAATTTTTTTTTTTTTTTTTTTTTTTGGAGACAGAGTCTCACTCT
AGTCGGACCGGTTGTATCGTTCTGGGCAGAGAGAATAAATTAGATTAAAAAACCTCTGTCTCAGAGTGAGA

19,635

KIF5A

KIF5A-202

KIF5A-202

GTTGCCAGGCTGGAGTGCAGTGGCTCGACCTAGGGTCACTGCAACCTCCCTGTCTTGGGTTCAAACGATTCTCCTGCGTCAGGC
CAACGGGTCGACCTCACGTCACCGAGCTGGATCCAGTGACGTTGGAGGGACAGGACCCAAGTTTGCTAAGAGGACGCAGTCCG

19,720

KIF5A

KIF5A-202

KIF5A-202

TCCCGAGTAGCTGGGACTACAGGCATGTGCCACCACGCCTGGCTGATTTTTAGTATTTTTAGTAGAGACGGGGTTTTACCATGTTG
AGGGCTCATCGACCCTGATGTCCGTACACGGTGGTGC GGACCGACTAAAATCATAAAAATCATCTCTGCCCCAAAGTGGTACAAC

19,805

KIF5A

KIF5A-202

KIF5A-202

GCCAGGCTGGTCTCTAATTCCTGACCTCAGGTGATCCACCTGCCTCAGCCTCCCAAAGTGCTGGAATTACAGGCATGAGCCACTA
CGGTCCGACCAGAGATTAAGGACTGGAGTCCACTAGGTGGACGGAGTCCGGAGGGTTTTACGACCTTAATGTCCGTA CT CGGTGAT

19,890

KIF5A

KIF5A-202

KIF5A-202

TGCTGAGTCTCTTGT TTTAAAAAAAAAAAAAAAAATTTTTGT CAGGCATGGTGGCACACACCTGTAGTCCCAGCTACTCAGGAGGCTG
ACGACTCAGAGAACAATTTTTTTTTTTTTTTTTAAAAACAGTCCGTACCACCGTGTGTGGACATCAGGGTTCGATGAGTCC TCCGAC

19,975

KIF5A

KIF5A-202

KIF5A-202

AGGCGGGAGAATTGCTTGAGCTCAAGAGTTT GAGGTTGCAGTGAGCCATGATAGTGCCACTGCACTCCAGCCTGTGTAGTAGAGA
TCCGCCCTCTTAACGAACTCGAGTTCTCAAAC TCCAACGTCACTCGGTACTATCACGGTGACGTGAGGTCGGACACATCATCTCT

20,060

KIF5A

KIF5A-202

KIF5A-202

GACAGTGGTTTTTTTTGTTTGT TTTGTTTTGTTTTGGAGACAGATTCTCACTCTGTCACCAGGCTGTAGTGCAATGGCATGAT
CTGTCAACAAAAAAAAACAACAAAAACAAAAACCTCTGTCTAAGAGTGAGACAGTGGGTCCGACATCACGTTACCGTACTA

20,145

KIF5A

KIF5A-202

KIF5A-202

CTTGGCTCACTGCAACCTCTGCCTCCTGGGTTCAAGTGATTCTCCTGCCTCAGCCTCCCAAGCATATGGGATTATAGGTGCCTGC
GAACCGAGTGACGTTGGAGACGGAGGACCCAAGTTC ACTAAGAGGACGGAGTCCGGAGGGTTCGTATACCCTAATATCCACGGACG

20,230

KIF5A

KIF5A-202

KIF5A-202

CACCAGGCCCACTTATTTTTGTATTTTTAGTAGAGATGGGGTTTTACCATGTTAGCCAGGCTAGTCTCGAACTCCTGACCTCAGG
GTGGTCCGGGTGAATAAAAAACATAAAAATCATCTCTACCCCAAAGTGGTACAATCGGTCCGATCAGAGCTTGAGGACTGGAGTCC

20,315

KIF5A

KIF5A-202

KIF5A-202

TGATCCGCCACCTCAGCCTCCCAAGTGTGCTGGCATTACAGGCATAAGCCACTGCACCTGGCTGCGACAGTGTTTTTTTTTTTTTTTT
ACTAGGCGGGTGGAGTCGGAGGGTCACACGACCGTAATGTCCGTATTCGGTGACGTGGACCGACGCTGTCCACAAAAAAAAAAAAA

20,400

KIF5A

KIF5A-202

KIF5A-202

GAGACAGAGTTTCTCTCTTGTGGCCAGGCTGGGGTACAGTGGCGCCCGATCTTGGCTTACTGCAACCTCAGCCTCCCGAGTTCA
CTCTGTCTCAAAGAGAGAACAACGGGTCCGACCCCATGTACCGCGGGCTAGAACC GAATGACGTTGGAGTCGGAGGGCTCAAGT

20,485

KIF5A

KIF5A-202

KIF5A-202

AGTGATTCTCCTGCCTCAGCCTCCTGAGTAGCTGGAATTACAGGCATGTGCCACCACGTCTGGCTAATTTTGTATTTTTAGTGGA
TCACTAAGAGGACGGAGTCGGAGGACTCATCGACCTTAATGTCCGTACACGGTGGTGCAGACCGATTAAACATAAAAAATCACCT

20,570

KIF5A

KIF5A-202

KIF5A-202

GATGGGATTTTGGCCATGTTGGCCAGGCTGGTACGAACTCCTGACCTCAGGTGATCCACCCACATTGGCCTCCCAAACCAAAGTG
CTACCCTAAAACGGTACAACCGGTCCGACCAAGTGTGAGGACTGGAGTCCACTAGGTGGGTGTAACCGGAGGGTTTTGGTTTCAC

20,655

KIF5A

KIF5A-202

KIF5A-202

CTGGGATTACAGGCGTGAGCCACCATGCCCGCCACTGTTTCAAAAAAGTAGTAAATACGTAAGATAAAAAATAAATACAAAGCAGG
GACCC TAATGTCCGCACTCGGTGGTACGGGCGGTGACAAAAGTTTTTTCATCATTATGCATTCTATTTTTATTTATGTTTCGTCC

20,740

KIF5A

KIF5A-202

KIF5A-202

GCATGGTGGCTCAAGCCTGTAATCCCAGCACTTTGGGAGGCCAAGGCAGGCGGATCACGAGGTCAGGACTTTGAGACCAGCCTGA
CGTACCACCGAGTTCGGACATTAGGGTCTGTGAAACCTCCGGTTCCGTCCGCCTAGTGCTCCAGTCTGAAACTCTGGTCGGACT

20,825

KIF5A

KIF5A-202

KIF5A-202

CCAACATGGTGAAACCCCGTCTCTACTAAAAATACAAAAATTAGCCGGGCGTGTTGGCTCATGCCTGTAATCCCAGCTACTCTGG
GGTTGTACCACTTTGGGGCAGAGATGATTTTTATGTTTTAATCGGCCCGCACAAACCGAGTACGGACATTAGGGTCGATGAGACC

20,910

KIF5A

KIF5A-202

KIF5A-202

AGGCTGAGGCAAGAGAATCGCTTGAACCTGGGAGGTGGAGGTTGCAGTGAGCTGAGATTCTTGACACTGCACTCCAGCCTGGGCA
TCCGACTCCGTTCTCTTAGCGAACTTGGACCCTCCACCTCCAACGTCACCTCGACTCTAAGAACTGTGACGTGAGGTCGGACCCGT

20,995

KIF5A

KIF5A-202

KIF5A-202

GAGCGAGACTCCATCTCAAAAGAAAATAATAATAATAAAAAATAATAATAATAACAACTTAAAAACAAAGCTTATGGGTCAC
CTCGCTCTGAGGTAGAGTTTTCTTTATTATTATTTTTATTTATTTATTTATGTTTGAATTTTTTGTTCGAATACCCAGTG

21,080

KIF5A

KIF5A-202

KIF5A-202

TGTCCATTTGTCCCCACAGGGTTGTAAGTGAACGCTTTGTGTCCAGCCCCGAGGAGATTCTGGATGTGATTGATGAAGGGAAATC
ACAGGTAACAGGGGGTGTCCCAACATGACTTGCGAAACACAGGTCGGGCCCTCCTCTAAGACCTACACTAACTACTTCCCTTTAG

21,165

KIF5A

KIF5A-202

G C T E R F V S P E E I L D V I D E G K S
ENSE00001264336

KIF5A-202

AAATCGTCATGTGGCTGTCACCAGTGAGTGAGGATACAAGGGGATCTCTCGAGTCTGAGGATCCACTTGTGTTCTGTGTCCTCTG
TTTAGCAGTACACCGACAGTGGTCACTCACTCCTATGTTCCCTAGAGAGCTCAGACTCCTAGGTGAACACAAGACACAGGAGAC

21,250

KIF5A

KIF5A-202

N R H V A V T
ENSE00001264336

KIF5A-202

GGGTGGAGGGACTCAAAAGTGAGCAAGGAAACTGTACCCCCAGAGGAGGAGGACCCCTTGTCTGTGGGACCCTGCTGCCTGGGA
CCCACCTCCCTGAGTTTTCACTCGTTCTTTGACATGGGGGGTCTCCTCCTCCTGGGGAACAGACACCCTGGGACGACGGACCCCT

21,335

KIF5A

KIF5A-202

KIF5A-202

GATGTGGCAGCAGGGCTAGTCCTGGTGGGCACCTTCTCTCTGGGTGGGCGGGGCTGGGGTCAGTGGAAAGCCGGGGGCTGAGGACC
CTACACCGTCGTCCCGATCAGGACCACCCGTGGAAGAGAGACCCACCCGCCCCGACCCCACTTTCGGCCCCGACTCCTGG

21,420

KIF5A

KIF5A-202

KIF5A-202

TCAGTTCTGCAGGGTGGTGCAGGTCCTGTTTCTCCCTTGCTCCTGCAGACATGAATGAACACAGCTCTCGGAGCCACAGCATCTT
AGTCAAGACGTCCACCACGTCCAGGACAAAGAGGGAAACGAGGACGTCTGTACTTACTTGTGTCGAGAGCCTCGGTGTCTGATAGAA

21,505

KIF5A

KIF5A-202

N M N E H S S R S H S I F
ENSE00001769835

KIF5A-202

CTGCCTCGGCCTCCCAAAGTGCTGGGACTACAGGCATGAGCCACTGTGCCCGGCCGACTCTTTTTTAACTAAAAAATGATTTGCA
GACGGAGCCGGAGGGTTTCACGACCCTGATGTCCGTA CTGGTGACACGGGCGGCTGAGAAAAAATTGATTTTTTACTAAACGT

22,185

KIF5A

KIF5A-202

KIF5A-202

TTGGGATATAATTACATACCATAAAGTTCACCATTTTAAAGTGCAATTCAGTTGTTTGTAGTATGTTCCCAAGGTTGTGCAACC
AACCCATATTAAGTGTATGGTATTTCAAGTGGTAAAATTTACGTTAAGTCAACAAACATCATACAAGGGTTCCAACACGTTGG

22,270

KIF5A

KIF5A-202

KIF5A-202

ATTACGCTATCCAATTCTAGAGCACTGTCATCTTCTATTACAGTCACTCTCCATTGTCCCCTAACCCCATCCCCTGTCAACTTC
TAATGCGATAGGTTAAGATCTCGTGACAGTAGAAGATAAGTGTGAGTGAAGGTAACAGGGGATTGGGGTAGGGGACAGTTGAAG

22,355

KIF5A

KIF5A-202

KIF5A-202

TAATCTACTTTCTGTCTCTATGGATTTGCCTATCCTGAACATTTTCATATAAATGGAATCATATGGCTGGGCACGGTGGCTCACAC
ATTAGATGAAAGACAGAGATACCTAAACGGATAGGACTTGTAAGTATATTTACCTTAGTATACCGACCCGTGCCACCGAGTGTG

22,440

KIF5A

KIF5A-202

KIF5A-202

CTGTAATCCCAGCACTTTGCGAGGCCGAGGTGGGTGGATCACCTGAGGTCGGGAGTTCGAGACCAGCCTGGCCAACATAGAGAAA
GACATTAGGGTTCGTGAAACGCTCCGGCTCCACCCACCTAGTGGACTCCAGCCCTCAAGCTCTGGTTCGGACCGGTTGTATCTCTTT

22,525

KIF5A

KIF5A-202

KIF5A-202

CCCCATCTCTACAAAAAATGCAAAATTAGCTGGGCGTGGTGGCACATGCCTGTAATCCCAGCTGCTCAGGAGGCTGAGGCAGGAT
GGGGTAGAGATGTTTTTTACGTTTTAATCGACCCGCACCACCGTGTACGGACATTAGGGTTCGACGAGTCTCCGACTCCGTCTTA

22,610

KIF5A

KIF5A-202

KIF5A-202

AACCGCTTGAACCTGGGAGGCCGGAGGTTGTGGTGAAGCTGAGATCGCACCATTTGCACTCCAGCCTGCGCAACAAGAGTGAAACTCC
TTGGCGAACTTGGACCCCTCCGCCTCCAACACCACTCGACTCTAGCGTGGTAAACGTGAGGTCGGACGCGTTGTTCTCACTTTGAGG

22,695

KIF5A

KIF5A-202

KIF5A-202

PCR Forward

TGTAATATGTGGCAGGGGTTAGGGG

ATCTCAAAAAAAAAAAGGAATCATGTAATATGTGGCAGGGGTTAGGGGCAATGTGGTGTGGTGGACAAGACAGTTTAGGGGAACA
TAGAGTTTTTTTTTTTTTCTTAGTACATTATACACCGTCCCAATCCCCGTTACACCACAAACTGTTCTGTCAAATCCCCTTGT

22,780

KIF5A

KIF5A-202

KIF5A-202

GAGGAAGGGCCTTCCCAATCCCAGCCAAGCATCTCTGTTACTCCATCTTCTTCCCTGTTTCCCTTCCCTCCTCCGTTGGACTGAGCC
CTCCTTCCCGAAGGGGTTAGGGTTCGGTTCGTAGAGACAATGAGGTAGAAGAAGGGACAAGGAAGGAAGGAGGCACCTGACTCGG

22,865

KIF5A

KIF5A-202

KIF5A-202

Sanger Sequencing

TGGAACGAGGTGGTGACAGC

CTGGAACGAGGTGGTGACAGCCCTCTCCATGTGCAGCTGCTCATACACACTCATCTTACTGCCCTGGTAGGTCAGCAAGACTG
GACCTTGCTCCACCACTGTCCGGGAGAGGTACACGTCGACGAGTATGTGTGAGTAGAGAATGACGGGACCATCCAGTCGTTCTGAC

22,950

KIF5A

KIF5A-202

240
V S K T
ENSE00001619453

KIF5A-202

gRNA Protospacer

CA^GCAAGTCACTGTCAGCTC

GAGCAGAGGGAGCCGTGCTGGACGAGGCAAAGAATATCA^ACAAGTCACTGTCAGCTCTGGGCAATGTGATCTCCGCACTGGCTGA
CTCGTCTCCCTCGGCACGACCTGCTCCGTTTCTTATAGT^TGTTTCAGTGACAGTCGAGACCCGTTACACTAGAGGCGTGACCGACT

23,035

KIF5A

KIF5A-202

G A E G A V L D E A K N I N K S L 245 250 255 260 265 270
G A E G A V L D E A K N I N K S L A L G N V I S A L A E

ENSE00001619453

KIF5A-202

Donor Template SNV -> REV

Protospacer Sequence

PAM

SNV

CCTGCTCCGTTTCTTATAGTTGTTTCAGTGACAGTCGAGACCCGTTACACTAGAGGCGTGACCGACT

Donor Template SNV -> REV

GGGCACTGTGAGTGATCCTTAGGTCCCCTCACCCCTCAAGCCACACCCCATCTCCTCCCCACCTGCTAATGCCACCATATGATC
CCCCTGACACTCACTAGGAATCCAGGGGAGTGGGGAGTTCGGTGTGGGGTAGAGGAGGGGGTGGACGATTACGGTGGTATACTAG

23,120

KIF5A

KIF5A-202

G T
ENSE000...

KIF5A-202

Donor Template SNV -> REV

CCCCTGACACTCACTAGGAATCCAGGGGAGTGGG

Donor Template SNV -> REV

ATGCCCAATTCATGGGTTGTCTGATCCCGGGGTGGCACCACACTATCCTTTCTGATTCCCTGTTGAATTTTATTTGTTTATTTCTG
TACGGGGTTAAGTACCCAACAGACTAGGGCCCCACCGTGGTGATAGGAAAGACTAAGGGACAACCTTAAAAATAAACAAATAAAGAC

23,205

KIF5A

KIF5A-202

KIF5A-202

ATTCTGGTCTCCTTCCTCCCCAGAAAAGCTATGTTCCATATCGTGACAGCAAATGACAAGGATTCTCCAGGACTCTCTCGGG
TAAGGACCAGAGGAAGGAGGGGGTCTTTTCGATACAAGGTATAGCACTGTCGTTTTACTGTTTCTAAGAGGTCTTGAGAGAGCCC

23,290

KIF5A

KIF5A-202

275 280 285 290
K S Y V P Y R D S K M T R I L Q D S L G

ENSE00001264317

KIF5A-202

GGAAACTGCCGGACGACTATGTTTCATCTGTTGCTCACCATCCAGTTATAATGATGCAGAGACCAAGTCCACCCTGATGTTTGGGC
CCTTTGACGGCCTGCTGATACAAGTAGACAACGAGTGGTAGGTCAATATTACTACGTCTCTGGTTCAGGTGGGACTACAAACCCG

23,375

KIF5A

KIF5A-202

295 300 305 310 315 320
G N C R T T M F I C C S P S S Y N D A E T K S T L M F G

ENSE00001264317

KIF5A-202

AGCGGTCAGTGGCAGGGTCCCCAGAGGGATCCCTGGTACCCAGCTTCCCATCCCAGCCTCTGCGGCTCTCTCTCCTCAGGGTCAC
TCGCCAGTCACCGTCCCAGGGGTCTCCCTAGGGACCATGGGTGCAAGGGTAGGGTCGGAGACGCCGAGAGAGAGGAGTCCCAGTG

23,460

KIF5A

KIF5A-202

Q R

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CCAAGTCTCATGTTGCTCTCATTTCTTTGTTCCCTCTTCTCCTCACCCAGGGCAAAGACCATTAAGAACACTGCCTCAGTAAATTT
GGTTCAGAGTACAACGAGAGTAAAGAAAACAAGGAGAAGAGGAGTGGGTCCCCTTTCTGGTAATTCTTGTGACGGAGTCATTTAAA

23,545

KIF5A

KIF5A-202

325 330 335
A K T I K N T A S V N L

ENSE00001140469

KIF5A-202

GTGGGTCCCCTTTCTGGTAATTCTT

PCR Reverse

GGAGTTGACTGCTGAGCAGTGGGAAGAAGAAAATATGAGAAGGAGAAGGAGAAGACAAAAGGCCAGAAAGGAGACGATTGCGAAGCTG
CCTCAACTGACGACTCGTCACCTTCTTTATACTCTTCTTCTTCTTCTGTTTCCGGGTCTTCTCTGCTAACGCTTCGAC

23,630

KIF5A

KIF5A-202

340 345 350 355 360
E L T A E Q W K K Y E K E K E K T K A Q K E T I A K L

ENSE00001140469

KIF5A-202

GAGGCTGAGCTGAGCCGGTGGCGCAATGGTTAGAGAGGGATAGGTGGGAGTGAGGGGGCAGTGGGAAGAGGAGGAGGATGTTTGGG
CTCCGACTCGACTCGGCCACCGCGTTACCAATCTCTCCCTATCCACCCTCACTCCCCGTCAACCCTTCTCCTCCTCCTACAAACCC

23,715

KIF5A

KIF5A-202

365 370
E A E L S R W R N
ENSE00001140469

KIF5A-202

AGCCAACTCTGTTTGGGTGGTGGTTTCTGGCCAGGCCAATCTCCTAGAAGAGGGGCTGTGTTTCTGGACAGGTGCAGTAGAGCAGT
TCGGTTGAGACAAACCCACCACAAAGACCGGTCCGGTTAGAGGATCTTCTCCCCGACACAAAGACCTGTCCACGTCACTCTCGTCA

23,800

KIF5A

KIF5A-202

KIF5A-202

CATGGGGGAAGGGAGGGGCCTGACTACCTACCTCCATACTCCAAAAGGTAGAGGGTCCACCTGGCAAGAGAGTTCAAGGGGCA
GTACCCCTTCCCTCCCCGGACTGATGGATGGAGGGTATGAGGGTTTTCCATCTCCCAGGTGGACCGTTCTCTCAAGTTCCCCGT

23,885

KIF5A

KIF5A-202

KIF5A-202

TGGTGAGTGAGAAGGAAGAACTCGTGGATGCAGCTTCTTCTTCCATCTCTCACCTCGTCTTGCCCTTTGCAGGAGAGAATG
ACCACTCACTCTTCTTCTTGGAGCACCTACGTGGAAGAAGAAGGTTAGAGAGTGGAGCAGAACGGGGAAACGTCTCTCTTAC

23,970

KIF5A

KIF5A-202

375
G E N
ENSE000011...

KIF5A-202

TGCCTGAGACAGAGCGCCTGGCTGGGGAGGAGGCAGCCCTGGGAGCCGAGCTCTGTGAGGAGACCCCTGTGAATGACAACTCATC
ACGGACTCTGTCTCGCGGACCGACCCCTCCTCCGTCGGGACCCCTCGGCTCGAGACACTCCTCTGGGGACACTTACTGTTGAGTAG

24,055

KIF5A

KIF5A-202

380 385 390 395 400
V P E T E R L A G E E A A L G A E L C E E T P V N D N S S
ENSE00001140460

KIF5A-202

CATCGTGGTGCGCATCGCGCCCGAGGAGCGGCAGAAATACGAGGAGGAGATCCGCCGTCTCTATAAGCAGCTTGACGACAAGGTTG
GTAGCACCACGCGTAGCGCGGGCTCCTCGCCGTCTTTATGCTCCTCCTCTAGGCGGCAGAGATATTGTCGAACCTGCTGTTCCAC

24,140

KIF5A

KIF5A-202

405 410 415 420 425 430
I V V R I A P E E R Q K Y E E I R R L Y K Q L D D K
ENSE00001140460

KIF5A-202

AGGGCGGCCAGGCAGGGCACTGAGGCACGCCAGGTGGGATGAGAGGTAGACGATCAAAGAAAATCGCTTATATTGCCTCTTTCTG
TCCCGCCGGTCCGTCCCGTGACTCCGTGCGGTCCACCCTACTCTCCATCTGCTAGTTTTCTTTTAGCGAATATAACGGAGAAAGAC

24,225

KIF5A

KIF5A-202

KIF5A-202

GTTTTAAAAGGGATAAATGCTTATGCTTGAAATGTGGAAACATCAATATAAATGTATGTAAGAAAATTTAAAATCATCCACTATTC
CAAAATTTTCCCTATTTACGAATACGAACTTTACACCTTTGTAGTTATATTTACATACATTCTTTTAATTTTAGTAGGTGATAAG

24,310

KIF5A

KIF5A-202

KIF5A-202

AGAGATAACACTCAACATTTTGTCTTTCTCTGTGCATATACCATGCAATTGAGTTATACTGTATAAGTAATTTTTTTTTTTGAGA
TCTCTATTGTGAGTTGTA AAAACGAAAAGAGACACGTATATGGTACGTTAACTCAATATGACATATTCATTA AAAAAAAAAAACTCT

24,395

KIF5A

KIF5A-202

KIF5A-202

CAGGGTCTTGCTGTGTCGCCAGGCTAGAGTGCAGAGGCACGATTGTGGTTCCTGCAACCTCTGCCTCTCGGGTTCAAGTGATT
GTCCCAGAACGACACAGCGGGTCCGATCTCACGTCTCCGTGCTAACACCAAGTGACGTTGGAGACGGAGAGCCCAAGTTCCTAA

24,480

KIF5A

KIF5A-202

KIF5A-202

CTCCTGCCTCAGCCTCCAGAGTAGCTGGGATTACAGGCGCATGCCACCACGCCTGGCTAATTTTTGTATTTTTGGTAGAAACGGG
GAGGACGGAGTCGGAGGTCTCATCGACCCTAATGTCCGCGTACGGTGGTGCGGACCGATTAAAAACATAAAAAACCATCTTTGCC

24,565

KIF5A

KIF5A-202

KIF5A-202

GTTTCACCATGTTGGCTAGGCTGACCTCTGGCGATCCGCCCGCCTCGGCCCCCTGAAAGTGCTTGGATTACAGGCGTGAGCCACCG
CAAAGTGGTACAACCGATCCGACTGGAGACCGCTAGGCGGGCGGAGCCGGGGGACTTCACGAACCTAATGTCCGCACTCGGTGGC

24,650

KIF5A

KIF5A-202

KIF5A-202

TGCCCGGCCTGTATATGTAATTATACATCTGATTTTTTTTCATTCAGCATTATATTATGCACAATTTCTACTTCATTAATAATTC
ACGGGCGGACATATACATTAATATGTAGACTAAAAAAGTAAGTCGTAATATAATACGTGTTAAAGGATGAAGTAATTATTAAG

24,735

KIF5A

KIF5A-202

KIF5A-202

TTCATAAAAGTATTTTTATTTTCATTTATTATTATTTTTGCTTTGAGAGAAAGAGTCTTGCTTTGTTACTCGGGCTGAAGTGC
AAGTATTTTCATAAAAATAAAAGTAAATAATAATAATAAAACGAAACTCTTTTCTCAGAACGAAACAATGAGCCCGACTTCACG

24,820

KIF5A

KIF5A-202

KIF5A-202

AGTGGTGCAGTAATAGCTCACTGCAACCTCAAACCTCCTGGGCTCGAGGGATCCCCCAACCTCAGCCTCTGAAAGAGCTGGGAC
TCACCACGTCATTATCGAGTGACGTTGGAGTTTGGAGACCCGAGCTCCCTAGGGGGGGTTGGAGTCGGAGACTTTCTCGACCTG

24,905

KIF5A

KIF5A-202

KIF5A-202

TACAGGTGCACACCACCACGCCAGCTAATTTTTTTTTTTTTTTTTTTTTTTGGTAGAGTTGGAGTCTCACTTTGTTGCCAGGCTG
ATGTCCACGTGTGGTGGTGCGGGTCGATTAATAAAAAAAAAAAAAAAAAAACCATCTCAACCTCAGAGTGAAACAACGGGTCCGAC

24,990

KIF5A

KIF5A-202

KIF5A-202

GTCTCAAACCTCCTGGCCTCAAGCGATCCTCCCGCCTTGGCCTTTCAATGCGCTGGGATTAAGGCATGCACCACCAGGCTAGCTA
CAGAGTTTGGAGACCGGAGTTCGCTAGGAGGGCGGAACCGGAAAGTTACGCGACCCTAATTTCCGTACGTGGTGGTCCGATCGAT

25,075

KIF5A

KIF5A-202

KIF5A-202

ATATTTTAAATTTTTTGTAGAGACAGGGTCTCACTATGTTGCCAGGTTGGCCTTGAACCTCCTGGCTTCAACCGATCTTCCTGTA
TATAAAATTTAAAAACATCTCTGTCCAGAGTGATACAACGGGTCCAACCGGAACCTTGAGGACCGAAGTTGGCTAGAAGGACAT

25,160

KIF5A

KIF5A-202

KIF5A-202

GGATATGGGGTTTCTAACTCAAAGCTTATACTATCTGGATTTTTATCAGGATCCTGCCTCTACCCCAAACCTTCTTACGTCTAAA
CCTATACCCCAAAGATTGAGTTTTCGAATATGATAGACCTAAAAATAGTCCTAGGACGGAGATGGGGGTTTGAAGAATGCAGATTT

25,245

KIF5A

KIF5A-202

KIF5A-202

CTGGAAGGAGTAGCTTCCCTTCACCTGTCTTTCCCTGTTGCCTCCAACAGGATGATGAAATCAACCAACAAAGCCAACCTCATAGA
GACCTTCCCTCATCGAAGGGAAGTGGACAGAAAGGGACAACGGAGGTTGTCTACTACTTTAGTTGGTTGTTTCGGTTGAGTATCT

25,330

KIF5A

KIF5A-202

KIF5A-202

D D E I N Q Q S Q L I E
ENSE00001140452

GAAGCTCAAGCAGCAAATGCTGGACCAGGAAGAGGTAATAGGAGGGAGGGCAGGACATGAGAGGAAAAGGGGTTCTGTTCACTACT
CTTCGAGTTCGTCGTTTACGACCTGGTCCCTTCTCCATTATCCTCCCTCCCGTCTGTACTCTCTTTCCCAAGACAAGTAGTGA

25,415

KIF5A

KIF5A-202

KIF5A-202

K L K Q Q M L D Q E E
ENSE00001140452

KIF5A-202

CACATGCCACTCCTCTCCCTTGAAGCTGCTGGTGTCCACCCGAGGAGACAACGAGAAGGTCCAGCGGGAGCTGAGCCACCTGCAA
GTGTACGGTGAGGAGAGGGAACTTCGACGACCACAGGTGGGCTCCTCTGTTGCTCTTCCAGGTCGCCCTCGACTCGGTGGACGTT

26,095

KIF5A

KIF5A-202

455 460 465 470
L L V S T R G D N E K V Q R E L S H L Q

ENSE00001140444

KIF5A-202

TCAGAGAACGATGCCGCTAAGGATGAGGTGAAGGAAGTGTGTCAGGCCCTGGAGGAGCTGGCTGTGAACTATGACCAGAAGTCCC
AGTCTCTTGCTACGGCGATTCTTACTCCACTTCTTCACGACGTCCGGGACCTCCTCGACCGACACTTGATACTGGTCTTCAGGG

26,180

KIF5A

KIF5A-202

475 480 485 490 495 500
S E N D A A K D E V K E V L Q A L E E L A V N Y D Q K S

ENSE00001140444

KIF5A-202

AGGAGGTGGAGGAGAAGAGCCAGCAGAACCAGCTTCTGGTGGATGAGCTGTCTCAGAAGGTGGTAAGTGGTGTGCCAATGGTCCA
TCTCCACCTCCTCTTCTCGGTCTTGGTTCGAAGACCACCTACTCGACAGAGTCTTCCACCATTACCACACGGTTACCAGGT

26,265

KIF5A

KIF5A-202

505 510 515 520
Q E V E E K S Q Q N Q L L V D E L S Q K V

ENSE00001140444

KIF5A-202

ACAGCTCCCTGACCACAGAACATCTCCCATGTGCGAGGGGACCTCTGCATCCTTCCAGGGCTGTATGGTGGCTGCACCTCTGCACT
TGTCGAGGGACTGGTGTCTTGTAGAGGGTACAGCTCCCTTGGAGACGTAGGAAGGTCCCAGACATACCACCGACGTGGAGACGTGA

26,350

KIF5A

KIF5A-202

KIF5A-202

GCTGTTCAAGTGCATTGTGAGTCCCTCCCCAACCCCTGTCACCTGCACTTTCCCTCACAGTCCCTCTGTCTTTCAAGCTCTTCTGCA
CGACAAGTACGTAACACTCAGGGAGGGGTTGGGACAGTGACGTGAAAGGGGAGTGTGAGGGAGACAGAAAGTCTGAGAAGACGT

26,435

KIF5A

KIF5A-202

KIF5A-202

GGGCCCTGTGTTCTTTCATAGCAGCCCTCAGGGTCTTGCATGAAGGGAGAGGCCTCTGCCTGGGCTGGGCAAGGGAGCAGGAGGA
CCCGGACACAAGAGAAGTATCGTCGGGAGTCCCAGAACGTACTTCCCTCTCCGGAGACGGACCCGACCCGTTCCCTCGTCTCCT

26,520

KIF5A

KIF5A-202

KIF5A-202

TGGCAACAGGAATGACCTGAGGGGCTGTCCCCAGGCCACCATGCTGTCCCTGGAGTCTGAGTTGCAGCGGCTACAGGAGGTCAGT
ACCGTTGTCTTACTGGACTCCCCGACAGGGGTTCCGGTGGTACGACAGGGACCTCAGACTCAACGTCGCCGATGTCTCCAGTCA

26,605

KIF5A

KIF5A-202

525 530 535 540
A T M L S L E S E L Q R L Q E V S

ENSE00001140437

KIF5A-202

GGACACCAGCGAAAAACGAATTGCTGAGGTGCTGAACGGGCTGATGAAGGATCTGAGCGAGTTTCAGTGTCATTGTGGGCAACGGGG
CCTGTGGTGCCTTTTGTCTAACGACTCCACGACTTGCCCGACTACTTCTAGACTCGCTCAAGTCACAGTAACACCCGTTGCCCC

26,690

KIF5A

KIF5A-202

G H Q R K R I A E V L N G L M K D L S E F S V I V G N G

ENSE00001140437

KIF5A-202

AGATTAAGCTGGTGAGTGGTGAGAGACAGCAGCCTTGTTTCAGGCTGGGCACTAGTGGAAGACGCAAGATGAGCCATCCAGGCCTT
TCTAATTCGACCACTCACCCTCTCTGTCGTCGGAACAAGTCCGACCCGTGATCACCTTCTGCGTTCTACTCGGTAGGTCCGGAA

26,775

KIF5A

KIF5A-202

E I K L

ENSE00001140...

KIF5A-202

CACAGATACTGAGAAAGGCAGCCAGAGAGCCAGGAAACATGCCTTTGAACTAGACCCAGGAAGACAGGTAGAGGCTTGTATAGAC
GTGTCTATGACTCTTCCGTCGGTCTCTCGGTCCTTTGTACGGAAACTTGATCTGGGTCCTTCTGTCCATCTCCGAACATATCTG

26,860

KIF5A

KIF5A-202

KIF5A-202

CCAATTGAAAAGATACATTCTAGGTTGGGCGCAGTGGCTCACCGCTGTAATCCAGCACTTTGGGAGGCCGAGGCAGGC GGATCA
GGTTAACTTTTCTATGTAAGATCCAACCCGCGTCACCGAGTGGCGACATTAGGGTCGTGAAACCCCTCCGGCTCCGTC CGCTAGT

26,945

KIF5A

KIF5A-202

KIF5A-202

CTTGAGGTCAGGAGTTCGAGACCTGACCTCGCCAACATGGCGAAACCCTGTCTCTACTAAAAATACAAAAATTAGCCAGGCGTG
GAACTCCAGTCCCTCAAGCTCTGGACTGGAGCGGTTGTACCGCTTTGGGACAGAGATGATTTTTATGTTTTTAATCGGTCCGCACC

27,030

KIF5A

KIF5A-202

KIF5A-202

TGATGTGCACCTGTAATTCAGCTACTCAGGAGACTGAGGCAGGAGAATCGCTTCAACCTGGGAGGTAGAGGTTGCAGTGAAGT
ACTACACGTGGACATTAAGGTCGATGAGTCCTCTGACTCCGTCCTTCTTAGCGAAGTTGGACCCTCCATCTCCAACGTCACCTGAC

27,115

KIF5A

KIF5A-202

KIF5A-202

AGATCACACCACTGCACTCTAGCCTGGGTTATAGAGTGAGACTCTGCCTTAAAAACAAAACAAAACAAAACAAAATTTCTAACGGG
TCTAGTGTGGTGACGTGAGATCGGACCCAATATCTCACTCTGAGACGGAATTTTTGTTTTGTTTTGTTTTGATTTAAGATTGCC

27,200

KIF5A

KIF5A-202

KIF5A-202

TGCTGAATAAAGAAGCAATGGAGGCCAGGCATGGTGGTTCATGCCTGTAATCCCAACATTTTGGGAGGCTGAGACAGGCCGGATCG
ACGACTTATTTCTTCGTTACCTCCGGTCCGTACCACCAAGTACGGACATTAGGGTTGTAAAACCTCCGACTCTGTCCGCCTAGC

27,285

KIF5A

KIF5A-202

KIF5A-202

CTTGAGCCCAGGAGTTCACGACCAGCCTGGGTGACATAGTGAAACCTATCTCTACAAAAAATACAAACGATTAGCTGGGGGTGG
GAACTCGGGTCCTCAAGTGCTGGTCCGACCCACTGTATCACTTTGGGATAGAGATGTTTTTTATGTTTGCTAATCGACCCCCACC

27,370

KIF5A

KIF5A-202

KIF5A-202

TGGCACACACCTATAGTACCAGCTACTTGACAGGCTGAGGTGGGAGAATCACCTGAGTATGGGAGGTTGAGGCTGCAGTGAGACA
ACCGTGTGTGGATATCATGGTTCGATGAACTGTCCGACTCCACCCTCTTAGTGGACTCATACCCTCCAACCTCCGACGTCACCTCTGT

27,455

KIF5A

KIF5A-202

KIF5A-202

TGATTGAGCTACTGCAATCCAGCCTGGGTGACAGAGCCAGACCTTGTCTTAAAAAAAAAAAAAAAAAGAGGCTGTACATGGTGGCTC
ACTAACTCGATGACGTTAGGTCGGACCCACTGTCTCGGTCTGGAACAGAATTTTTTTTTTTTTTCTCCGACATGTACCACCGAG

27,540

KIF5A

KIF5A-202

KIF5A-202

ACGCCTGTAATCCCAGCACTTTGGGAGGACGAGGCCGGGTGGATCACCTGAGGTCAGGAGTTCGAGACCAGCCTGTTCAACATGGA
TGCGGACATTAGGGTCGTGAAACCTCCTGCTCCGCCACCTAGTGGACTCCAGTCCTCAAGCTCTGGTCCGGACAAGTTGTACCT

27,625

KIF5A

KIF5A-202

KIF5A-202

GAAACTCCGTGTCTACTAAAAATATAAAATTAGCCGGGTGTGGTGGCTCATGCCTGTAATCCCAGCTACTCACGTGGCTGAGGCA
CTTTGAGGCACAGATGATTTTTATATTTAATCGGCCACACCACCGAGTACGGACATTAGGGTCGATGAGTGCACCCGACTCCGT

27,710

KIF5A

KIF5A-202

KIF5A-202

GGGGAATCGCTTGAACCTGGAGGCCGAGGTTGCAGTGAGCCGAGATTGCACCATTGCACCTCCAGCCTGGGCAACAAGAGTGAAC
CCCTTAGCGAACTTGGACCTCCGCCTCCAACGTCACCTCGGCTCTAACGTGGTAACGTGAGGTCGGACCCGTTGTTCTCACTTTG

27,795

KIF5A

KIF5A-202

KIF5A-202

TCCGTCTCAAAAAAAAAAAAAAAAAAATTTGGGAGGCCGAGGCCGAGGTCAGGAGATTGAGACCATCCTGGCTAACACAGTGAAAC
AGGCAGAGATTTTTTTTTTTTTTTTTTTTTTAAACCCCTCCGGCTCCGCTCCAGTCCTCTAACTCTGGTAGGACCGATTGTGTCACTTTG

27,880

KIF5A

KIF5A-202

KIF5A-202

CCTGTCTCTACTAAAAAATACAAAAAATTAGCCAGGCATGGTGGCGGGCGCCTGTAGTCCCAGCTACTCAGGAGGCTGAGGCAG
GGACAGAGATGATTTTTTTTATGTTTTTTAATCGGTCCGTACCACCGCCCGCGGACATCAGGGTCGATGAGTCCTCCGACTCCGTC

27,965

KIF5A

KIF5A-202

KIF5A-202

GAGAATGGCGTGAACCTGGGAGGCCGAGCTTGCAGTGAGCAGAGATGCGGCACTGCACTCCAGCCTGGGTGACAGAGGGAGACTC
CTCTTACCGCACTTGGACCCCTCCGCCTCGAACGTCACTCGTCTCTACGCCGTGACGTGAGGTCGGACCCACTGTCTCCCTCTGAG

28,050

KIF5A

KIF5A-202

KIF5A-202

TGTCTCAAAAAAAAAAAAAAAAAAAGCAGCAGCAACAGAGCAGTGCTTGCAGTAGGAGTTAGAGGTGGGGCATAGGCACAGAGTTCA
ACAGAGTTTTTTTTTTTTTTTTTCGTCGTCGTTGTCTCGTCACGAACGTCATCCTCAATCTCCACCCCGTATCCGTGTCTCAAGT

28,135

KIF5A

KIF5A-202

KIF5A-202

GAATGAAATATGCAAATCTGTGGATGTGAGAATAATCTGGGTGATCAAGGAGATCAAAAGAAAATCATGTTGCTTTATAAGATTT
CTTACTTTTATACGTTTAGACACCTACACTCTTATTAGACCCACTAGTTCCCTCTAGTTTTCTTTTAGTACAACGAAATATTCTAAA

28,220

KIF5A

KIF5A-202

KIF5A-202

ATTTGTAAGTGGGGGACTGTCAGAATTGGATTTTTTTTTTTTTTTTGGAGATGGAGTCTTGCTCTGTTGCCAGGCTGGAGTGCAGT
TAAACATTCACCCCTGACAGTCTTAACCTAAAAAAAAAAAAAAAAAATCTACCTCAGAACGAGACAACGGGTCCGACCTCACGTCA

28,305

KIF5A

KIF5A-202

KIF5A-202

GGTGTGATCTCAGCTCACTGCAACCTCCGCCTCCCAGGTTCAAGCAATTCTTCTGCTTCAGCCTCCCGAGTAGCTGGGACTACAG
CCACACTAGAGTCGAGTGACGTTGGAGGCGGAGGGTCCAAGTTCGTTAAGAAGACGAAGTCGGAGGGCTCATCGACCCCTGATGTC

28,390

KIF5A

KIF5A-202

KIF5A-202

GCACACACCACCTCTCCTGGCTAATTTTTTATGTTTTTATGTTAGTAGAGAGAGGGTTTCACCATATTGGCCAGGCTGGTCTCGAACTCC
CGTGTGTGGTGGAGAGGACCGATTAAAAAATACAAAAATCATCTCTCTCCCAAAGTGGTATAAACCGGTCCGACCAGAGCTTGAGG

28,475

KIF5A

KIF5A-202

KIF5A-202

TGACCTCGTAGTCCACCCACCTCGGCCTCCCAAAGTGTGGGATTACAGGCGTGAGCCACCGAGCCCGGCCAGAAATTGGATTTT
ACTGGAGCATCAGGTGGGTGGAGCCGGAGGGTTTACAAACCCTAATGTCCGCACTCGGTGGCTCGGGCCGGGTCTTAACCTAAAA

28,560

KIF5A

KIF5A-202

KIF5A-202

TTTTTTTTTTTTTGGAGATGGAGTCTCACTCTGTGCGCCAGGCTGGAGTCCAGTGGTGTGATCTCGGTTCACTGCAACCTCCGCC
AAAAAAAAAAAAAACTCTACCTCAGAGTGAGACAGCGGGTCCGACCTCAGGTCACCACACTAGAGCCAAGTGACGTTGGAGGCGG

28,645

KIF5A

KIF5A-202

KIF5A-202

TCCTGGGTTCAAGCAATTTCTGCCTCAGCCTCTTGAGTAGCTGGGATTACAGGCATGTGCCATGATGCTTGGCTAATTTTGTAT
AGGACCCAAGTTCGTTAAAGGACGGAGTCGGAGAACTCATCGACCCTAATGTCCGTACACGGTACTACGAACCGATTAAACATA

28,730

KIF5A

KIF5A-202

KIF5A-202

TTTTAGTAGAGACAGGGTTTCACCACCATGTTGGTCAGGCTGGTCTCGAACTCCTGACCTCAGGTGATCCACCCACCTTGACCTC
AAAATCATCTCTGTCCCAAAGTGGTGGTACAACCAGTCCGACCAGAGCTTGAGGACTGGAGTCCACTAGGTGGGTGGAACCTGGAG

28,815

KIF5A

KIF5A-202

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CCAAAGTGCTGAGATTACAAGGCATGAGCTACTGCGCCAGCCAGAATTGGATTTTTAAATGCAGGCGGAGGAATTTAATGTGAA
GGTTTCACGACTCTAATGTTCCGTA CTGATGACGCGGGTCCGTCTTAACCTAAAAATTTACGTCCGCCTCCTTAAATTACACTT

28,900

KIF5A

KIF5A-202

KIF5A-202

ATGCCGCTGATAGAGAGCTGCTAAAGGTCGTTTGGAAAATACCCATCCCATTTGAGTCCCTGCGTATGTGGGTGTGTATGGGTAG
TACGGCGACTATCTCTCGACGATTTCCAGCAAACCTTTTATGGGTAGGGTAAACTCAGGGACGCATACACCCACACATACCCATC

28,985

KIF5A

KIF5A-202

KIF5A-202

GTAGAAGGTGGGAGGGAACAGATAAAGCTTCCCAGCAGCCAAGAAGCATCTCTTCTCCTTTAATCACCTTAGCCAGTGGAGATC
CATCTTCCACCCTCCCTTGTCTATTTTCGAAGGGTTCGTGCGTTCTTCGTAGAGAAGGAGGAAATTAGTGGAAATCGGTACACCTCTAG

29,070

KIF5A

KIF5A-202

575
P V E I
ENSE00001108584

KIF5A-202

AGTGGGGCCATCGAGGAGGAGTTCACCTGTGGCCCGACTCTACATCAGCAAAATCAAATCAGAAGTCAAGTCTGTGGTCAAGCGGT
TCACCCCGGTAGCTCCTCCTCAAGTGACACCGGGCTGAGATGTAGTCGTTTTAGTTTGTCTTCAGTTTCAGACACCCAGTTTCGCCA

29,155

KIF5A

KIF5A-202

S G A I E E E F T V A R L Y I S K I S E V K S V V K R

580 585 590 595 600
ENSE00001108584

KIF5A-202

GCCGGCAGCTGGAGAACCTCCAGGTGGAGTGTACCCGCAAGATGGAAGTGACCGGGCGGGAGCTCTCATCCTGCCAGCTCCTCAT
CGGCCGTGACCTCTTGGAGGTCCACCTCACAGTGGCGTTCTACCTTCACTGGCCCGCCCTCGAGAGTAGGACGGTTCGAGGAGTA

29,240

KIF5A

KIF5A-202

C R Q L E N L Q V E C H R K M E V T G R E L S S C Q L L I

605 610 615 620 625 630
ENSE00001108584

KIF5A-202

CTCTCAGGTGAGTGCCTAAGTTTGGAGAACCTTCAAGTGCATGGGAGAAAAGAAGGCTACTCTGGGGTTATGGCTAAAACTCCTAA
GAGAGTCCACTCACGGATTCAAACCTCTTGGAAAGTCTACGGTACCCTCTTTCTTCCGATGAGACCCCAATACCGATTTTGGAGGATT

29,325

KIF5A

KIF5A-202

635
S Q
ENSE000...

KIF5A-202

CACCCACCTTTATGTCAAAGTTCTGGGGTCAAGTGAAATCAAGGACAGAAAAGCTGGGGTGGCAGGGGTGCAGATCAGGGCCAAA
GTGGGTGGAAATACAGTTTCAAGACCCAGTTCACTTTAGTTTCTGCTTTTTCGACCCACCGTCCCCACGTCTAGTCCCGGTTT

29,410

KIF5A

KIF5A-202

KIF5A-202

AAAGTAAAGGCTCAGGGCGGGTACTGCCCCCTGAGCCATGGGAGCTAAAGGAAGAGCCCCATAGGAATGGCCCCCAACCCTGCAC
TTTCATTTCCGAGTCCC GCCATGACGGGGGACTCGGTACCCTCGATTTCTTCTCGGGGTATCCTTACC GGGGGTTGGGACGTG

29,495

KIF5A

KIF5A-202

KIF5A-202

CCTCATGGGAAGTGTAGCAGGAGGGAGGGCTGGGAGGAGAGCTGGAGTTGGAGATCTGTGTGGCCTGGGTTTGTGTCTTTGCTC
GGAGTACCCTTACATCGTCTCCTCCCGACCTCCTCTCGACCTCAACCTCTAGACACACCCGGACCCAAACACAGGAAACGAG

29,580

KIF5A

KIF5A-202

KIF5A-202

CATCTTCTTCTCCTCTCACCAACTTTTCTCCCACCAGCATGAGGGCCAAGATCCGCTCGCTTACGGAATACATGCAGAGCGTGGAGCTA
GTAGAAGAAGGAGAGTGGTTGAAAGAGGGTGGTCTGTA CTCCGGTTCTAGGCGAGCGAATGCCTTATGTACGTCTCGCACCTCGAT

29,665

KIF5A

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H E A K I R S L T E Y M Q S V E L
ENSE00001108582

KIF5A-202

AAGAAGCGGCACCTGGAAGAGTCTTATGACTCCTTGAGCGATGAGCTGGCCAAGCTCCAGGCCAGGGTGAGGCCCTTCTTATACC
TTCTTCGCCGTGGACCTTCTCAGGATACTGAGGAACTCGCTACTCGACCGGTTTCGAGGTCCGGGTCCCACTCCGGAAGAATATGG

29,750

KIF5A

KIF5A-202

K K R H L E E S Y D S L S D E L A K L Q A Q
ENSE00001108582

KIF5A-202

TCCATCCCCTGTCCAGGGCAGAAAAGTCAGAAACATCAAATAAATCACCCCAATAATCACTCACTCAAAGCATTAGCTTGAAA
AGGTAGGGTGACAGGTCCCGTCTTTTCAGTCTTTGTAGTTTTATTTAGTGGGGTTATTAGTGAGTGAGTTTCGTAATCGAACTTT

29,835

KIF5A

KIF5A-202

KIF5A-202

TCATGGATGCCAACTCATATGTTAGCCAAGGTTTTGCATGTAGCTCATTTTACATTAACCATACACCCTTGTCTCTGTTCCCTGC
AGTACCTACGGTTGAGTATAACAATCGGTTCCAAAACGTACATCGAGTAAAATGTAATTGGTATGTGGGAACAAGAGACAAGGACG

29,920

KIF5A

KIF5A-202

KIF5A-202

TATATCAAATTGGACAGTCTTAACACAGAAGAACATCCCTGTGGGTCCATTTCCAGCCCTGCCTGGAGTTCTGGTCACAACGTGA
ATATAGTTTAACTGTACAGGATTGTGTCTTCTTGTAGGGACACCCAGGTAAGGGTCTGGGACGGACCTCAAGACCAGTGTTCGACT

30,005

KIF5A

KIF5A-202

KIF5A-202

AGTTCTTTCCGAAAGAGGTAGGTTTGTAGTGCAGCTGTCTTCCCTCTTTCCCTTAGAAACTGTGCATGAAGTGGCCCTGAAGGAC
TCAAGAAAGGCTTTCTCCATCCAAACTACAGTGCACAGAAGGGGAGAAAGGGAATCTTTGACACGTACTTCACCGGGACTTCCTG

30,090

KIF5A

KIF5A-202

E T V H E V A L K D
ENSE00001108593

KIF5A-202

AAGGAGCCTGACACTCAGGATGCAGATGAAGTGAAGGTGAGTAAGGAAGGTGTCAGGGACAATTGGGGCCTGGTGTGGTGAAAGC
TTCTCGGACTGTGAGTCTTACGTCTACTTCACTTCCACTCATTCCCTTCCACAGTCCCTGTTAACCCCGGACCACACCACTTTTCG

30,175

KIF5A

KIF5A-202

K E P D T Q D A D E V K
ENSE00001108593

KIF5A-202

TGTGCTGGCCCTCACAGAGCTTGTGCTGGGAGTCTGGCCTTTGAGCTTGGGGTGGGGTTGTTTGCAGAAGGCTCTGGAGCTGCA
ACACGACCGGGAGTGTCTCGAACCAACGACCCCTCAGACCGGAAACTCGAACCCCAACCAACAAACGTCTTCCGAGACCTCGACGT

30,260

KIF5A

KIF5A-202

700
K A L E L Q
ENSE00001108592

KIF5A-202

GATGGAGAGTCACCGGGAGGCCCATCACCGGCAGCTGGCCCGGCTCCGGGACGAGATCAACGAGAAGCAGAAGACCATTGATGAG
CTACCTCTCAGTGGCCCTCCGGGTAGTGGCCGTCGACCGGGCCGAGGCCCTGCTCTAGTTGCTCTTCGCTTCTTGGTAACCTACTC

30,345

KIF5A

KIF5A-202

705 710 715 720 725 730
M E S H R E A H H R Q L A R L R D E I N E K Q K T I D E

ENSE00001108592

KIF5A-202

CTCAAAGAGTAAGGGTTCCCAAGGGCGACTCCAGCCCTCCCGGGTCTGTACCTTGTGCTGATTGACTCACATGTCCCCTCTGG
GAGTTTCTCATTCCCAAGGGTTCCCGCTGAGGTGCGGGAGGGCCAGGACAGTGGAACGACATAACTGAGTGTACAGGGGAGACC

30,430

KIF5A

KIF5A-202

L K D
ENSE0000...

KIF5A-202

GTCTGATTCTTTAACATCCATGTGTCATTCCCTCAACAATGCCACAACCTTCGTAGCCCCACCTCAGGAGACACATGGAATAACGA
CAGACTAAGAAATTGTAGGTACACAGTAAGGGGAGTTGTTACGGTGTGGAAGCATCGGGGTGGAGTCTCTGTGTACCTTATTGCT

30,515

KIF5A

KIF5A-202

KIF5A-202

CTAGTCCCTATCCTTGAGGGTCCCAGGATTAGAGAGGTCAGGGTTCTGGCTCTGTCATGGAAACAGTGGCCTGAGTCTGCCTCT
GATCAGGGATAGGAACTCCCAGGGTCTAATCTCTCCAGTCCAAGGACCGAGACAGTACCTTTGTCACCGGACTCAGACGGAGA

30,600

KIF5A

KIF5A-202

KIF5A-202

GGTATCTGAAGGTGGACACATCAATTCTAACTGGACTCACTCGTTCAAAAAGGAAGAAGTTTGAAGAGCTGGCCTTCCCTTCCCC
CCATAGACTTCCACCTGTGTAGTTAAGATTGACCTGAGTGAGCAAGTTTTCTTCTTCAAACCTTCTCGACCGGAAGGGAAGGGG

30,685

KIF5A

KIF5A-202

KIF5A-202

CTCATTAACATCTTTCTCCCCATCTCCATTACCTTCTGATGCTCTGTAGCCTAAATCAGAAGCTCCAGTTAGAGCTAGAGAAGC
GAGTAATTGTAGAAAGAGGGGGTAGAGGTAATGGAAGACTACGAGACATCGGATTTAGTCTTCGAGGTCAATCTCGATCTCTTCG

30,770

KIF5A

KIF5A-202

735 740
L N Q K L Q L E L E K
ENSE00001108590

KIF5A-202

TTCAGGCTGACTACGAGAAGCTGAAGAGCGAAGAACACGAGAAGAGCACCAAGCTGCAGGAGCTGACGTGAGTGGCATGGATTTA
AAGTCCGACTGATGCTCTTCGACTTCTCGCTTCTTGTGCTCTTCTCGTGGTTTCGACGTCCTCGACTGCACTCACCGTACCTAAAT

30,855

KIF5A

KIF5A-202

745 750 755 760 765
L Q A D Y E K L K S E E H E K S T K L Q E L T

ENSE00001108590

KIF5A-202

CCTGTAAAACCTACAGCCTTGTAGGCTCAGAACTGTGAACTCAGACACGCTTGCAGAGGCAGGACACACATGCAGACATGATAGGG
GGACATTTTGTATGTCGGAACATCCGAGTCTTGACACTTGAGTCTGTGCGAACGTCTCCGTCCTGTGTGTACGTCTGTACTATCCC

30,940

KIF5A

KIF5A-202

KIF5A-202

TGACTCATGGGAAAAATATGATGGGGTAGGGACGGGACCAAAAGGACACTCTCAGCAAAGACTGCCGTTGAGTATTCACCAGTAT
ACTGAGTACCCTTTTTATACTACCCCATCCCTGCCCTGGTTTTCTGTGAGAGTCGTTTCTGACGGCAACTCATAAGTGGTCATA

31,025

KIF5A

KIF5A-202

KIF5A-202

GGAAGGAGGTTTACGTGTTCTATTCAGTGTAAAAACAGGTTACAAAACCATATGCATGGTATGATCCCATAAAAATGTATACATG
CCTTCTCCAAATGCACAAGATAAGTCACATTTTTGTCCAATGTTTTGGTATACGTACCATACTAGGGTATTTTTACATATGTAC

31,110

KIF5A

KIF5A-202

KIF5A-202

GATATGTAGGCATAGAAAAAGTCTAGAAAAGGTGGACACCAGAAGGTTAATGTTGGTTTTGATCTGTAAATAGTAGAATCATAGGC
CTATACATCCGTATCTTTTTTCAGATCTTTCACCTGTGGTCTTCCAATTACAACCAAACTAGACATTTATCATCTTAGTATCCG

31,195

KIF5A

KIF5A-202

KIF5A-202

TTTTTATAAAAACCTCACCTTATGTCTCTCTTTAAAATTCTTTTCTAATTTTTGCACAGTAAACATGAGTAACTTGTGTAATAAAT
AAAAATATTTTTGAGTGGAATACAGAGAGAAATTTAAGAAAAGATTAAAAACGTGTCATTTGTACTCATTGAACACATTATTTA

31,280

KIF5A

KIF5A-202

KIF5A-202

AATAATAGGCTGGGTGCGATGGCTTACACCTATAATCTCAGCACTTTGGGAGGCCAAAGCAGGTGGACTGCTTGAGCTCAGTAGT
TTATTATCCGACCCACGCTACCGAATGTGGATATTAGAGTCGTGAAACCTCCGGTTTTCGTCCACCTGACGAACTCGAGTCATCA

31,365

KIF5A

KIF5A-202

KIF5A-202

TCGAGACCAGCCTGGGCAACATGGCAAAACCCCTGTCTCTACTAAAAATACAAAAATTAGCTGGGCATGGTGGCATACTGTCTGTGG
AGCTCTGGTTCGGACCCGTTGTACCGTTTTGGGACAGAGATGATTTTTATGTTTTTAATCGACCCGTACCACCGTATGCAGACACC

31,450

KIF5A

KIF5A-202

KIF5A-202

TCCCAGATGCTTGGGAGGCTGAGGTGGGAAGGATCCCTTGAGCCCAGGAGGTTGAGGCTGCAGTGAGCCCTGATTGTGCCACTGT
AGGGTCTACGAACCCCTCCGACTCCACCCTTCCCTAGGGAACCTCGGGTCTCCAACTCCGACGTCCTCGGGACTAACACGGTGACA

31,535

KIF5A

KIF5A-202

KIF5A-202

ACTCTATCTAGCCTAGGTAACAGAATGAGACCCCTGTTTCACAAAATAACAATAATAGTAATACTTAAATGGAGATAAAAAGTAATA
TGAGATAGATCGGATCCATTGTCTTACTCTGGGACAAAGTGTTTTATTGTTATTATCATTATGAATTTACCTCTATTTTTATTAT

31,620

KIF5A

KIF5A-202

KIF5A-202

GAGGAAGAGGCAGGAGGAAGGAGAGTCCTGAGGGATCTTTCCATTTCCCTTATTTCTCTTGCTACAGATTTCTGTACGAGCGACA
CTCCTTCTCCGTCCTCCTTCTCCTCAGGACTCCCTAGAAAGGTAAAGGGAATAAAGAGAACGATGTCTAAAGACATGCTCGCTGT

31,705

KIF5A

KIF5A-202

770
F L Y E R H
ENSE00001108597

KIF5A-202

TGAGCAGTCCAAGCAGGACCTCAAGGGTCTGGAGGAGACAGTTGTGAGTGGTTCCCTTCTGTGCCAAATTCACAGGACTGGGGAG
ACTCGTCAGGTTTCGTCCTGGAGTTCCCAGACCTCCTCTGTCAACACTCACCAAGGGAAGACACGGTTTAAAGTGTCTGACCCCTC

31,790

KIF5A

KIF5A-202

775 780 785
E Q S K Q D L K G L E E T V
ENSE00001108597

KIF5A-202

TGGGGAGGCTTCATTTCTTCCCTAACCCCTATTCCCTCCTGCCCTTTTGCAGCCATTCTGTAGCGTAATCAAGACACATTTTTTCCCTA
ACCCCTCCGAAGTAAAGAAGGATTGGGATAAGGAGGACGGGAAAACGTCGGTAAGACATCGCATTAGTTCTGTGTAAAAAAGGAT

31,875

KIF5A

KIF5A-202

KIF5A-202

AAGGATAAGTGACTCACTTGATTATAGAGACTGGAGGTACCTATAATTCTGGAGGAATAGGACAGACCTGGTATCTGGCTATTCC
TTCCCTATTCACTGAGTGAACCTAATATCTCTGACCTCCATGGATATTAAGACCTCCTTATCCTGTCTGGACCATAGACCGATAAGG

31,960

KIF5A

KIF5A-202

KIF5A-202

CAATTTTTTCATCATTCTTTCCAGGCCCGGGAACCTCCAGACCTCCACAACCTTCGCAAGCTGTTTCGTTCAAGACGTCACGACTCG
GTTAAAAAAGTAGTAAGAAAAGGTCCGGGCCCTTGAGGTCTGGGAGGTGTTGGAAGCGTTCGACAAGCAAGTTCTGCAGTGCTGAGC

32,045

KIF5A

KIF5A-202

A R E L Q T L H N L R K L F V Q D V T T R

ENSE00001108600

KIF5A-202

AGTCAAGAAAGTGAGTGCTGTCTTGGGGTTTTGTGTCAGCCCCCACATCCTCCTCCTATCCTTAGGTTTCTCCTGCCCTGTTGCC
TCAGTTCTTTCACTCACGACAGGAACCCCAAACAGTCGGGGGTGTAGGAGGAGGATAGGAATCCAAAGAGGACGGGGACAACGG

32,130

KIF5A

KIF5A-202

810

V K K

ENSE0000110...

KIF5A-202

CCTATGGGGCTGGCTTGGCCTGGTCTTGGTGGGACCTGTTTGGCCTCAGGACAGCCACGTCTTTCCTTCTATCTGTTCTCAGAGT
GGATACCCCGACCGAACC GGACCAGAACCACCCTGGACAAACCGGAGTCCTGTGCGGTGCAGAAAGGAAGATAGACAAGAGTCTCA

32,215

KIF5A

KIF5A-202

S

KIF5A-202

GCAGAAATGGAGCCCCGAAGACAGTGGGGGGATTCACTCCCAAAGCAGAAGATTTCTTTCTTGAGAACAACCTGGAACAGCTTA
CGTCTTTACCTCGGGCTTCTGTCAACCCCTAAGTGAGGGTTTTCGTCTTCTAAAGGAAAGAACTCTTGTTGGACCTTGTGGAAT

32,300

KIF5A

KIF5A-202

815

820

825

830

835

840

A E M E P E D S G G I H S Q K Q K I S F L E N N L E Q L

ENSE00001108599

KIF5A-202

CAAAGTTTCACAAACAGGTAAGAGTCTGCTGAAGGAGTGAAGAGAATTTTTGAGGCCGGGTAGCTAGCATACCAAATCCTCAGAG
GTTTCCAAGTGTGTTGTCATTCTCAGACGACTTCTCACTTCTCTTAAAACTCCGGCCCATCGATCGTATGGTTTAGGAGTCTC

32,385

KIF5A

KIF5A-202

845

T K V H K Q

ENSE00001108599

KIF5A-202

GCCCTTGGATTACAGAAAATCTAGTTGCATGTTTTCTTACTGTTTCGCTTTTACTTTCCCTACTAATCCCTTCTTTATACCATA
CGGGGAACCTAAGTCTTTTAGATCAACGTACAAAAGGAATGACAAGCGAAAATGAAAGGGATGATTAGGGAAGAAAATATGGTAT

32,470

KIF5A

KIF5A-202

KIF5A-202

TTTGGTCCACTTGTACCTTGTCTTTGTTTTCATGCCTGTATTCCCTTCTCAAAGTTTCTAACCACCTCTGCTCAAAGTGGAAAT
AAACCAGGTGAACATGGAACAAGAAAACAAAGTACGGACATAAGGGAAGAGTTTCAAAGATTGGGTGGAGACGAGTTTCACTTAA

32,555

KIF5A

KIF5A-202

KIF5A-202

CCCCAGGCCTACCTTGGAGGGGAGAGGTTGAAACTAACAGAGGCATGGGCTGTAACCTATACAGGAGGGGAGACTGGTCAGACGTTAC
GGGGTCCGGATGGAACCTCCCTCTCCAACCTTTGATTGTCTCCGTACCCGACATTGATATGTCTCCCTCTGACCAGTCTGCAATG

32,640

KIF5A

KIF5A-202

KIF5A-202

CCAGAGATGGAAGGCAGGGAGATGAGAAGAAGCAAGGGAGTTGGGCTTCTTTTCGTGGAGAGAACTCCATCTGTCTAGGTCTGTGG
GGTCTCTACCTTCCGTCCCTCTACTCTTCTTCGTTCCCTCAACCCGAAGAAAGCACCTCTCTTGAGGGTAGACAGATCCAGACACC

32,725

KIF5A

KIF5A-202

KIF5A-202

CAGGCATGCAGGGACATTAATGATGTCCCTGGCTAGGCACAGTGGTGCATGCCTGTAGTCCCAGCGCTTCAGGAAGCCGAGGCG
GTCCGTACGTCCCTGTAATTTACTACAGGGACCGATCCGTGTCACCACGTACGGACATCAGGGTCGCGAAGTCCTTCGGCTCCGC

32,810

KIF5A

KIF5A-202

KIF5A-202

GGCGGATCACTTGAGCACAGGAGTTCAAGACCAGCCTAAGCAACATGGCGAAACCCCATCTCTACAAAAAATACAAAAATTAGCC
CCGCCTAGTGAACCTCGTGTCTCAAGTTCTGGTCGGATTGTTGTACCGCTTTGGGGTAGAGATGTTTTTTATGTTTTTAATCGG

32,895

KIF5A

KIF5A-202

KIF5A-202

GGATGTGGTGGCACACACCCATAGTCCAGCTACTTGGGAGGCTGAGGTAGGGCAATTGCTTGAGCGCAGGAAGTAGAGGCTGCA
CCTACACCACCGTGTGTGGGTATCAGGGTCGATGAACCCTCCGACTCCATCCCCTTAACGAACTCGCGTCTTTCATCTCCGACGT

32,980

KIF5A

KIF5A-202

KIF5A-202

GTGAGCTGTGATCATGCCACTGCACTCCAGCCTAGGTGACAGAGTGAGACCCTGTTTCAATTAATAAAAAAATGATGTCCCTAAGA
CACTCGACACTAGTACGGTGACGTGAGGTCGGATCCACTGTCTCACTCTGGGACAAAAGTTAATTTTTTTTTACTACAGGGATTCT

33,065

KIF5A

KIF5A-202

KIF5A-202

TGGCCCAACCAGCCCCTGGTTGGGGCCCCAGTCAAAACTCCTGTGTATTAAGTTGCTGCCTCTCTGTCCCCCTCCTTGCTGTTGC
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33,150

KIF5A

KIF5A-202

KIF5A-202

GGTTCTTTAGGTGGATGACTGGGTTTCAAAGGTATGGGCTGGGGATGCAGAAGGGCAGTCCAAAGGAGTCAGGACAGGAAATGTT
CCAAGAAATCCACCTACTGACCCAAAGTTTCCATACCCGACCCCTACGTCTTCCCCTCAGGTTTCTCAGTCTCTGTCTTTACAA

33,235

KIF5A

KIF5A-202

KIF5A-202

TGGTGCATGCTGGGTAGGGGCACTCTCACTAGCACTAAATATCTGAGCCTTGAAGACAGGCTCGGCAGGCTGTCAACTGGTCCTT
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33,320

KIF5A

KIF5A-202

KIF5A-202

TTAACTAATTCATAAAATAAACCCCTAACCTATACTTCATTCCCTTTCTTTCAAATCTACCTTAAGATTCCATTTAAACTTACATT
AATTGATTAAGTATTTTATTTGGGATTGGATATGAAGTAAGGAAAGGAAAGTTTAGATGGAATTCTAAGGTAAATTTGAATGTAA

33,405

KIF5A

KIF5A-202

KIF5A-202

CTCACTAGCCTAGCACTTAAACTTCTTTTCTCCAGTATAATGCCAGCTTATATAGTAAATATTCAGTACTTTTTTTTTTCTT
GAGTGATCGGATCGTGAATTTGAAGAAAAGGAGGGTCATATTACGGGTCGAATATATCATTATAAGTCATGAAAAAAAAAAGAA

33,490

KIF5A

KIF5A-202

KIF5A-202

AATGAATCCTAAACCTGTGCCAGTGATAATGTACAGAGTTTATTTATCTTATTTAGGCCTGCAGAGGGCTTTGCTACGATTTTA
TTACTTAGGATTTGGACACGGGTCACTATTACATGTCTCAAATAAATAGAATAAATCCGGACGTCTCCCAGAACGATGCTAAAAT

33,575

KIF5A

KIF5A-202

KIF5A-202

TTTCCTTTATTATGAACTGAGTAACAAAATTATAGAAAAGTTGAAAGGCAGATAGGAAACATTTGAAATCAATTCTGCCATTTCG
AAAGGAAATAATACTTTGACTCATTGTTTTAATATCTTTCAACTTCCGTCTATCCTTTGTAACCTTTAGTTAAGACGGTAAGC

33,660

KIF5A

KIF5A-202

KIF5A-202

ATTTTCATTCCCGCATTCACTTTCCCTCTCTGTCCAAATCCATATTATGTTGCTTAGAACACACACACACATGTGTGTGCTACTC
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33,745

KIF5A

KIF5A-202

KIF5A-202

TGGGCCTCTCTGCCTATGGGAAAAGCCCTGCTCTATGGAGCAAGCCCCAGAAAAATTTCCATGAAAAAACACAACCACACTGTT
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33,830

KIF5A

KIF5A-202

KIF5A-202

TCCTTTATCGTCACTGAAGCCTCTGCCTCTGTTCAAAGTCCCAAAAAACAAAAATGACTCACCTATAGGATAAATAGAGGACTC
AGGAAATAGCAGTGACTTCGGAGACGGAGACAAGTTTCAGGGTTTTTTTTGTTTTTACTGAGTGGATATCCTATTTATCTCCTGAG

33,915

KIF5A

KIF5A-202

KIF5A-202

ACTACAATTTCTACCTCAGCAGACACAAGAGTAAAAAGGAAAAGGAGATAAAAACTTCTCAGTTAAGAGAATCTTAACAGCCAG
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34,000

KIF5A

KIF5A-202

KIF5A-202

GACTATAGCCCTATATCAATTAAGCTAAAGTATTGTCACAGCAAAACATTGCTTATACTCCATAAATTGTCCAAATGGAAACTGC
CTGATATCGGGATATAGTTAATTCGATTTCAATACAGTGTCTTTTTGTAACGAATATGAGGTATTTAACAGGTTTACCTTTGACG

34,085

KIF5A

KIF5A-202

KIF5A-202

ATGGAAGGGTTTCTAGCTTGTCCCTTGAGCCCCAGTGTTCCTCCGCTATGCTGATTTACCCGCTGTCTTCCAAGGCCCTGCTCC
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34,170

KIF5A

KIF5A-202

KIF5A-202

TTTTGCAACCTATAGTGCCCCAGTCATTGTGTGGAACCTGTAAAAAGATCAGGAAGTCTTTTTCGGGCTGCAGGGTGGTTGCTCC
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34,255

KIF5A

KIF5A-202

KIF5A-202

CATGCTCTAGCTTAATTTCACTGGGGGAGGGATAACCCAGGAAGTCTTGAATGTGAAGGTAATGAGTGCAAATGTTTGTGAGAC
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34,340

KIF5A

KIF5A-202

KIF5A-202

CTCAAACATTTTCTTTCTTCTCCTACGGGGCGGGCTCTGCCTGTCTATATGTGTATGTCAGGGGCTCCTGAATTCAGCTTCTGCT
GAGTTTGTAAAAGAAAGGAAGGATGCCCGCCCGAGACGGACAGATATACACATACAGTCCCGAGGACTTAAGGTCGAAGACGA

34,425

KIF5A

KIF5A-202

KIF5A-202

CCTGCTCTGCACTGCACCTGCCATGCACAGATTCTCCTCAATGCCACAGCCACCAAAGTCTACTGTGCCCTTGCTGCCCCACCC
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34,510

KIF5A

KIF5A-202

KIF5A-202

TTTGCATGCCACAAAGCCCTCTCTGGGGAAGCGGGTCCCTCATCCCCATGGCCGCCCTGGGGCTATTGATCTGGCACATGCTGG
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34,595

KIF5A

KIF5A-202

KIF5A-202

GAGATGTGGGGGAAACCAGATGGAGACAGGACAAGGCGCTCTCACAAGAGTTCTGGGCTGCAGTGGAGATGGCAGGTTTTACTGC
CTCTACACCCCTTTGGTCTACCTCTGTCTTCCGCGAGAGTGTCTCAAGACCCGACGTCACCTCTACCGTCCAAAATGACG

34,680

KIF5A

KIF5A-202

KIF5A-202

CTAGAAAATTATATAACTTTTAAATGCCTGACCACCCACCCCTTCGCTCTGGGAGAAGGAATGAGCTGGACAGAACAGTCCATTAC
GATCTTTTAAATATATTGAAAATTTACGGACTGGTGGGTGGGAAGCGAGACCCCTCTTCCTTACTCGACCTGTCTTGTGAGGTAATG

34,765

KIF5A

KIF5A-202

KIF5A-202

ATAAAGGCAATGAGGCCTTTTGAGGAAATGACATGGTCTCCATCTTCTCTGACTCCTGATTTTTCTTTATTCTCTCTCCTCACCC
TATTTCCGTTACTCCGGAAAACCTCTTTACTGTACCAGAGGTAGAAGAGACTGAGGACTAAAAAGAAATAAGAGAGAGGAGTGGG

34,850

KIF5A

KIF5A-202

KIF5A-202

CTGTCCCCTACGCTCCTCTGGGTGACCGTCTTGGGTCACCTTGCCTTCCTTTCCACTTCTTCCTTTGGCTTGCCCCATAGCTGGT
GACAGGGGATGCGAGGAGACCCACTGGCAGAACCAGTGAACGGAAGGAAAGGTGAAGAAGGGAAACCGAACGGGGTATCGACCA

34,935

KIF5A

KIF5A-202

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ENSE...

KIF5A-202

ACGTGACAATGCAGATCTGCGTTGTGAGCTTCTCTAAATTGGAAAAACGACTTAGGGCTACGGCTGAGAGAGTTAAGGCCCTGGAG
TGCAGTGTACGTCTAGACGCAACTCGAAGGATTTAACCTTTTTGCTGAATCCCGATGCCGACTCTCTCAATTCCGGGACCTC

35,020

KIF5A

KIF5A-202

850 855 860 865 870 875
R D N A D L R C E L P K L E K R L R A T A E R V K A L E

ENSE00001108598

KIF5A-202

GGTGCAGTGAAGGAGGCCAAGGAGGGCGCCATGAAGGACAAGCGCCGGTACCAGCAGGAGGTGGACCGCATCAAGGAGGCCGTTCC
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35,105

KIF5A

KIF5A-202

880 885 890 895 900
G A L K E A K E G A M K D K R R Y Q Q E V D R I K E A V

ENSE00001108598

KIF5A-202

GCTACAAGAGCTCGGGCAAACGGGGCCATTCTGCCAGATTGGTGAGTAGGTGTTAGCAGGCAAGGTGGGAGTATCTCCTGAAGC
CGATGTTCTCGAGCCCGTTTGCCTCCGGTAAGACGGGTCTAACCACCTCATCCACAATCGTCCGTTCCACCCTCATAGAGGACTTCG

35,190

KIF5A

KIF5A-202

905 910 915
R Y K S S G K R G H S A Q I

ENSE00001108598

KIF5A-202

AAATTTAGCAAATTGCTAATTGCCAAGCAACTAGATTATTGCTTCTTACCTACCCCTAGCCTCATCCCCTTCCCCCAAAAAGT
TTTAAATCGTTTAAACGATTAACGGTTTCGTTGATCTAATAACGAAGAATGGATGGGGATCGGAGTAGGGTGAAGGGGGTTTTTCA

35,275

KIF5A

KIF5A-202

KIF5A-202

AAAAAAGTGATTATGTTACAAGCAACTCAGTTCAACCCAGCTAAATGACCTCAGGGACCAGGGCAAATGCAGGGTCATAGCCTC
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35,360

KIF5A

KIF5A-202

KIF5A-202

CTCATGGTTGTTTTCTTTCTTTATTGCAAGCAAACCCGTCGGCCCTGGCCACTACCCAGCATCCTCACCCACCAACCCCTATGGC
GAGTACCAACAAAAGAAAGAAATAACGTCGGTTTGGGCAGGCCGGACCGGTGATGGGTCTGAGGAGTGGGTGGTTGGGGATACCG

35,445

KIF5A

KIF5A-202

920 925 930 935
A K P V R P G H Y P A S S P T N P Y G

ENSE00001108603

KIF5A-202

ACCCGGAGCCCTGAGTGCATCAGTTACACCAACAGCCTCTTCCAGAACTACCAGAATCTCTACCTGCAGGCCACACCCAGCTCCA
TGGGCCTCGGGACTCACGTAGTCAATGTGGTTGTTCGGAGAAGGTCTTGATGGTCTTAGAGATGGACGTCCGGTGTGGGTTCGAGGT

35,530

KIF5A

KIF5A-202

940 945 950 955 960 965
T R S P E C I S Y T N S L F Q N Y Q N L Y L Q A T P S S

ENSE00001108603

KIF5A-202

CCTCAGATATGTTAGTGGAGTGACCACACGTGTGGGTTGGAGTCCCACCCAAAGCTCCCTGGACCCTAGAAGGCATAGGGTGGGGGC
GGAGTCTATACATCACTCACTGGTGTGCACACCCCAACCTCAGGGTGGGTTTCGAGGGACCTGGGATCTTCCGTATCCCACCCCCG

35,615

KIF5A

KIF5A-202

970
T S D M Y
ENSE00001108603

KIF5A-202

AGTTATTGGTTGTGGCTTAATTATTTTCTAAACCCTTTCTCAACTTCATGCCTATGATTAGAAGGTAGGTGTCTGCCCTCCAG
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35,700

KIF5A

KIF5A-202

KIF5A-202

CCTGTGGCCATGTTTGTTCCTCTGCTCTCTGGGGATGGGGAGGGCTGAGCAGCTCTATCACTGAGGATGAGTGTGGATTAGTG
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35,785

KIF5A

KIF5A-202

KIF5A-202

GTCTCAGACTAGTGGAGGGTGGGTGTCAGAGGCTGCCTCTTTCTCTGCTCCATCCAGCTTTGCAAACCTCCTGTACCAGCAGTG
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35,870

KIF5A

KIF5A-202

975
F A N S C T S S
ENSE00001108595

KIF5A-202

GAGCCACATCTTCTGGCGGCCCTTGGCTTCTACCAGAAGGCCAACATGGACAATGGTGAGTGAAAAAGATGGGTAATCCCACC
CTCGGTGTAGAACCGCCGGGAACCGAAGGATGGTCTTCCGGTTGTACCTGTTACCACTCACTTTTTCTACCCATTAGGGTGG

35,955

KIF5A

KIF5A-202

980 985 990 995
G A T S S G G P L A S Y Q K A N M D N
ENSE00001108595

KIF5A-202

TTTGGGGTCCTCAGGGCAAGTTGAGAGGCATAAAAGTAAGTGACCTTAGTGACAAAAAACACTGACTGAACCTTTCTGGTGTGC
AAACCCAGGAGTCCCGTTCAACTCTCCGTATTTTCATTCACTGGAATCACATGTTTTTTGTGACTGACTTGGAAAGACCACACG

36,040

KIF5A

KIF5A-202

KIF5A-202

CAAGGCTTCAAATAAAAAAAAAAATACATATAGCCAGGTGTGGTGGCATGCACCTGTAGTCCTAGCTACTTGGGAGGTTGAGATA
GTTCCGAAGTTTATTTTTTTTTTATGTATATCGGTCCACACCACCGTACGTGGACATCAGGATCGATGAACCTCCAACCTCTAT

36,125

KIF5A

KIF5A-202

KIF5A-202

GGAGGATTGCTTGAGCTCAGGAGCTTAAGGCTGAAGTGCACCTGTGAATACACCTGTGAATAGCCACTGCACTCAGCCTGGGCAGC
CCTCCTAACGAACTCGAGTCTCGAATTCCGACTTCACGTGACACTTATGTGGACACTTATCGGGTACGTGAGTCGGACCCGTCG

36,210

KIF5A

KIF5A-202

KIF5A-202

ATAGTAAAGCCCCATCTCTAAAATAATAATAATAACACATATGAAGAAAAAAGTGACCCTGTACCTACAGCCTGAGCACTGCCCA
TATCATTTCGGGGTAGAGATTTTATTATTATTATTGTGTATACTTCTTTTTTCACTGGGACATGGATGTCGGACTCGTGACGGGT

36,295

KIF5A

KIF5A-202

KIF5A-202

GCCCTTTAGGTCTCAGGCTGCCTGGGAGTGGATTCTCTATTACCACGCCAATCCCAGCCCTTGCCCTTCCAGTTCCTTTTTCT
CGGGAAATCCAGAGTCCGACGGACCCTCACCTAAGGAGGATAATGGTGCGGTTAGGGTCGGGAACGGAAGGTCAAGGGAAAAGGA

36,380

KIF5A

KIF5A-202

KIF5A-202

CTCCTTGGTGAGGGGCTGCAGAACTTTTTCTCGAACAAAATAATGATGTAGCTTGGGATAACTAAGGAGAAAAGTGTACAGCTT
GAGGAACCACTCCCCGACGTCTTTGAAAAAGAGCTTGTTTTATTACTACATCGAACCCCTATTGATTCTCTTTCACAGTGTGCGAA

36,465

KIF5A

KIF5A-202

KIF5A-202

ATCTTTTTCTCTAAGGGATTAAGATGGGAGAGGGTTTGCGCAAACTGTTTCTAACACCCAATCTCCTTTTTTCTTCTTCTAATCC
TAGAAAAAGAGATTCCCTAATTCTACCCTCTCCCAAACGCGTTTGACAAAGATTGTGGGTTAGAGGAAAAAAGAAGAAGATTAGG

36,550

KIF5A

KIF5A-202

KIF5A-202

TGTGTTCTCAATGATGATCTCTTCAGGAAATGCCACAGATATCAATGACAATAGGTACAACAGTCCCCACTACCCCTGGGTTCTC
ACACAAGAGTTACTACTAGAGAAGTCCTTTACGGTGTCTATAGTTACTGTTATCCATGTTGTCAGGGGTGATGGGGACCCAAGAG

36,635

KIF5A

KIF5A-202

G N A T D I N D N R
ENSE00001108591

KIF5A-202

TGGGTGGGACCAGAAGAAATGATTAAATTTCCCTTGTGCCCACTTGAGAGTTCTGGAGCCTTTGGGGAAGGGGGAGGGAGTGA
ACCCACCCTGGTCTTCTTTACTAATTTAAAGGGAACACGGGGTGAACCTCCAAGGACCTCGGAAACCCCTTCCCCCTCCCTCACT

36,720

KIF5A

KIF5A-202

KIF5A-202

GACTCATTCTTTTCATCACTGTGTTGTCCAGGAGATCCAGTCATTCCCCTGCCTCAGTGCAGAATATCTCCCCTCCTCCAATCCC
CTGAGTAAGAAAAGTAGTGACACAACAGGTCCTCTAGGTCAGTAAGGGGACGGAGTCACGTCTTATAGAGGGGAGGAGGTTAGGG

36,805

KIF5A

KIF5A-202

KIF5A-202

ATCTGTGGCTTCTCCCTATTCCAGTGATAAGGTCTGGACGAAAACAACGTGGGCATCTGACGACTGGGTTTCTCTCCTACCTTTG
TAGACACCGAAGAGGGGATAAGGTCACACTATTCCAGACCTGCTTTTGTGACCCGTAGACTGCTGACCCAAAGAGAGGATGGAAAC

36,890

KIF5A

KIF5A-202

KIF5A-202

GAAGCCTTGTGACATTGGACAAGTCATTTACATCCCTCTGGCCTTGAGTTTTCCCTGTATTCTGTAAAACACAAATAGTCCCTGC
CTTCGGAACACTGTAACCTGTTTCAGTAAATGTAGGGAGACCGGAACTCAAAGGGACATAAAGGACATTTTGTGTTTATCAGGGACG

36,975

KIF5A

KIF5A-202

KIF5A-202

CGTTTGTGATCTCACAGGGACACTCTCAGAGCAGAGTAACCATGATGACAGGAATACTTTAATTTCTATGGAGCTGATCATGGTG
GCAAACACTAGAGTGTCCCTGTGAGAGTCTCGTCTCATTGGTACTACTGTCTTATGAAATTAAGATACCTCGACTAGTACCAC

37,060

KIF5A

KIF5A-202

KIF5A-202

GGTCTCTTCCCTCCAGGAGTGACCTGCCGTGTGGCTATGAGGCTGAGGACCAGGCCAAGCTTTTTCCCTCTCCACCAAGAGACAGCA
CCAGAGAAGGAGGTCCTCACTGGACGGCACACCGATACTCCGACTCCTGGTCCGGTTCGAAAAGGGAGAGGTTGTTCTCTGTCTGT

37,145

KIF5A

KIF5A-202

KIF5A-202

S D L P C G Y E A E D Q A K L F P L H Q E T A

ENSE00001140534

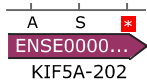
KIF5A-202

GCCAGCTAATCTCCACACCCACGGCTGCATACCTGCACTTTCAGGTAGCGTCAGGCTGCTTCTCGGACCAGCCTCAGGTTGCT
CGGTTCGATTAGAGGGTGTGGGTGCCGACGTATGGACGTGAAAGTCCATCGCAGTCCGACGAAGGAGCCTGGTCGGAGTCCAACGA

37,230

KIF5A

KIF5A-202



TCCCTTCTTGCTGACAGCCTCTTTGGTTTTCTGCTGCTGCTTCTTTTTTTTTTATCACCTCAAACCTTTAATTATGTAGTTAC
AGGGAAGAACGACTGTCGGAGAAAACAAAAGGACGACGACGAAGAAAAAAAAAATAGTGGAGTTTGAATTAATACATCAATG

37,315

KIF5A

KIF5A-202

CCCTCAACTCCTGCTTTCCCCTGTTGGGGGCTACACCTGTGCTGCCCATGTAATCTGGACGTTGACCTCCCGTGCCCCCTTTTG
GGGAGTTGAGGACGAAAAGGGGACAACCCCGATGTGGACACGACGGGGTACATTAGACCTGCAACTGGAGGGCACGGGGGAAAAC

37,400

KIF5A

KIF5A-202

CTTTCCGTTAGGCTACAGTGGTAACCACAGTACTGTCTTTTTGCCACTAGGGGGTCACTGTACACATGTCCAAAGAAGTGAGCTTGG
GAAAGGCAATCCGATGTCACCATTGGTGTGATGACAGAAAAACGGTGATCCCCAGTGACAGTGTACAGGTTTCTTCACTCGAACC

37,485

KIF5A

KIF5A-202

CCGCTGTAGATTAGAACCACAGGGGTGGTAGACTGCAGATCTATCAGGAGACCCTAGGGGGCCATCTCAACCCACCTCTTCCTC
GGCGACATCTAATCTTGGTGTCCCCACCATCTGACGTCTAGATAGTCTCTGGGATCCCCCGGTAGAGTTGGGGTGGAGAAGGAG

37,570

KIF5A

KIF5A-202

CACCTGAAATAATTTTGGATGGATAGGTGTTTTTGGAACTAAGACATCTCCAGTTAAGGCGATGTTTGCTTACGCCTGCACCT
GTGGGACTTTATTAACCTACCTATCCACAAAAACCTTGATTCTGTAGAGGTCAATTCCGCTACAAACGAAGTGC GGACGTGGA

37,655

KIF5A

KIF5A-202

GTGTCCCATCCTCTTCCCATCTGTATATGCCACCAGTAAGCTTTAGGAAACGCCCCACGAAATCAGTCAGCGCTCCCCTCCCATC
CACAGGGTAGGAGAAGGGTAGACATATACGGTGGTCATTCGAAATCCTTTGCGGGGTGCTTTAGTCAGTCGCGAGGGGAGGGTAG

37,740

KIF5A

KIF5A-202

TTGCTCAGTGGAGGTGGCAAAGCCCCTCTTTTTCTCCTCTGTCCCCAGGTGCTCTCCTCTAGCAGCACAGGAACCTTCTTTGTT
AACGAGTCACCTCCACCGTTTTCGGGGAGAAAAAGGAGGAGACAGGGGTCCACGAGAGGAGATCGTCTGTCTTGGAAAGAAACAA

37,825

KIF5A

KIF5A-202

CTTGTGTGCTCACTGGGTTTCTCACCAAGGTTGCTTTAGGGCCCAGAAGTGGCACAGAGAACATGGCCAGTCTCTTACTGGGCTGC
GAACACACAGTGACCCAAAGAGTGGTTCCAACGAAATCCCGGGTCTTACCCTGTCTCTTGTACCGGTGACAGAGAATGACCCGACG

37,910

KIF5A

KIF5A-202

ATCTAAGCTGAGCCCTCTCCAGGGGTTTTCCAGAAATAGTAAACCAGGCACACACAGGCAGAAAAGTCTGAGAAGCAGAGAAGTAG
TAGATTCGACTCGGGAGAGGTCCCCAAAGGGTCTTATCATTGGTCCGTGTGTGTCGGTCTTTTTCAGACTCTTCGTCTCTTCATC

37,995

KIF5A

KIF5A-202

GAATGCAGAAGAGGAGTTGGGGGAGACCTAGGGGTGGAGGTGCAAGCCTGGGTACGGGGGGCGGTGGTAGGGGGGTCTGCTTGT
CTTACGTCTTCTCCTCAACCCCTCTGGATCCCCACCTCCACGTTTCGGACCCAGTGCCCCCGCCACCATCCCCCAGACGAACAA

38,080

KIF5A

KIF5A-202

GGTATTAAGGAACAGGACAGTAAACCAAAGTGTGTGACAGATGCCACCTGTTCTGTTCTGTGACTGAGCTACAAGCTGGGCCCT
CCATAATTTCTTGTCTCTGTCATTTGGTTTTACACACAGTCTACGGTGGACAAGGACAAGACTGACTCGATGTTTCGACCCGGGA

38,165

KIF5A

KIF5A-202

CACACCTCTTTCTCTTTCTTTCCAGTTTTCTAAGAGGGACTGAGGCCTCTTCTCAGCATGCTGCAAACCTGTGGTCTCTGATAC
GTGTGGGAGAAAAGAGAAAAGGGTCAAAGATTCTCCCTGACTCCGGAGAAGAGTCGTACGACGTTTGGACACCAGAGACTATG

38,250

KIF5A

KIF5A-202

TAACTCCCTCCCAACCCCTGTTGTTGGACTGTACTATGTTTGGATGTCTTCTTACTTACTCTGTATCTCTTTGTA

38,335

ATTGAGGGAGGGGTTGGGGACAACAACCTGACATGATACAACTACAGAAGAGAATGAATGAGACATAGAGAAACATGAGACATA

KIF5A

KIF5A-202

CTATATATCAAAAGCTGCTGCTATGTCTCTCTTCTGTCTTATTCTCAAGTATCTACTGATGATTTAGCAATTTCAAAGCATAGT

38,420

GATATATAGTTTTGACGACGATACAGAGAGAAGACAGAATAAGAGTTCATAGATGACTACATAAATCGTTAAAGTTTCGTATCA

KIF5A

KIF5A-202

CTACCTTCCTTATTTGGGGCAATAGGGAGGAGGGTGAATGTTTCTTCTTCTCATCTACTCGTCTCACACTGAGTGGTGTAGTC

38,505

GATGGAAGGAATAAACCCCGTTATCCCTCCTCCCACTTACAAAGAAGAAAGAGTAGATGAGCAGAGTGTGACTCACCACAATCAG

KIF5A

KIF5A-202

ACTGAGTAGAGGTCACAGAGATGACAAAAGGAAAAATGGGAGCTAGAGGGTTGTGACCCTTCATACACACACGCACGCACGCACA

38,590

TGACTCATCTCCAGTGTCTCTACTGTTTTCTTTTTACCCCTCGATCTCCCAACTGGGAAGTATGTGTGTGCGTGCGTGCGTGT

KIF5A

KIF5A-202

CAACATGCACACACGCATGCACACACACAAAGCCTTAAGCAGAAGAATGTCTTAGCATCATGAGACAGAGAAATAGACTCTTCC

38,675

GTTTGTACGTGTGTGCGTACGTGTGTGTGTTTCGGAATTCGTCTTCTTACAGAATCGTAGTACTCTGTCTCTTTATCTGAGAAGG

KIF5A

KIF5A-202

TCCCTCCTCTTTTACATATAGCACAGGGGAAGGTAAAATGGAAGGGCTGCTAATTGAGACATATAATTTTCTTACACACCCCTC

38,760

AGGGAGGAGAAAAGTGATATCGTGTCCCTTCCATTTTACCTTCCCGACGATTAACTCTGTATATTAAGAAGTATGTGGGGAG

KIF5A

KIF5A-202

ACCTTAATCAAAGGATTCAGGTGTTACTTCTGCCCTACAAAGTCTGCCTTTTGCCTCCCTCTTCTGTTTTCCCTGGACTGAGA

38,845

TGGAATTAGTTTCTAAGTCCACAATGAAGACGGGATGTTTCAGACGGAAAACGGAGGGAGAAGGACAAAAGGGGACCTGACTCT

KIF5A

KIF5A-202

AATGGGTTGCTCAAGGGACCATTTCCCTTTTTCTTCAAGCTCCTTTTGTATTTCCCTGCCCCAGAGCTCATGACCAGAACCAG

38,930

TTACCCAACGAGTTCCCTGGTAAAGGGAAAAAGAAGTTTCGAGGAAAACATAAGGGACGGGGTCTCGAGTACTGGTCTTGGGTCT

KIF5A

KIF5A-202

GCTGATTTAAAATATTTGAAAAATGGAGGAGGCAGACTGCTCCCAGCAGCCTGTCAATGGCTGCTCATCTGTCCATGGAGATGG

39,015

CGACTAAATTTTATAAACTTTTTACCTCCTCCGTCTGACGAGGGTCTCGGACAGTTACCGACGAGTAGACAGGTACCTCTACC

KIF5A

KIF5A-202

TTACAGGCAGGTGTAGTCAAAATGATTGATTCTTTGGGTTTTGGGGTGAATAGGCTGGGAAATTTCTGAGCCTTTTTTTTTTGTGTC

39,100

AATGTCCGTCCACATCAGTTTTACTAACTAAGGAACCCAAACCCCACTTATCCGACCCTTTAAAGACTCGGAAAAAAAAAACAG

KIF5A

KIF5A-202

ACAGTGCCCTCAAGTTGAAGTGATGAGCTGGATTTCTTTCTTGTTCATACTGGGCGGCATGCTCCTCCCATCTCCACCCCTTGG
TGTACACGGGAGTTCAACTTCACTACTCGACCTAAAGAAAGAACAAGGTATGACCCGCCGTACGAGGAGGGTAGAGGTGGGGAACC

39,185

KIF5A

KIF5A-202

TTTGGGGGCTTCCAGCTCATTGGCAAAATCTCTCTAGTTGCCTTCTTTTCAAGCTGGAGCCTGACTTTTTCCCAATGTACATTTT
AAACCCCGAAGGTTCGAGTAACCGTTTTAGAGAGATCAACGGAAGGAAAAGTTTCGACCTCGGACTGAAAAGGGGTTACATGTAAAA

39,270

KIF5A

KIF5A-202

TTTTTTCTCCACAAAGAGTTCTTCTCTAATGTCCCCATCTGGTATTAAGTGCACCTTTAAAGAAAAGGGGCAGGGTGGATTTTCAA
AAAAAAGAGGTGTTTCTCAAGGAAGAGATTACAGGGGTAGACCATAATTCACGTGAAATTTCTTTCCCGTCCACCTAAAAGTT

39,355

KIF5A

KIF5A-202

GAGGTGGGAAGCTCTAAGGCTTGACCCTGAGGGGTCTTCTCCAGCCATTCTCAGCCCATATGCAGCACCTCCATACTGAAGAG
CTCCACCTTCGAGATTCCGAAGTGGGACTCCCCAGAAGAGGGTTCGGTAAGAGTCGGGTATACGTCGTGGGAGGTATGACTTCTC

39,440

KIF5A

KIF5A-202

GACTGTTGTTTTAGTTTTCAGACGGTCTTTTCTTCCACATGGTGCTAAGGTGGTTTTCTAGGTAAGTGCAGGGATGGAGGTCACT
CTGACAACAAAATCAAAGTCTGCCAGGAAAGGAAGGTGTACCACGATTCCACAAAAGATCCATTGACGTCCCTACCTCCAGTGA

39,525

KIF5A

KIF5A-202

AGCCATTCCAAACCAGGAGAGAAAAGTCTGGTGTCTGATATCCAGTCTTTTTCTAGGAGGAAGACCAAGATTCTCCAGCGGCAGGG
TCGGTAAGGTTTGGTCTCTCTTTTTCAGACCACAGGACTATAGGTTCAGAAAAGATCCTCCTTCTGGTTCTAAGAGGTCGCCGTCCC

39,610

KIF5A

KIF5A-202

CAGCCTATCACCCAACCTTCTAAGTCAGGAAAGGAAGCTGAGTGGGAATGCCAGCTGGTAAGCGCAGGCTGCACTGGCCCATGACT
GTCGGATAGTGGGTTGAAGATTTCAGTCTTTTCTTTCGACTCACCTTACGGTCGACCATTCGCGTCCGACGTGACCGGGTACTGA

39,695

KIF5A

KIF5A-202

CCTTCAAGGAAAAGAGGGCCCTGCTCCCTTTACCTGCTGAGCTCCTTTTAGCAGTTAGGGAGAAGTGCAGGGGGAAAAATACCAGT
GGAAGTTCCTTTTCTCCGGGACGAGGGAAATGGACGACTCGAGGAAAATCGTCAATCCCTCTTGACGTCCCCCTTTTTATGGTCA

39,780

KIF5A

KIF5A-202

GGAGTGTGGAATAAATCCAAAGCAGTGATTTTTAAATGTTTTTCAAAAACAAATCTTACATAGAACCCCAATATAAAAAATAAAG
CCTCACACCTTATTTAGGTTTTCGTCACTAAAAATTTACAAAAAGTTTTTGTGTTAGAAATGTATCTTGGGGTTATATTTTTTATTTT

39,865

KIF5A

KIF5A-202

TAATGCAGACCTGGGCAGTTTGCATTTTTTTTTTTTTTTTTTTTTTGGTGGGAAGAAGTCTCAGCGTCTCTTAGGACTGACTGTTCA
ATTACGTCTGGACCCGTCAAACGTAAAAAAAAAAAAAAAAAAAAAACACCTTCTTCAGAGTCGCAGAGAATCCTGACTGACAAGT

39,950

KIF5A

KIF5A-202

AAGGCTCCTCAGCAAATGAGCCCTTGAACAGTCCTAAGAGACCCTGAGGATTCTGTGGAGTAGTTTGAAAACCATTTGTTCTGAGG
TTCCGAGGAGTCGTTTACTCGGGAACTTGTGAGGATTCTCTGGGACTCCTAAGACACCTCATCAAACCTTTTGGTAACAAGACTCC

40,035

KIF5A

KIF5A-202

AAGGGGGTCCAATCTGGCTCCTCTGCACTAAAGCTGCAACTCATGGAAAAGAGGGCAACGGTGGGGTAGACAAGCCATGCTGTCT
TTCCCCAGGTTAGACCGAGGAGACGTGATTTGACGTTGAGTACCTTTTCTCCCGTTGCCACCCCATCTGTTTCGGTACGACAGA

40,120

KIF5A

KIF5A-202

CCAGACCCACTAGGGTGAAGGAAGGTTCTGTGGGCCTGTGGACTTAGGCTAATATTTGCTGTGTCAGCAGGGCACTTAAGAATCC
GGTCTGGGTGATCCCACCTTCTTCCAAGGACACCCGGACACCTGAATCCGATTATAAACGACAGTCGTCCCGTGAATTTCTTAGG

40,205

KIF5A

KIF5A-202

AGGGGGTTTTATGTAATGTTGCCACCACATGGTTCTTTTAAAAACACATAAGGAAATGTGAGGGTGTAGCGCAGATGAGGAGAGA
TCCCCAAAATACATTACAACGGTGGTGTACCAAGAAAATTTTGTGTATTCTTTTACACTCCCACATCGCGTCTACTCCTCTCT

40,290

KIF5A

KIF5A-202

GATGACACAGAGGGAGCAGCCTTCTCTTTAGCAAGATGTAAGGGAAATATAATTCACTTACATAAAAAAGAAAACAACACACACGC
CTACTGTGTCTCCCTCGTCGGAAGAGAAAATCGTTCTACATTCCTTTATATTAAGTGAATGTATTTTTTCTTTGTTGTGTGTGCG

40,375

KIF5A

KIF5A-202

AAACCTTCACCAGAAGCTTCACACTACATCCTCCTCCTCCTGCTCCCCACCTTCACCGCATCCCTTTTCAGAGCCAGGGTCA
TTTGGGAAGTGGTCTTCGAAGTGTGATGTAGGAGGAGGAGGAGGACGAGGGGTGGAAGTGGCGTAGGGAAAAGTCTCGGTCCCAGT

40,460

KIF5A

KIF5A-202

CTGCAAGGGGCACCTGGCCTGCCCACTCACATCTGCCAAAATGTTGCATGCCAGCGTGGAAAGACAAACCAAACCTGCGCAACCCCC
GACGTTCCCGTGGACCGGACGGGTGAGTGTAGACGGTTTTACAACGTACGGTTCGCACCTTCTGTTTGGTTTGACGCGTTGGGGG

40,545

KIF5A

KIF5A-202

TGTGTGATTTTACTTGGTGTACATAGATAACTTTAAAAATAAAATAAATTCAATGATAACTCTA
ACACACATAAATGAACCACATGTATCTATTGAAATTTTATTTTATTTAAGTTACTATTGAGAT

3 '
40,608
5 '

KIF5A

























KIF5A-202

Feature	Location	Size	Type
✓ KIF5A	1 .. 40,608	40,608 bp	gene
/note = gene ENSG00000155980 Protein coding			
KIF5A-227	1 .. 18,187	18,187 bp	prim_transcript
/note = primary transcript ENST00000676250			
DCTN2-213	3 .. 1149	1147 bp	prim_transcript
/note = primary transcript ENST00000549712 protein_coding_CDS_not_defined			
DCTN2-232	1576 .. 1181	40,214 bp	prim_transcript
/note = primary transcript ENST00000678990 Retained intron			
DCTN2-203	3078 .. 1168	38,699 bp	prim_transcript
/note = primary transcript ENST00000546559 protein_coding_CDS_not_defined			
KIF5A-204	4002 .. 40,605	36,604 bp	prim_transcript
/note = primary transcript ENST00000674619			
✓ KIF5A-202	4019 .. 40,608	36,590 bp	prim_transcript
/note = primary transcript ENST00000455537			
KIF5A-201	4019 .. 38,623	34,605 bp	prim_transcript
/note = primary transcript ENST00000286452			
KIF5A-230	4019 .. 18,187	14,169 bp	prim_transcript
/note = primary transcript ENST00000676359			
KIF5A-211	4019 .. 17,668	13,650 bp	prim_transcript
/note = primary transcript ENST00000675216 Nonsense mediated decay			
KIF5A-209	4019 .. 17,501	13,483 bp	prim_transcript
/note = primary transcript ENST00000675023 Nonsense mediated decay			
KIF5A-232	4080 .. 40,567	36,488 bp	prim_transcript
/note = primary transcript ENST00000676457			
KIF5A-201	4247 .. 37,154	32,908 bp	CDS
▶ 25 segments = 2832 bp			
/note = coding sequence ENSP00000286452			
/translation = MAETNNECSIKVLCRFRPLNQA EILRGDKFIPIFQGDDSVVIG,,VSYFEIYLDKIRDLLD,,VTKTNLSVHEDKNRVPFVK,,GCTERFVSSPEILDVI DEGKSNRHVAVT,,NMNEHSSRSHSIFLINIKQENMETEQ KLSGKLYLVDLAGSEK,,VSKTGAEGAVLDEAKNINKSLSALGNVISALAEAGT,,KSYV PYRDSKMTRILQDSLGGNCRRTTMFICCPSSYNDAETKSTLMFGQR,,AKTIKNTASVNLELTAEQ WKKKYEKEKEKTKAQKETIAKLEAELSRWRN ,,GENVPETERLAGEEAALGAELCEETPVNDNSSIVVRIAPEERQKYEEEIRRLYKQLDDK,,DDEINQQSQLIEKLLKQQLMDQEE,,LLVSTRGDNE KVQRELHLQSENDAAKDEVKEVLQALEELAVNYDQKSQVEEKSQQNQLLVDLSQKV,,ATMLSLESELQRLQEVSGHQKRIA EVLNGLMK DLSEFSVIVGNGEIKL,,PVEISGAIEEFTVARLYISKIKSEVKSVVKRCRQLENLQVECHRKMEVTGRELSSCQLLISQ,,HEAKIRSLTEYMQSVE LKKRHLEESYDLSDELAKLQAQ,,ETVHEVALKDKEPDTQDADEVK,,KALELQ MESHREAHHRQLARLRDEINEKQKTIDELKD,,LNQKLQLELE KLQADYEKLEKSEEHEKSTKLQELT,,FLYERHEQSKQDLKGLEETV,,ARELQTLHNLRLKLFVQDVTTRVKK,,SAEMEPEDSGGIHSQKQKISFLENNL EQLTQVHKQ,,LVRDNADLRCLEPKLEKRLRATAERVKALEGALKEAKEGAMKDKRRYQQEVDRIKEAVRYKSSGKRGHSAQI,,AKPVRPGHYPAS SPTNRYGTRSECSYVNSLQANLYQNLQATPSSTSDMY,,FANSCTSSGATSSGGPLASYQKANMDN,,GNATDINDNR,,SDLPCGYEAEDQAK LFPLHQETAAS*			
✓ KIF5A-202	4247 .. 37,154	32,908 bp	CDS
▶ 28 segments = 3099 bp			
/note = coding sequence ENSP00000408979			
/translation = MAETNNECSIKVLCRFRPLNQA EILRGDKFIPIFQGDDSVVIG,,GKPYVFDVFPNNTTQEQVYHACAMQIVK,,DVLGYNGTIFAYGQTSSGKT HTME,,GKLHDPQLMGIIPRIARDIFNHIYSMDENLEFHIK,,VSYFEIYLDKIRDLLD,,VTKTNLSVHEDKNRVPFVK,,GCTERFVSSPEILDVIDEG KSNRHVAVT,,NMNEHSSRSHSIFLINIKQENMETEQ KLSGKLYLVDLAGSEK,,VSKTGAEGAVLDEAKNINKSLSALGNVISALAEAGT,,KSYV PYRDSKMTRILQDSLGGNCRRTTMFICCPSSYNDAETKSTLMFGQR,,AKTIKNTASVNLELTAEQ WKKKYEKEKEKTKAQKETIAKLEAELSRWRN,,GE NVPETERLAGEEAALGAELCEETPVNDNSSIVVRIAPEERQKYEEEIRRLYKQLDDK,,DDEINQQSQLIEKLLKQQLMDQEE,,LLVSTRGDNEKVQ RELHLQSENDAAKDEVKEVLQALEELAVNYDQKSQVEEKSQQNQLLVDLSQKV,,ATMLSLESELQRLQEVSGHQKRIA EVLNGLMKDLSE FSVIVGNGEIKL,,PVEISGAIEEFTVARLYISKIKSEVKSVVKRCRQLENLQVECHRKMEVTGRELSSCQLLISQ,,HEAKIRSLTEYMQSVELKRR HLEESYDLSDELAKLQAQ,,ETVHEVALKDKEPDTQDADEVK,,KALELQ MESHREAHHRQLARLRDEINEKQKTIDELKD,,LNQKLQLELEKLQA DYEKLEKSEEHEKSTKLQELT,,FLYERHEQSKQDLKGLEETV,,ARELQTLHNLRLKLFVQDVTTRVKK,,SAEMEPEDSGGIHSQKQKISFLENNL EQLTQVHKQ,,LVRDNADLRCLEPKLEKRLRATAERVKALEGALKEAKEGAMKDKRRYQQEVDRIKEAVRYKSSGKRGHSAQI,,AKPVRPGHYPAS SPTNRYGTRSECSYVNSLQANLYQNLQATPSSTSDMY,,FANSCTSSGATSSGGPLASYQKANMDN,,GNATDINDNR,,SDLPCGYEAEDQAKLFPL HQETAAS*			

Feature	Location	Size	Type
KIF5A-204	4247 .. 37,154	32,908 bp	CDS
▶ 29 segments = 3120 bp			
/note	= coding sequence ENSP00000502270		
/translation	= MAETNNECSIKVLCRFRPLNQA EILRGDKFIPIFQGDDSVVIG,,GKPYVFDVFPNTTQEQVYHACAMQIVK,,DVLGYNGTIFAYGQTSSGKHTME,,GKLHDPQLMGIIPRIARDIFNHIYSMDENLEFHIK,,VSYFEIYLDKIRDLLD,,VTKNLSVHEDKNRVPFVK,,GCTERFVSSPEEILDVIDEGKSNRHVAVT,,NMNEHSSRSHSIFLINIKQENMETEQKLSGKLYLDLAGSEK,,VSKTGAEGAVLDEAKNINKLSLALGNVISALAEAGT,,KSYVYPYRDSKMTRILQDSLGGNCRTTMFICCPSSYNDAETKSTLMFGQR,,AKTIKNTASVNLLELTAEQWKKKYEKEKEKTKAQKETIAKLEAELSRWRN,,GENVPETERLAGEEAALGAELCEETPVNDNSSIVVRIAPEERQKYEERIRLYKQLDDK,,DDEINQ QSQLIEKLLKQMLDQEE,,LLVSTRGDNEKVQRELSHLQSENDAAKDEVKEVLQALEELAVNYDQKSQVEEKSQQNQLLVDELSQKV,,ATMLSLESELQRLQEVSGHQKRIA EVNLGLMKDLSEFSVIVGNGEIKL,,PVEISGAIEEFTVARLYISKIKSEVKS VVKRCRQLENLQVECHRKMEVTGRELSSCQLLISQ,,HEAKIRSLTEYMQSVELKRRHLEESYDLSDELAKLQAQ,,ETVHEVALKDKEPDTQDADEVK,,KALELQ MESHREAHHRQLARLRDEINEKQKTIDELKD,,LNQKLQLELEKLQADYEKLEKSEEHEKSTKLQELT,,FLYERHEQSKQDLKGLEETV,,ARELQTLHNLRLKLFVQDVTTRVKK,,SAEMEPEDSGGIHSQKQKISFLENNLEQLTKVHKQ,,VDDWVSK,,LVRDNA DLRCLELPKLEKRLRATAERVKAL EGALKEA KEGAMKDKRRYQQEVDRIKEAVRYKSSGKRGHSAQI,,AKPVRPGHYPASSPTNYPYGT RSPECISYTNLSLFQNYQNLYLQATPSSSDMY,,FANSTSSGATSSGGPLASQYKANMDN,,GNATDINDNR,,SDLPCGYEAEDQAKLFLPHQETAAS*		
KIF5A-232	4247 .. 37,154	32,908 bp	CDS
▶ 27 segments = 2994 bp			
/note	= coding sequence ENSP00000501588		
/translation	= MAETNNECSIKVLCRFRPLNQA EILRGDKFIPIFQGDDSVVIG,,GKPYVFDVFPNTTQEQVYHACAMQIVK,,DVLGYNGTIFAYGQTSSGKHTME,,VSYFEIYLDKIRDLLD,,VTKNLSVHEDKNRVPFVK,,GCTERFVSSPEEILDVIDEGKSNRHVAVT,,NMNEHSSRSHSIFLINIKQENMETEQKLSGKLYLDLAGSEK,,VSKTGAEGAVLDEAKNINKLSLALGNVISALAEAGT,,KSYVYPYRDSKMTRILQDSLGGNCRTTMFICCPSSYNDAETKSTLMFGQR,,AKTIKNTASVNLLELTAEQWKKKYEKEKTKAQKETIAKLEAELSRWRN,,GENVPETERLAGEEAALGAELCEETPVNDNSSIVVRIAPEERQKYEERIRLYKQLDDK,,DDEINQ QSQLIEKLLKQMLDQEE,,LLVSTRGDNEKVQRELSHLQSENDAAKDEVKEVLQALEELAVNYDQKSQVEEKSQQNQLLVDELSQKV,,ATMLSLESELQRLQEVSGHQKRIA EVNLGLMKDLSEFSVIVGNGEIKL,,PVEISGAIEEFTVARLYISKIKSEVKS VVKRCRQLENLQVECHRKMEVTGRELSSCQLLISQ,,HEAKIRSLTEYMQSVELKRRHLEESYDLSDELAKLQAQ,,ETVHEVALKDKEPDTQDADEVK,,KALELQ MESHREAHHRQLARLRDEINEKQKTIDELKD,,LNQKLQLELEKLQADYEKLEKSEEHEKSTKLQELT,,FLYERHEQSKQDLKGLEETV,,ARELQTLHNLRLKLFVQDVTTRVKK,,SAEMEPEDSGGIHSQKQKISFLENNLEQLTKVHKQ,,LVRDNA DLRCLELPKLEKRLRATAERVKAL EGALKEA KEGAMKDKRRYQQEVDRIKEAVRYKSSGKRGHSAQI,,AKPVRPGHYPASSPTNYPYGT RSPECISYTNLSLFQNYQNLYLQATPSSSDMY,,FANSTSSGATSSGGPLASQYKANMDN,,GNATDINDNR,,SDLPCGYEAEDQAKLFLPHQETAAS*		
KIF5A-230	4247 .. 18,187	13,941 bp	CDS
▶ 2 segments = 234 bp			
/note	= coding sequence ENSP00000502609		
/translation	= MAETNNECSIKVLCRFRPLNQA EILRGDKFIPIFQGDDSVVIG,,GKLHDPQLMGIIPRIARDIFNHIYSMDENLEFHIK 78 amino acids = 9.0 kDa		
DCTN2-208	10,530 .. 1181	31,260 bp	prim_transcript
/note	= primary transcript ENST00000547480 Retained intron		
DCTN2-207	11,047 .. 1163	30,725 bp	prim_transcript
/note	= primary transcript ENST00000547345 Retained intron		
DCTN2-204	13,031 .. 1160	28,738 bp	prim_transcript
/note	= primary transcript ENST00000546670 Protein coding		
DCTN2-218	13,232 .. 1096	28,473 bp	prim_transcript
/note	= primary transcript ENST00000550954 Protein coding		
DCTN2-217	14,010 .. 1197	27,796 bp	prim_transcript
/note	= primary transcript ENST00000550750 Nonsense mediated decay		
DCTN2-222	14,010 .. 1054	27,653 bp	prim_transcript
/note	= primary transcript ENST00000551611 Nonsense mediated decay		
DCTN2-212	15,408 .. 1095	26,296 bp	prim_transcript
/note	= primary transcript ENST00000549394 Nonsense mediated decay		
DCTN2-215	15,671 .. 1127	26,065 bp	prim_transcript
/note	= primary transcript ENST00000550201 Nonsense mediated decay		
DCTN2-201	15,714 .. 1116	26,011 bp	prim_transcript
/note	= primary transcript ENST00000434715 Protein coding		
DCTN2-228	15,715 .. 1199	26,093 bp	prim_transcript
/note	= primary transcript ENST00000678322 Protein coding		

Feature	Location	Size	Type
DCTN2-202	15,715 .. 1152	26,046 bp	prim_transcript
/note = primary transcript ENST00000543672 Protein coding			
DCTN2-231	15,715 .. 666	25,560 bp	prim_transcript
/note = primary transcript ENST00000678653 Protein coding			
DCTN2-230	15,872 .. 1197	25,934 bp	prim_transcript
/note = primary transcript ENST00000678521 Nonsense mediated decay			
DCTN2-224	15,946 .. 1152	25,815 bp	prim_transcript
/note = primary transcript ENST00000552390 Retained intron			
DCTN2-229	15,951 .. 1152	25,810 bp	prim_transcript
/note = primary transcript ENST00000678505 Protein coding			
DCTN2-209	15,974 .. 1167	25,802 bp	prim_transcript
/note = primary transcript ENST00000548249 Protein coding			
DCTN2	16,392 .. 1199	25,416 bp	gene
/note = gene ENSG00000175203 Protein coding			
KIF5A-227	18,107 .. 18,187	81 bp	CDS
/note = coding sequence ENSP00000501749			
/translation = MGIIIPRIARDIFNHIYSMDENLEFHIK 27 amino acids = 3.3 kDa			
✓ Donor Template SNV -> REV	22,970 .. 23,069	100 bp	misc_feature
✓ Protospacer Sequence	22,988 .. 23,007	20 bp	misc_feature
✓ SNV	22,990 .. 22,990	1 bp	misc_feature
/note = REV = A SNV = G			
✓ PAM	23,008 .. 23,010	3 bp	misc_feature
KIF5A-225	23,266 .. 33,860	10,595 bp	prim_transcript
/note = primary transcript ENST00000676081 Retained intron			
KIF5A-220	23,555 .. 40,399	16,845 bp	prim_transcript
/note = primary transcript ENST00000675882 Retained intron			
KIF5A-205	25,296 .. 25,584	289 bp	prim_transcript
/note = primary transcript ENST00000674653 protein_coding_CDS_not_defined			
KIF5A-223	25,744 .. 33,822	8079 bp	prim_transcript
/note = primary transcript ENST00000675984 Retained intron			
KIF5A-229	26,036 .. 29,247	3212 bp	CDS
↳ 2 segments = 396 bp			
/note = coding sequence ENSP00000501978			
/translation = LLVSTRGDNEKVVQRELSHLQSENDAAKDEVKEVLQALEELAVNYDQKSQVEEKSQQNQLLVDELSQKV,,PVEISGAIEEEFTVARLYISKIKSE VKSVVKRCRQLENLQVECHRKMEVTGRELSSCQLLISQ 132 amino acids = 15.1 kDa			
KIF5A-229	26,036 .. 29,247	3212 bp	prim_transcript
/note = primary transcript ENST00000676352			
KIF5A-226	26,036 .. 26,701	666 bp	prim_transcript
/note = primary transcript ENST00000676242 protein_coding_CDS_not_defined			
KIF5A-222	26,116 .. 39,314	13,199 bp	prim_transcript
/note = primary transcript ENST00000675929 Retained intron			

Feature	Location	Size	Color	Symbol	Type
KIF5A-215	26,555 .. 29,247	2693 bp	■	→	CDS
▶ 2 segments = 234 bp					
/note	= coding sequence ENSP00000502531				
/translation	= ATMLSLESELQRLQE,,PVEISGAIEEEFTVARLYISKIKSEVKSVVKRCRQLENLQVECHRKMEVTGRELSSCQLLISQ 78 amino acids = 9.0 kDa				
KIF5A-215	26,555 .. 29,247	2693 bp	■	→	prim_transcript
/note	= primary transcript ENST00000675629				
KIF5A-212	29,059 .. 30,837	1779 bp	■	→	prim_transcript
/note	= primary transcript ENST00000675299 Nonsense mediated decay				
KIF5A-213	30,768 .. 33,409	2642 bp	■	→	prim_transcript
/note	= primary transcript ENST00000675397 protein_coding_CDS_not_defined				
KIF5A-206	32,213 .. 35,543	3331 bp	■	→	prim_transcript
/note	= primary transcript ENST00000674776 Nonsense mediated decay				
KIF5A-221	32,213 .. 35,147	2935 bp	■	→	CDS
▶ 2 segments = 310 bp					
/note	= coding sequence ENSP00000502360				
/translation	= SAEMEPEDSGGIHSQKQKISFLENNLEQLTK,,LVRDNA DLRCLELPKLEKRLRATAERVKALEGALKEAKEGAMKDKRRYQQEVDRIKEAVRYKSS 663 amino acids = 11.8 kDa				
KIF5A-221	32,213 .. 35,147	2935 bp	■	→	prim_transcript
/note	= primary transcript ENST00000675907				
KIF5A-216	34,931 .. 35,543	613 bp	■	→	CDS
▶ 2 segments = 404 bp					
/note	= coding sequence ENSP00000502231				
/translation	= LVRDNA DLRCLELPKLEKRLRATAERVKALEGALKEAKEGAMKDKRRYQQEVDRIKEAVRYKSSGKRGHSAQI,,ASSWLFSFFIAAKPVRPGHYPA SSPTNPYGTRSPECISYTNSLQNYQNLYLQATPSSTSDM 134 amino acids = 15.2 kDa				
KIF5A-216	34,931 .. 35,543	613 bp	■	→	prim_transcript
/note	= primary transcript ENST00000675634				
KIF5A-218	34,989 .. 39,831	4843 bp	■	→	prim_transcript
/note	= primary transcript ENST00000675737 Retained intron				
KIF5A-203	35,653 .. 36,849	1197 bp	■	→	prim_transcript
/note	= primary transcript ENST00000552227 Retained intron				
KIF5A-217	35,845 .. 38,623	2779 bp	■	→	prim_transcript
/note	= primary transcript ENST00000675697				
KIF5A-217	35,845 .. 38,199	2355 bp	■	→	CDS
▶ 3 segments = 205 bp					
/note	= coding sequence ENSP00000501809				
/translation	= LCKLLYQQWSHIFWRPLGFLPEGQHGQW,,SDLPCGYEAEDQAKLFLHQETAAS*SPTPTAAYLHFQ,,FL 68 codons (1 internal stop codon)				
KIF5A-224	35,845 .. 36,604	760 bp	■	→	CDS
▶ 2 segments = 99 bp					
/note	= coding sequence ENSP00000501739				
/translation	= LCKLLYQQWSHIFWRPLGFLPEGQHGQ*,,YQ*Q* 33 codons (2 internal stop codons)				
KIF5A-224	35,845 .. 36,604	760 bp	■	→	prim_transcript
/note	= primary transcript ENST00000676055				
KIF5A-231	35,911 .. 39,873	3963 bp	■	→	prim_transcript
/note	= primary transcript ENST00000676437				

Feature	Location	Size			Type
KIF5A-231	35,911 .. 36,902	992 bp			CDS
▶ 2 segments = 343 bp					
/note	= coding sequence ENSP00000502358				
/translation	= GQHGGQW,,KCHRYQ*Q*VQQSPLPLGSLGGTRRD*ISLVPHLEVPGAFGEGGGSETHSFHHCVVQEIQSFPCLSAEYLPSSNPICGFSLFQ**GLDENNVGI*RLGFSPTFGSLV 114 codons (6 internal stop codons)				
KIF5A-219	36,577 .. 38,623	2047 bp			prim_transcript
/note	= primary transcript ENST00000675866				
KIF5A-219	36,577 .. 38,199	1623 bp			CDS
▶ 2 segments = 35 bp					
/note	= coding sequence ENSP00000502341				
/translation	= EMPQISMTI,,VS 11 amino acids = 1.2 kDa				
KIF5A-210	36,577 .. 37,190	614 bp			prim_transcript
/note	= primary transcript ENST00000675201 protein_coding_CDS_not_defined				
KIF5A-228	36,577 .. 37,190	614 bp			prim_transcript
/note	= primary transcript ENST00000676265 protein_coding_CDS_not_defined				
KIF5A-208	37,076 .. 40,608	3533 bp			prim_transcript
/note	= primary transcript ENST00000674980				
KIF5A-214	37,076 .. 40,608	3533 bp			prim_transcript
/note	= primary transcript ENST00000675433				
KIF5A-207	37,076 .. 37,481	406 bp			prim_transcript
/note	= primary transcript ENST00000674858				
KIF5A-207	37,076 .. 37,154	79 bp			CDS
/note	= coding sequence ENSP00000502170				
/translation	= E*PAVWL*G*GPGQAFSPPRDSSQL 26 codons (3 internal stop codons)				
KIF5A-208	37,076 .. 37,154	79 bp			CDS
/note	= coding sequence ENSP00000501935				
/translation	= E*PAVWL*G*GPGQAFSPPRDSSQL 26 codons (3 internal stop codons)				
KIF5A-214	37,076 .. 37,154	79 bp			CDS
/note	= coding sequence ENSP00000502122				
/translation	= E*PAVWL*G*GPGQAFSPPRDSSQL 26 codons (3 internal stop codons)				

Primer	Length	Binding Sites	Tm	Date Added
✓ PCR Forward /sequence = TGTAATATGTGGCAGGGGTTAGGGG 52% GC / 7873.2 Da	25-mer	22,721 .. 22,745	62°C	Jan 18, 2023
✓ Sanger Sequencing /sequence = TGGAACGAGGTGGTGACAGC 60% GC / 6247.1 Da	20-mer	22,867 .. 22,886	61°C	Jan 18, 2023
✓ Donor Template SNV -> REV /sequence = GGGTGAGGGGACCTAAGGATCACTCACAGTGCCCTCAGCCAGTGCGGAGATCACATTGCCAGAGCTGACAGTGACTTGTTGATATTCT 55% GC / 70842.0 Da	100-mer	22,970 .. 23,069	79°C	Jan 18, 2023
✓ gRNA Protospacer /sequence = CAGCAAGTCACTGTCAGCTC 55% GC / 6062.0 Da	20-mer	22,988 .. 23,007	52°C	Jan 18, 2023
✓ PCR Reverse /sequence = TTCTTAATGGTCTTTGCCCTGGGTG 48% GC / 7661.0 Da	25-mer	23,503 .. 23,527	61°C	Jan 18, 2023