Table 1: Variant #21 cDNA elements and complete sequence

Element	Location	SEQ ID NO	Sequence
5′ ITR	1-130	1	CTGCGCGCTCGCTCGCTCACTGAGGCCGCCCGGGCAAAGCCCGGGCGTCG GGCGACCTTTGGTCGCCCGGCCTCAGTGAGCGAGCGAGCGCGCAGAGAGG GAGTGGCCAACTCCATCACTAGGGGTTCCT (SEQ ID NO:1)
APOE Enhancer	141- 461	2	AGGCTCAGAGGCACACAGGAGTTTCTGGGCTCACCCTGCCCCCTTCCAAC CCCTCAGTTCCCATCCTCCAGCAGCTGTTTGTGTGCTGCCTCTGAAGTCC ACACTGAACAAACTTCAGCCTACTCATGTCCCTAAAATGGGCAAACATTG CAAGCAGCAAACAGCAAACACACAGCCCTCCCTGCCTGCTGACCTTGGAG CTGGGGCAGAGGTCAGAGACCTCTCTGGGCCCATGCCACCTCCAACATCC ACTCGACCCCTTGGAATTTCGGTGGAGAGGAGCAGAGGTTGTCCTGGCGT GGTTTAGGTAGTGTGAGAGGG (SEQ ID NO:2)
hAAT Promoter	471- 863	3	GATCTTGCTACCAGTGGAACAGCCACTAAGGATTCTGCAGTGAGAGCAGA GGGCCAGCTAAGTGGTACTCTCCCAGAGACTGTCTGACTCACGCCACCCC CTCCACCTTGGACACAGGACGCTGTGGTTTCTGAGCCAGGTACAATGACT CCTTTCGGTAAGTGCAGTGGAAGCTGTACACTGCCCAGGCAAAGCGTCCG GGCAGCGTAGGCGGGCGACTCAGATCCCAGCCAGTGGACTTAGCCCCTGT TTGCTCCTCCGATAACTGGGGTGACCTTGGTTAATATTCACCAGCAGCCT CCCCCGTTGCCCCTCTGGATCCACTGCTTAAATACGGACGAGGACAGGGC CCTGTCTCCTCAGCTTCAGGCACCACCACTGACCTGGGACAGT (SEQ ID NO:3)
HBB-IgG chimeric intron	867- 999	4	GTAAGTATCAAGGTTACAAGACAGGTTTAAGGAGACCAATAGAAACTGGG CTTGTCGAGACAGAGAAGACTCTTGCGTTTCTGATAGGCACCTATTGGTC TTACTGACATCCACTTTGCCTTTCTCTCCACAG (SEQ ID NO:4)
GLA cDNA	1052-2341	5	ATGCAACTTAGGAACCCCGAACTTCATCTTGGCTGCGCCCTGGCCCTCCG CTTCCTCGCTCTCGTTTCTTGGGACATCCCTGGCGCTAGGGCACTCGACA ACGGCCTCGCGCGGACTCCTACGATGGGATGGTTGCACTGGGAAAG GTTTATGTGCAATCTGGATTGCCAGGAGGAGCCGGACTCATGCATCTCGG AGAAGCTGTTCATGGAGATGGCGGAACTTATGGTATCGGAGGGATGGAAG GATGCCGGGTATGAGTATCTCTGTATCGACGATTGTTGGATGGCTCCCCA GAGAGACTCCGAGGGACGACTCCAAGCGGACCCCCAGCGCTTTCCACATG GCATTCGACAGCTCGCCAATTACGTGCACTCGAAGGGGTTGAAGTTGGGA ATCTACGCAGATGTGGGCAACAAAACGTGTGCGGGGTTCCCGGGGTCGTT TGGATACTACGATATTGATGCGCAGACGTTTGCTGACTGGGGTGTCGATC TTTTGAAATTTGATGGCTGTTACTGTGATTCGTTGGAAAACCTGGCGGAT GGATACAAGCATATGTCACTCGCCTTGAACCGGACAGGTCGCTCAATCGT ATACAGCTGCGAATGGCCCCTCTATATGTGGCCCTTCCAAAAGCCCAATT ACACAGAGATTCGGCAGTATTGCAATCACTGGAGGAACTTTGCCGATATT GACGACAGCTGGAAATCCATCAAGTCCATTCTCGATTGGACGAGCTTCAA CCAGGAGCGCATCGTGGACGTGGCAGGACCCGGAGGTTGGAACGATCCGG ACATGCTCGTAATTGGGAATTTCGGGCTTAGCTGGAATCAGCAAGTCACC CAAATGGCGCTGTGGGCCATCATGGCAGCTCCTCTCTTTATGTCGAATGA TCTGCGGCATATCTCGCCCCAGGCAAAGGCTCTTTTGCAAGACAAGGACG TCATCGCAATCAATCAGGACCCATTGGGGAAACAGGGATATCAACTTCGC CAGGGTGACAATTTCGAAGTATGGGAGAGGCCGCTTAGCGGGCTGGCGTG GGCGGTCGCGATGATTAACCGGCAGGAAATCGGAGGGCCTCGCTCGTATA CCATCGCAGTGGCCTCACTGGGCAAAGGAGTGGCGTGCAATCCGGCCTGC TTCATCACCCAGTTGTTGCCCGTCAAAAGAAAGCTGGGTTTCTACGAGTG GACATCCAGACTTAGATCACACATTAACCCTACTGGTACGGTGTTGCTCC AGCTCGAAAACACAATGCAGATGTCGTTGAAAGACCTGCTGTAA (SEQ ID NO:5)
WPREmut6 J04514	2364-2955	6	AATCAACCTCTGGATTACAAAATTTGTGAAAGATTGACTGGTATTCTTAA CTATGTTGCTCCTTTTACGCTATGTGGATACGCTGCTTTAATGCCTTTGT ATCATGCTATTGCTTCCCGTATGGCTTTCATTTTCTCCTCCTTGTATAAA

			TCCTGGTTGCTGTCTCTTTATGAGGAGTTGTGGCCCGTTGTCAGGCAACG TGGCGTGGTGTGCACTGTGTTTGCTGACGCAACCCCCACTGGTTGGGGCA TTGCCACCACCTGTCAGCTCCTTTCCGGGACTTTCGCTTTCCCCCTCCCT ATTGCCACGGCGGAACTCATCGCCGCCTGCCTTGCCCGCTGCTGGACAGG GGCTCGGCTGTTGGGCACTGACAATTCCGTGGTGTTGTCGGGGAAATCAT CGTCCTTTCCTTGGCTGCTCGCCTGTGTTGCCACCTGGATTCTGCGCGGG ACGTCCTTCTGCTACGTCCCTTCGGCCCTCAATCCAGCGGACCTTCCTTC CCGCGGCCTGCTGCCGGCTCTGCGGCCTCTTCCGCGTCTTCGCCTTCGCC CTCAGACGAGTCGGATCTCCCTTTGGGCCGCCTCCCCGCCTG (SEQ ID NO:6)
bGH polyA	2962-3186	7	CTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCCTCCCCCGTGCCT TCCTTGACCCTGGAAGGTGCCACTCCCACTGTCCTTTCCTAATAAAATGA GGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTG GGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCAT GCTGGGGATGCGGTGGGCTCTATGG (SEQ ID NO:7)
3′ ITR	3214-3321	8	AGGAACCCCTAGTGATGGAGTTGGCCACTCCCTCTCTGCGCGCTCGCTCG CTCACTGAGGCCGCCCGGGCTTTGCCCGGGCGGCCTCAGTGAGCGAGCGA GCGCGCAG (SEQ ID NO:8)

Complete transgene sequence:

```
  CTGCGCGCTC GCTCGCTCAC TGAGGCCGCC CGGGCAAAGC CCGGGCGTCG    50
  GGCGACCTTT GGTCGCCCGG CCTCAGTGAG CGAGCGAGCG CGCAGAGAGG   100
  GAGTGGCCAA CTCCATCACT AGGGGTTCCT GCGGCCTAGT AGGCTCAGAG   150
  GCACACAGGA GTTTCTGGGC TCACCCTGCC CCCTTCCAAC CCCTCAGTTC   200
  CCATCCTCCA GCAGCTGTTT GTGTGCTGCC TCTGAAGTCC ACACTGAACA   250
  AACTTCAGCC TACTCATGTC CCTAAAATGG GCAAACATTG CAAGCAGCAA   300
  ACAGCAAACA CACAGCCCTC CCTGCCTGCT GACCTTGGAG CTGGGGCAGA   350
  GGTCAGAGAC CTCTCTGGGC CCATGCCACC TCCAACATCC ACTCGACCCC   400
  TTGGAATTTC GGTGGAGAGG AGCAGAGGTT GTCCTGGCGT GGTTTAGGTA   450
  GTGTGAGAGG GGTACCCGGG GATCTTGCTA CCAGTGGAAC AGCCACTAAG   500
  GATTCTGCAG TGAGAGCAGA GGGCCAGCTA AGTGGTACTC TCCCAGAGAC   550
  TGTCTGACTC ACGCCACCCC CTCCACCTTG GACACAGGAC GCTGTGGTTT   600
  CTGAGCCAGG TACAATGACT CCTTTCGGTA AGTGCAGTGG AAGCTGTACA   650
  CTGCCCAGGC AAAGCGTCCG GGCAGCGTAG GCGGGCGACT CAGATCCCAG   700
  CCAGTGGACT TAGCCCCTGT TTGCTCCTCC GATAACTGGG GTGACCTTGG   750
  TTAATATTCA CCAGCAGCCT CCCCCGTTGC CCCTCTGGAT CCACTGCTTA   800
  AATACGGACG AGGACAGGGC CCTGTCTCCT CAGCTTCAGG CACCACCACT   850
  GACCTGGGAC AGTCAGGTAA GTATCAAGGT TACAAGACAG GTTTAAGGAG   900
  ACCAATAGAA ACTGGGCTTG TCGAGACAGA GAAGACTCTT GCGTTTCTGA   950
  TAGGCACCTA TTGGTCTTAC TGACATCCAC TTTGCCTTTC TCTCCACAGG  1000
  CAATTGATCC CCCTGATCTG CGGCCTCGAC GGTATCGATA AGCTTGCCAC  1050
  CATGCAACTT AGGAACCCCG AACTTCATCT TGGCTGCGCC CTGGCCCTCC  1100
  GCTTCCTCGC TCTCGTTTCT TGGGACATCC CTGGCGCTAG GGCACTCGAC  1150
  AACGGCCTCG CGCGGACTCC TACGATGGGA TGGTTGCACT GGGAAAGGTT  1200
  TATGTGCAAT CTGGATTGCC AGGAGGAGCC GGACTCATGC ATCTCGGAGA  1250
  AGCTGTTCAT GGAGATGGCG GAACTTATGG TATCGGAGGG ATGGAAGGAT  1300
  GCCGGGTATG AGTATCTCTG TATCGACGAT TGTTGGATGG CTCCCCAGAG  1350
  AGACTCCGAG GGACGACTCC AAGCGGACCC CCAGCGCTTT CCACATGGCA  1400
  TTCGACAGCT CGCCAATTAC GTGCACTCGA AGGGGTTGAA GTTGGGAATC  1450
  TACGCAGATG TGGGCAACAA AACGTGTGCG GGGTTCCCGG GGTCGTTTGG  1500
  ATACTACGAT ATTGATGCGC AGACGTTTGC TGACTGGGGT GTCGATCTTT  1550
  TGAAATTTGA TGGCTGTTAC TGTGATTCGT TGGAAAACCT GGCGGATGGA  1600
  TACAAGCATA TGTCACTCGC CTTGAACCGG ACAGGTCGCT CAATCGTATA  1650
  CAGCTGCGAA TGGCCCCTCT ATATGTGGCC CTTCCAAAAG CCCAATTACA  1700
  CAGAGATTCG GCAGTATTGC AATCACTGGA GGAACTTTGC CGATATTGAC  1750
  GACAGCTGGA AATCCATCAA GTCCATTCTC GATTGGACGA GCTTCAACCA  1800
  GGAGCGCATC GTGGACGTGG CAGGACCCGG AGGTTGGAAC GATCCGGACA  1850
```

```
TGCTCGTAAT TGGGAATTTC GGGCTTAGCT GGAATCAGCA AGTCACCCAA  1900
ATGGCGCTGT GGGCCATCAT GGCAGCTCCT CTCTTTATGT CGAATGATCT  1950
GCGGCATATC TCGCCCCAGG CAAAGGCTCT TTTGCAAGAC AAGGACGTCA  2000
TCGCAATCAA TCAGGACCCA TTGGGGAAAC AGGGATATCA ACTTCGCCAG  2050
GGTGACAATT TCGAAGTATG GGAGAGGCCG CTTAGCGGGC TGGCGTGGGC  2100
GGTCGCGATG ATTAACCGGC AGGAAATCGG AGGGCCTCGC TCGTATACCA  2150
TCGCAGTGGC CTCACTGGGC AAAGGAGTGG CGTGCAATCC GGCCTGCTTC  2200
ATCACCCAGT TGTTGCCCGT CAAAAGAAAG CTGGGTTTCT ACGAGTGGAC  2250
```