

AMGEN[®] Biotech Experience

Scientific Discovery for the Classroom Exploring Precision Medicine

STUDENT RESOURCES AND LINKS

<https://go.edc.org/epm-student-resources/>



Chapter 1: What's the Right Medicine?

- Video: [*Simple Genetic Test Shows Promise for Better Outcomes in Heart Stent Patients*](#)
- Article: [*"How Your Genes Influence What Medicines Are Right For You"*](#)

Chapter 2: Is My Sense of Taste Controlled by My Genes?

- Video: [*What Is a Gene?*](#)
- Article: [*"Mamas, Don't Let Your Babies Grow Up to Be Broccoli-Haters"*](#)
- Article (optional): [*"Genetic Taste Markers and Food Preferences"*](#)

Chapter 3: Exploring Our DNA

None

Chapter 4: How Is DNA Sequenced, and What Can We Learn?

- GenBank Accession Number: TAS2R38 taster nucleotide sequence GenBank accession number
- AY258597
- GenBank Accession Number: TAS2R38 nontaster nucleotide sequence GenBank accession number AF494231
- GenBank Accession Number: TAS2R38 taster amino acid sequence GenBank accession number
- AAP14666.1
- GenBank Accession Number: TAS2R38 nontaster amino acid sequence GenBank accession number AAM19322.1
- Video: [*ABE BLAST Tutorial*](#)
- Website: [*NCBI BLAST*](#)

Chapter 5: Restriction Enzyme Digestion of TAS2R38 PCR Products

- File: [*TAS2R38.seq*](#)
- Video: [*Sequence Extractor Tutorial*](#)
- Website: [*Sequence Extractor*](#)

- **Sequence: TAS2R38 gene for use in Sequence Extractor**

```
1 ATGTTGACTC TAACTCGCAT CCGCACTGTG TCCTATGAAG TCAGGAGTAC ATTTCTGTTC
61 ATTTTCAGTCC TGGAGTTTGC AGTGGGGTTT CTGACCAATG CCTTCGTTTT CTTGGTGAAT
121 TTTTGGGATG TAGTGAAGAG GCGGCCACTG AGCAACAGTG ATTGTGTGCT GCTGTGTCTC
181 AGCATCAGCC GGCTTTTCCCT GCATGGACTG CTGTTCCCTGA GTGCTATCCA GCTTACCCAC
241 TTCCAGAAGT TGAGTGAACC ACTGAACCAC AGCTACCAAG CCATCATCAT GCTATGGATG
301 ATTGCAAACC AAGCCAACCT CTGGCTTGCT GCCTGCCTCA GCCTGCTTTA CTGCTCCAAG
361 CTCATCCGTT TCTCTCACAC CTTCTGATC TGCTTGGCAA GCTGGGTCTC CAGGAAGATC
421 TCCCAGATGC TCCTGGGTAT TATTCTTTGC TCCTGCATCT GCACTGTCCT CTGTGTTTGG
481 TGCTTTTTTTA GCAGACCTCA CTTACAGTC ACAACTGTGC TATTCATGAA TAACAATACA
541 AGGCTCAACT GGCAGAATAA AGATCTCAAT TTATTTTATT CCTTTCTCTT CTGCTATCTG
601 TGGTCTGTGC CTCCTTTCCT ATTGTTTCTG GTTTCTTCTG GGATGCTGAC TGTCTCCCTG
661 GGAAGGCACA TGAGGACAAT GAAGGTCTAT ACCAGAACT CTCGTGACCC CAGCCTGGAG
721 GCCACATTA AAGCCCTCAA GTCTCTTGTC TCCTTTTTTCT GCTTCTTTGT GATATCATCC
781 TGTGTTGCCT TCATCTCTGT GCCCTACTG ATTCTGTGGC GCGACAAAAT AGGGGTGATG
841 GTTTGTGTTG GGATAATGGC AGCTTGTCCC TCTGGGCATG CAGCCATCCT GATCTCAGGC
901 AATGCCAAGT TGAGGAGAGC TGTGATGACC ATTCTGCTCT GGGCTCAGAG CAGCCTGAAG
961 GTAAGAGCCG ACCACAAGGC AGATTCCCGG ACACTGTGCT GA
```

- **Sequence: Forward and Reverse primer for use in Sequence Extractor**

CCTTCGTTTTTCTTGGTGAATTTTTGGGATGTAGTGAAGAGGCGG forward primer,
TGAGGCAGGCAGCAAGCCAGAGGTTGGCTTGGTTTGAATCATC reverse primer

Chapter 6: Gel Electrophoresis and Genotyping

- Article: "[Genes Give Africans a Better Sense of Taste](#)"

- Website: [SNPedia](#)

- Website: [Sequence Extractor](#)

- Sequence: CYP2C19 Exon 4*3

```
GCTTCACCCTGTGATCCCACTTTTCATCCTGGGCTGTGCTCCCTGCAATGTGATCTGCTCCATTATTTT
CCAGAAACGTTTCGATTATAAAGATCAGCAATTTCTTAACTTGATGGAAAAATTGAATGAAAACATCA
GGATTGTAAGCACCCCCTGAATCCAG
```

- Sequence: CYP2C19 Exon 5*2

```
ATATGCAATAATTTTCCCACTATCATTGATTATTTCCCGGGAACCCATAAC
```

- Website: [NCBI BLAST](#)

Chapter 7: SNPs and Drug Metabolism

- Website: [PharmGKB](#)