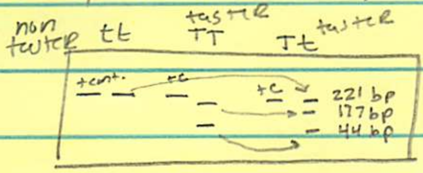
overview

taste molecule → taste receptor on taste cell → nervous impulse
bitter taster receptor on sweet cell → bitter perceived as tasting sweet

inability to taste PTC - recessive trait

gel



3 bands rep. both alleles

positive control
PCR product that is uncut by restriction enzyme HaeIII

HaeIII cuts @ sequence GG|CC

(TT) Tasters have seq - cut DNA into 44 bp + 177 bp

non tasters (Tt) HaeIII does not req. GGGC seq - doesn't cut

template T - nucleotide
A
T
G

A G seq of non-taster allele changes so no longer recog.

TAS2R38 gene for PTC taste receptor 3 nucleotides that vary
each variation → SNP
one combo - correlates strongly w/ TT allele

Steps:
DNA from mouth - PCR to amp TAS2R38 gene
PCR product digested w/ restriction enzyme HaeIII
(recon. seq inclu. one SNPs for T allele) T allele cut t allele not cut

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PCR steps: ① Denaturing step heat → DNA melt → disrupt hydrogen bonds btween comple. base pairs → single stranded DNA temp.

② Annealing step anneal primers to sing. strand DNA temp

③ Extending step Elongation (we have Taq DNA polymerase opt act. 75°C - 80°C) → synthesizes new DNA strand comp. to DNA temp. strand by adding dNTPs

binds to primers/temp hybrid & starts begins DNA synthesis