

## Reference Materials and Resources:

### PCR

Kary Mullis website: <http://www.karymullis.com/pcr.shtml>

PCR Rap <http://www.youtube.com/watch?v=oCRJ4r0RDC4>

Dry but Excellent <http://www.youtube.com/watch?v=YgXcJ4n-kQ&feature=related>

Catchy <http://www.youtube.com/watch?v=HMC7c2T8fVk&feature=fvw>

**Principles and technical aspects of PCR Amplification**, van Pelt-Verkuil, E, et. al., 2008, Springer

Mullis, K. (1990). The Unusual Origin of the Polymerase Chain Reaction. *Sci. Am.* April, 56-65.

### Human

**Carolina Biological Supply: Using a Single Nucleotide Polymorphism (SNP) to Predict Bitter Tasting Ability Kit**

<http://www.carolina.com/product/ptc+extraction+and+amplification+kit+with+0.5-ml+tubes+%28with+prepaid+coupon%29.do?keyword=SNP+kit&sortBy=bestMatches>

This kit explores the molecular basis of the inherited ability to taste the bitter chemical phenylthiocarbamide (PTC), which was first described in the 1930s by Cold Spring Harbor Laboratory scientist Albert Blakeslee. Students determine their ability to taste PTC using taste paper. They then use safe saline mouthwash and Chelex extraction to obtain a sample of their own DNA and amplify a 221-nucleotide region of the PTC taste receptor gene. The 2 alleles differ by a single nucleotide, so restriction digestion of the amplified product followed by gel electrophoresis effectively differentiates the 2 alleles. One allele strongly correlates to the ability to taste PTC. After scoring their SNP genotypes, students determine how well the SNP genotypes actually correlate to tasting.

Each kit includes materials for 25 PCR reactions and restriction digests, and a PTC CD-ROM. CD-ROM includes animations and additional resources.

**TAS background info (Wellesley College):**

[http://openwetware.org/wiki/BISC110/S11:\\_Lab\\_6\\_Taster\\_SNP1#Introduction](http://openwetware.org/wiki/BISC110/S11:_Lab_6_Taster_SNP1#Introduction)

Kasai, K., et. al. (1990). Amplification of a Variable Number of Tandem Repeats (VNTR) Locus (pMCT118) by the Polymerase Chain Reaction (PCR) and Its Application to Forensic Science. *J. Forensic Sci.* **35**: 1196-1200.

Comas, D., et.al. (2001). Recent Insertion of an *Alu* Element Within a polymorphic Human-Specific *Alu* Insertion. *Mol. Biol. Evol.* 18:85-88.

**GMO**

***Nature Education Site: [//www.nature.com/scitable/spotlight/GMOs-6978241](http://www.nature.com/scitable/spotlight/GMOs-6978241)***

**Food Inc.: Mendel to Monsanto - The Promise and Perils of the Biotech Harvest,  
(2005) Peter Pringle, Simon & Schuster, 0-7432-2611-9**

**Mussel**

**Invasive Mussel Project – Dr. Peter Wimberger, U of Puget Sound  
[http://grows.ups.edu/mussel\\_project.htm](http://grows.ups.edu/mussel_project.htm)**