


## “Supertaster” Lab Kit Instructions

### Are you a Supertaster?

<p><b>This kit includes:</b></p> <ul style="list-style-type: none"> <li>● PTC (Phenylthiourea)</li> <li>● Sodium Benzoate</li> <li>● Thiourea</li> <li>● Control Paper (chemical-free)</li> </ul> <p style="padding-left: 20px;">each in a vial of 100 paper test strips</p>	<p>Need more strips?</p> <p>Order online by scanning the QR code ⇒</p> <p style="text-align: center;"><a href="http://www.bartovation.com/super">www.bartovation.com/super</a></p> <div style="text-align: right;">  </div>
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### Background Information:

The taste test strips exhibit a taste due to a dominant allele on chromosome number seven, and the ability to taste these compounds on the PTC strip is present in about 70% of the U.S. population. The ability to taste is due to two different sets of alleles. Receptors on the tongues of humans allow them to taste five major flavors – savory, sour, sweet, salty, and bitter.

Thus, their presence is a result of natural selection both for the plants which produce them and the animal which benefits from the ability to sense them. It is a benefit to be able to detect them and avoid bitter tasting foods, some of which might be harmful if swallowed. Hence, it is a trait selected for in populations evolving in an area which had/has such plants.

Approximately 25% of the American population can taste the compounds on all three strips and nothing on the control. Within this 25%, the supertasters have different levels of sensitivity. If a person can test the substance is determined by their phenotype, which is determined by the genetic genotype. We will denote supertasters with “T” and the recessive non-supertaster gene with “t”. This enables us to make this classification hierarchy:

Classification	Phenotype	Genotype
Normal Taster	Cannot determine the difference between substances or assumes control paper is something else.	__ __
Standard Supertaster	Can taste PTC and determine difference between PTC and control	__ t
Recessive Supertaster	Can taste everything but Sodium Benzoate	tt
Dominant Supertaster	Can taste Sodium Benzoate, Thiourea, and PTC	T __

This kit is designed to determine supertaster status utilizing a control placebo paper to reduce and control for error, increasing the validity of the experiment. The control paper is not treated with chemicals, and therefore can be used to give tasters a baseline for what “no taste” would be.

### **Experiment:**

1. Form groups of five and give every group member a number one thorough 5.
2. To make sure the experiment is blind, please set up a testing sheet (example on last page, which can be cut to separate participant samples), one for each person, with the strips laid out in this order:

	<b>Round 1</b>	<b>Round 2</b>	<b>Round 3</b>	<b>Round 4</b>
<b>Participant 1</b>	PTC	Control	Thiourea	Sodium Benzoate
<b>Participant 2</b>	Thiourea	PTC	Sodium Benzoate	Control
<b>Participant 3</b>	Thiourea	Control	PTC	Sodium Benzoate
<b>Participant 4</b>	Control	Sodium Benzoate	PTC	Thiourea
<b>Participant 5</b>	PTC	Thiourea	Control	Sodium Benzoate

3. Have every participant out the strip on their tongue for five seconds
4. Have them record the taste of the strip in the box they got the strip from
5. Apply their results to the chart in the “background” section to classify them as a taster.

	<b>Round 1</b>	<b>Round 2</b>	<b>Round 3</b>	<b>Round 4</b>
<b>Participant 1</b>	1	2	3	4
<b>Participant 2</b>	1	2	3	4
<b>Participant 3</b>	1	2	3	4
<b>Participant 4</b>	1	2	3	4
<b>Participant 5</b>	1	2	3	4