Report Number: R164

R16441638620001

Personalized Wine



# **Personalized Wine**



Report Date	Feb. 06, 2022	
Name	Min Seob Lee	





Report Number: R16441638620001



Ever have a mild panic attack when you're presented with a mammoth selection of wine? If you are not a wine connoisseur, you probably had an instance or two when you looked up reviews online or sheepishly asked your server for a recommendation. But crowdsourcing wine ratings are like asking a stranger what type of music or art you'd like. It's a complex beverage with thousands of different kinds, and individual preference varies with culture, geography, personality, and genetics. That's right. Genetics. Wine preferences among people vary vastly based on their unique genetic makeup. The same wine can very much taste differently depending on which version of gene they have.



Personalized Wine

# Quiz to find your favorites

- 1. Do you take your coffee black or with cream and sugar?
- 2. Do you enjoy fruity flavors?
- 3. Do you like drinks with a light and airy consistency or ones that are heavier and more full?
- 4. Do you enjoy tartness from citrusy fruits or sour candy?
- 5. Do you prefer milk chocolate or dark chocolate?





Report Number: R16441638620001 Personalized Wine



#### Notable Characteristics of Wine

There are over thousands of different types and flavors, but all wine can be described with 5 basic taste characteristics listed below.

- Acidity: Acidity in food is sour, tart or zesty. In wine, this is attributable to the level of ripeness of the fruit. As grapes ripen, the acidity level goes down. Acidity feels tart, fresh and tingly.
- Body: Body describes the viscosity of the liquid, which is affected by alcohol content. This is like comparing a glass of oil to a glass of water. Light bodied wines tend to lack body and are usually watery and thin with low alcohol content. Medium to Full-bodied wines taste fuller and usually have a higher alcohol level.
- Tannin: Tannin is what adds bitterness to wine. This is from the phenolic compounds in skin and seeds of grapes, and has a tendency to have a drying feeling in your mouth.
- Fruity: Wine is often distinguished by their main fruit or floral flavor.
- Sweetness: Also known as the level of "dryness", the sweet sensation is due to the sugar content in wine. This can be the sweetness of the fruit, the actual sugar content, or the alcohol itself, since alcohol is a sweet liquid.



Light Body	Medium Body	Full Body
► Higher Acidity and (tartness) Less Tannin (bitterness)	<ul> <li>Medium Acidity (tartness)</li> <li>and Tannin (bitterness)</li> </ul>	► Higher Tannin (bitterness) and Slightly Lower Acidity (tartness)
► Lighter Color  ► <12.5% ABV	<ul> <li>Medium colored</li> <li>More viscous than light body</li> <li>Range of wine is diverse</li> </ul>	<ul> <li>Taste lingers longer in the mouth</li> <li>Highly viscous, extracted, darker in color and opaque.</li> </ul>
<ul><li>ex: Pinot Noir,</li><li>Zweigelt, St.Laurent</li></ul>	▶ ex: Merlot, Sangiovese	<ul><li>▶ Generally higher than 13.5% BV</li><li>▶ ex: Cabernet Sauvignon, Malbec</li></ul>

# **Fruity**

Types of white wine known for fruit flavor:

Moscato Sauvignon Blanc Chardonnay **Pinot Grigio** Riseling

Types of **red wine** known for fruit flavor:

**Cabernet Sauvignon** Malbec **Pinot Noir** Merlot Grenache





Report Number: R16441638620001 Personalized Wine

#### Wine and Genes



Understanding these 5 tastes allows you to fine tune your sensory abilities and find favorites easily. It allows you to categorize, distinguish and recognize wine tastes. However, even if you don't speak 'sommelier', your genes got you covered when it comes to finding the best drink for you. Taste preferences are partly genetically determined. While most of us can taste and experience those five characteristics, the degree of liking for those tastes inherently varies individually. Luckily, there are known genetic markers that measure preference for each of those tastes. Your DNA will let you know

Luckily, there are known genetic markers that measure preference for each of those tastes. Your DNA will let you know exactly what type and characteristic of wine your taste buds prefer. With this information, you will never have to guess your favorites or play Russian roulette with wine ever again.

### Understanding your results

Phenotype	Gene	Genotype	Your Result
Acidity	PKD1L3	GG	Moderate sour sensitivity.
	MC4R	СТ	Moderate preference to sour taste.
Alcohol	ALDH2	AG	Moderate sensitivity to alcohol.
	TAS2R38 (1)	CC	Higher bitter sensitivity than other genotypes.
Bitter	TAS2R38 (2)	GG	Higher bitter sensitivity than other genotypes.
Bitter	TAS2R38 (3)	GG	Higher bitter sensitivity than other genotypes.
	TAS2R19	GG	Lower bitter sensitivity than other genotypes.
Fruity	OR5A1	AG	Sensitive to floral note than AA genotype. Less willing to consume the beverage with strong floral note.
	FTO	TT	Lower sweet sensitivity than other genotypes.
Sweet	OR7D4 (1)	-	-
	OR7D4 (2)	-	-
	SLC2A2	GG	Tend to eat typical amount of sugary food.
	TAS1R3 (1)	CC	Moderate sensitive to umami taste.
	TAS1R3 (2)	СТ	Moderate sweet sensitivity.





Report Number: R16441638620001 Personalized Wine

# Your Sensitivity to Five Characteristics

Wine Characteristics	Sensitivity	Result
Acidity	High	Higher sensitivity to sour taste
Body	Typical	Moderate sensitivity to alcohol
Tannin	Typical	Moderate sensitivity to tannin
Fruity	High	Higher sensitivity to floral note
Sweetness	Low	Lower sensitivity to sweet flavor

\* Generally, genetic factors could contribute about 20 - 30% of a trait. Therefore, other factors including environmental factor should be taken into account.

# Myths and Facts



- The shape of wine glass affects the taste.
- Not every wine improves your health. Red wine is far healthier than white wine because the former is fermented with its skin and thus contains far more antioxidants.
- · Wine names usually indicate location or grape varieties.
- Women get drunk faster than men because of their water to fat ratio.
- Drinking a moderate amount of wine regularly will improve sex drive in men, and especially women. Compounds in red wine enhance sexual desire in women by increasing blood flow to erogenous zones.
- Early Roman women were forbidden to drink wine, and a husband who found his wife doing was allowed to kill her, by law.
- A cool dark and dry closet is the best space to store your wine.





Report Number: R16441638620001 Personalized Wine

#### Additional Resources

- http://winefolly.com/review/wine-characteristics/
- http://facts.randomhistory.com/2009/08/21 wine.html
- https://medicalxpress.com/news/2016-06-sweet-tooth-affect-sugar-intake.html

#### Sources

- · Chen, Q. Y., Alarcon, S., Tharp, A., Ahmed, O. M., Estrella, N. L., Greene, T. A., . . . Breslin, P. A. (2009). Perceptual variation in umami taste and polymorphisms in TAS1R taste receptor genes. *The American Journal of Clinical Nutrition*, 90(3), 770S-779S. doi:10.3945/ajcn.2009.27462N
- · Jaeger, S. R., McRae, J. F., Bava, C. M., Beresford, M. K., Hunter, D., Jia, Y., . . . Newcomb, R. D. (2013). A Mendelian trait for olfactory sensitivity affects odor experience and food selection. *Current biology : CB*, *23*(16), 1601-1605. doi:10.1016/j.cub.2013.07.030
- · Kim, U. K., Jorgenson, E., Coon, H., Leppert, M., Risch, N., & Drayna, D. (2003). Positional cloning of the human quantitative trait locus underlying taste sensitivity to phenylthiocarbamide. *Science*, *299*(5610), 1221-1225.
- · Puckette, M., & Hammack, J. (2015). Wine folly. New York, NY: Avery
- · Reed, D. R., Zhu, G., Breslin, P. A., Duke, F. F., Henders, A. K., Campbell, M. J., . . . Wright, M. J. (2010). The perception of quinine taste intensity is associated with common genetic variants in a bitter receptor cluster on chromosome 12. *Human Molecular Genetics*, 19(21), 4278–4285. doi:10.1093/hmg/ddq324
- Yoshida, A., Huang, I. Y., & Ikawa, M. (1984). Molecular abnormality of an inactive aldehyde dehydrogenase variant commonly found in Orientals. *Proceedings of the National Academy of Sciences of the United States of America*, 81(1), 258-261.





Genetic Report Confidential Information

Report Number: R16441638620001 Personalized Wine



The reports from Kiragen are based on standard analysis from Whole genome, Exome, Targeted Sequencing or genotyping data that do not provide any medical advice, diagnosis or treatment. Analyses and reports provided by (Kiragen) are for informational purposes only and are subject to change.

You should consult your physician if you have questions regarding any medical condition. The results and analysis presented in the report have not been clinically validated. Any report from Kiragen have not been cleared or approved by the FDA or similar government institutions.

Whole genome sequencing covers minimum 95% of your entire genome with an accuracy greater than 99.9% with 30X of genomics sequencing depth. The sequencing process is a minimum of 24X depth of data to assure the quality of the data and result. Exome sequencing roughly covers only 2-4% of your genome, mostly areas that are well known from a genetics perspective, with an average of 100X sequencing depth.

We welcome your feedback.

Please email mklee@kiragen.com with comments or suggestions.



