



CALIFORNIA
TABLE GRAPE
COMMISSION

392 W. Fallbrook Avenue
Suite 101
Fresno, California
93711-6150
Phone: 559-447-8350
Fax: 559-447-9184
grapesfromcalifornia.com

Guidelines for Use of California Table Grape Powder in Health Research Studies

Background on the Freeze-Dried Whole Table Grape Powder

The grape powder provided by the California Table Grape Commission (commission) is made from whole California grapes; it is not an extract.

Any results observed in clinical studies using grape powder should be directly attributed to grape consumption. The grapes have been provided in freeze-dried, powdered form. The powder is not made available for commercial use or sale. It was created solely for the purpose of providing researchers with access to California grapes year-round to ensure solid, reproducible data.

The freeze-dried table grape powder is made from a composite of fresh red, green, and black California grapes, based on actual consumption patterns of consumers. It is a mix of seeded and seedless varieties that have been frozen, ground with food-quality dry ice, freeze-dried, and re-ground using Good Manufacturing Practices for food products throughout. A small amount of silica (1% by weight) is used as a flow agent. The powder was processed and stored to preserve the integrity of the biologically active compounds found in fresh grapes. As with fresh grapes, the powder is known to contain polyphenols, including resveratrol, flavans (including catechin), flavonols (including quercetin), anthocyanins, and simple phenolics.

A 3/4 cup serving of fresh grapes (126g) is equivalent to 23 g of the commission freeze-dried whole table grape powder.

Table Grape Powder Use in Human Clinical Studies

In human studies, the grape powder should be mixed with water, and then consumed all at once as a drink. The following protocol (Appendix A) suggests 6 oz. of water to 46 g of powder, but the amount of water may be adapted to subject's tolerance level, as long as the full dose of grape powder is consumed within 30 minutes. Please note that the powder does not dissolve completely as it is made from whole grapes. When mixed with water it creates a suspension, not a solution.

The table grape powder will be packaged in vacuum-sealed pouches according to the dose approved for the study. The table grape powder is very hygroscopic, so must be protected from moisture and water until reconstituted. Subjects should keep their powder pouches stored in the freezer at all times.

A table grape powder placebo is available for use in control diets.

Recommended dosage range for human studies: between 46 g – 115 g per day (to provide between 1.5 to 3.75 cups of grapes per day).

Table Grape Extract Available for Use in Cell Studies

The commission will provide the grape powder extract needed for funded proposals conducting *in vitro* work.

Appendix A
Suggested Dosing Protocol for Grape Powder – 46 g Dose*

Important Information

- Material should be stored in moisture impermeable packaging at -70 C until weighing.
- Hygroscopic material: protect from water until reconstituted.
- Dose subject within 30 minutes of reconstitution.
- Re-shake material just prior to dosing. The mixture creates a suspension, not a solution.

Purpose

To disperse 46 g of grape powder in 180 mL (6 fl. oz.) of water. *A larger dose may require more water.

Equipment

- Ziploc Snap ‘n Seal XS container (1 cup) or equivalent. For subjects consuming at home, a glass may be used.
- Volumetric measuring device.
- Water (for reconstitution and rinse).

Procedure

Step	Instructions	Signature/Date
1.	Pour approximately 180 mL (6 fl. oz.) of water into container/glass.	
2.	Open powder pouch and pour into water. Record weight of powder and time of reconstitution. Weight of Powder _____g Time of Reconstitution _____	
3.	If using a jar, close lid tightly and shake for a minimum of 30 seconds. If using a glass, stir for a minimum of 30 seconds.	
4.	Visually confirm that no un-wetted powder remains. Continue shaking or stirring if needed.	
5.	Just prior to subject consuming it, shake/stir material for a minimum of 30 seconds.	
6.	Subject consumes reconstituted table grape powder. Note: must be dosed within 30 minutes of reconstitution. Time of Dosing _____	
7.	Rinse container with at least 30 mL (1 fl. oz.) of water.	
8.	Subject consumes rinse water.	