

## **Cancer and Lemon Grass**

Fresh Lemon Grass Drink Causes Apoptosis to Cancer Cells (*apoptosis*) *noun: a type of cell death in which the cell uses specialized cellular machinery to kill itself; a cell suicide mechanism that enables metazoans to control cell number and eliminate cells that threaten the animal's survival.*

*In other words, cell commits suicide.*

*A drink with as little as one gram of lemon grass contains enough citral to prompt cancer cells to commit suicide in the test tube.*

### **Israeli researchers find way to make cancer cells self-destruct Ben Gurion University**

It all began when researchers at Ben Gurion University of the Negev discovered last year that the lemon aroma in herbs like lemon grass kills cancer cells in vitro, while leaving healthy cells unharmed. The research team was led by Dr. Rivka Ofir and Prof. Yakov Weinstein, incumbent of the Albert Katz Chair in Cell-Differentiation and Malignant Diseases, from the Department of Microbiology and Immunology at BGU.

Citral is the key component that gives the lemony aroma and taste in several herbal plants such as lemon grass (*Cymbopogon citratus*), Melissa (*Melissa officinalis*) and verbena (*Verbena officinalis*.)

According to Ofir, the study found that citral causes cancer cells to ‘commit suicide: using apoptosis, a mechanism called programmed cell death.’ A drink with as little as one gram of lemon grass contains enough citral to prompt the cancer cells to commit suicide in the test tube.

The BGU investigators checked the influence of Citral on cancerous cells by adding them to both cancerous cells and normal cells that were grown in a petri dish. The quantity added in the concentrate was equivalent to the amount contained in a cup of regular tea using one gram of lemon herbs in hot water. While the citral killed the cancerous cells, the normal cells remained unharmed.

The findings were published in the scientific journal *Planta Medica*, which

highlights research on alternative and herbal remedies. Shortly afterwards, the discovery was featured in the popular Israeli press.

Why does it work? Nobody knows for certain, but the BGU scientists have a theory. ‘In each cell in our body, there is a genetic program which causes programmed cell death. When something goes wrong, the cells divide with no control and become cancer cells. In normal cells, when the cell discovers that the control system is not operating correctly - for example, when it recognizes that a cell contains faulty genetic material following cell division - it triggers cell death,’ explains Weinstein.

‘This research may explain the medical benefit of these herbs.’

The success of their research led them to the conclusion that herbs containing citral may be consumed as a preventative measure against certain cancerous cells. As they learned of the BGU findings in the press, many physicians in Israel began to believe that while the research certainly needed to be explored further, in the meantime it would be advisable for their patients, who were looking for any possible tool to fight their condition, to try to harness the cancer-destroying properties of citral.

*Share this Chart with everyone*

Apples	Protects your heart	prevents constipation	Blocks diarrhea	Improves lung capacity	Cushions joints
Apricots	Combats cancer	Controls blood pressure	Saves your eyesight	Shields against Alzheimer's	Slows aging process
Artichokes	Aids digestion	Lowers cholesterol	Protects your heart	Stabilizes blood sugar	Guards against liver disease
Avocados	Battles diabetes	Lowers cholesterol	Helps stops strokes	Controls blood pressure	Smooths skin
Bananas	Protects your heart	Quiets a cough	Strengthens bones	Controls blood pressure	Blocks diarrhea
Beans	Prevents constipation	Helps hemorrhoids	Lowers cholesterol	Combats cancer	Stabilizes blood sugar
Beets	Controls blood pressure	Combats cancer	Strengthens bones	Protects your heart	Aids weight loss

<b>Blueberries</b>	Combats cancer	Protects your heart	Stabilizes blood sugar	Boosts memory	Prevents constipation
<b>Broccoli</b>	Strengthens bones	Saves eyesight	Combats cancer	Protects your heart	Controls blood pressure
<b>Cabbage</b>	Combats cancer	Prevents constipation	Promotes weight loss	Protects your heart	Helps hemorrhoids
<b>Cantaloupe</b>	Saves eyesight	Controls blood pressure	Lowers cholesterol	Combats cancer	Supports immune system
<b>Carrots</b>	Saves eyesight	Protects your heart	Prevents constipation	Combats cancer	Promotes weight loss
<b>Cauliflower</b>	Protects against Prostate Cancer	Combats Breast Cancer	Strengthens bones	Banishes bruises	Guards against heart disease
<b>Cherries</b>	Protects your heart	Combats Cancer	Ends insomnia	Slows aging process	Shields against Alzheimer's
<b>Chestnuts</b>	Promotes weight loss	Protects your heart	Lowers cholesterol	Combats Cancer	Controls blood pressure
<b>Chili peppers</b>	Aids digestion	Soothes sore throat	Clears sinuses	Combats Cancer	Boosts immune system
<b>Figs</b>	Promotes weight loss	Helps stops strokes	Lowers cholesterol	Combats Cancer	Controls blood pressure
<b>Fish</b>	Protects your heart	Boosts memory	Protects your heart	Combats Cancer	Supports immune system
<b>Flax</b>	Aids digestion	Battles diabetes	Protects your heart	Improves mental health	Boosts immune system
<b>Garlic</b>	Lowers cholesterol	Controls blood pressure	Combats cancer	kills bacteria	Fights fungus
<b>Grapefruit</b>	Protects against heart attacks	Promotes Weight loss	Helps stops strokes	Combats Prostate Cancer	Lowers cholesterol
<b>Grapes</b>	saves eyesight	Conquers kidney stones	Combats cancer	Enhances blood flow	Protects your heart
<b>Green tea</b>	Combats cancer	Protects your heart	Helps stops strokes	Promotes Weight loss	Kills bacteria
<b>Honey</b>	Heals wounds	Aids digestion	Guards against ulcers	Increases energy	Fights allergies
<b>Lemons</b>	Combats cancer	Protects your heart	Controls blood pressure	Smoothes skin	Stops scurvy
<b>Limes</b>	Combats cancer	Protects your heart	Controls blood pressure	Smoothes skin	Stops scurvy
<b>Mangoes</b>	Combats cancer	Boosts memory	Regulates thyroid	aids digestion	Shields against Alzheimer's

Mushrooms	Controls blood pressure	Lowers cholesterol	Kills bacteria	Combats cancer	Strengthens bones
Oats	Lowers cholesterol	Combats cancer	Battles diabetes	prevents constipation	Smoothes skin
Olive oil	Protects your heart	Promotes Weight loss	Combats cancer	Battles diabetes	Smoothes skin
Onions	Reduce risk of heart attack	Combats cancer	Kills bacteria	Lowers cholesterol	Fights fungus
Oranges	Supports immune systems	Combats cancer	Protects your heart	Straightens respiration	
Peaches	prevents constipation	Combats cancer	Helps stops strokes	aids digestion	Helps hemorrhoids
Peanuts	Protects against heart disease	Promotes Weight loss	Combats Prostate Cancer	Lowers cholesterol	Aggravates Diverticulitis
Pineapple	Strengthens bones	Relieves colds	Aids digestion	Dissolves warts	Blocks diarrhea
Prunes	Slows aging process	prevents constipation	boosts memory	Lowers cholesterol	Protects against heart disease
Rice	Protects your heart	Battles diabetes	Conquers kidney stones	Combats cancer	Helps stops strokes
Strawberries	Combats cancer	Protects your heart	boosts memory	Calms stress	
Sweet potatoes	Saves your eyesight	Lifts mood	Combats cancer	Strengthens bones	
Tomatoes	Protects prostate	Combats cancer	Lowers cholesterol	Protects your heart	
Walnuts	Lowers cholesterol	Combats cancer	boosts memory	Lifts mood	Protects against heart disease
Water	Promotes Weight loss	Combats cancer	Conquers kidney stones	Smoothes skin	
Watermelon	Protects prostate	Promotes Weight loss	Lowers cholesterol	Helps stops strokes	Controls blood pressure
Wheat germ	Combats Colon Cancer	prevents constipation	Lowers cholesterol	Helps stops strokes	improves digestion
Wheat bran	Combats Colon Cancer	prevents constipation	Lowers cholesterol	Helps stops strokes	improves digestion
Yogurt	Guards against ulcers	Strengthens bones	Lowers cholesterol	Supports immune systems	Aids digestion