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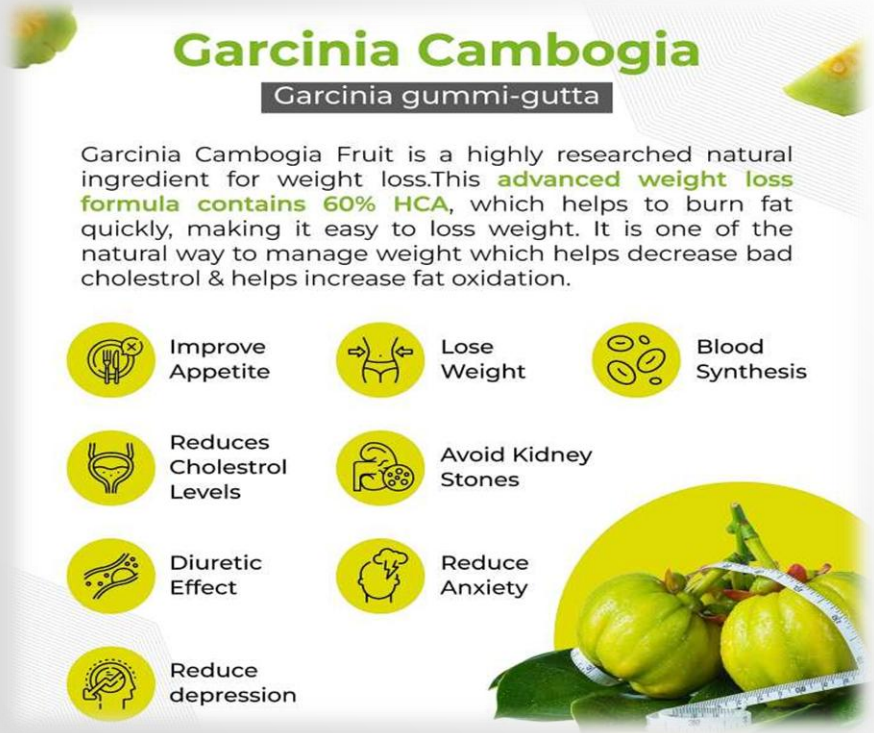
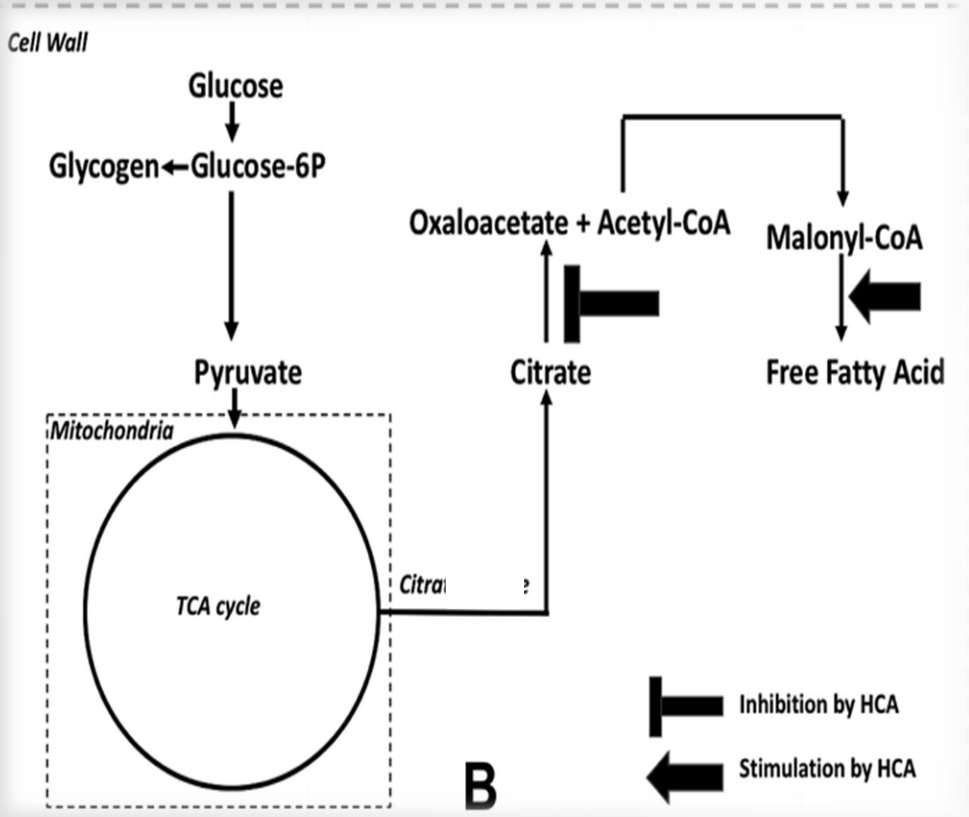
Garcinia cambogia

- **Garcinia Cambogia** is a tropical fruit commonly used as a supplement, particularly for weight loss.
- Commonly known as Garcinia, Malabar tamarind, Vilayati imli containing biomarker **(HCA)** extractable – **Hydroxycitic Acid**..
- The tree **flowers** during the **hot season**, and **fruits ripen** during the **rainy season**.



- G. cambogia fruit is dried by a conventional sun drying method.
- The active ingredient in Garcinia cambogia is **hydroxycitric acid (HCA)**, which is believed to have potential weight-loss benefits.
- **Uses of HCA – Fat Blocker , Appetite Suppression, Improved Exercise Performance, Blood Sugar Regulation.**

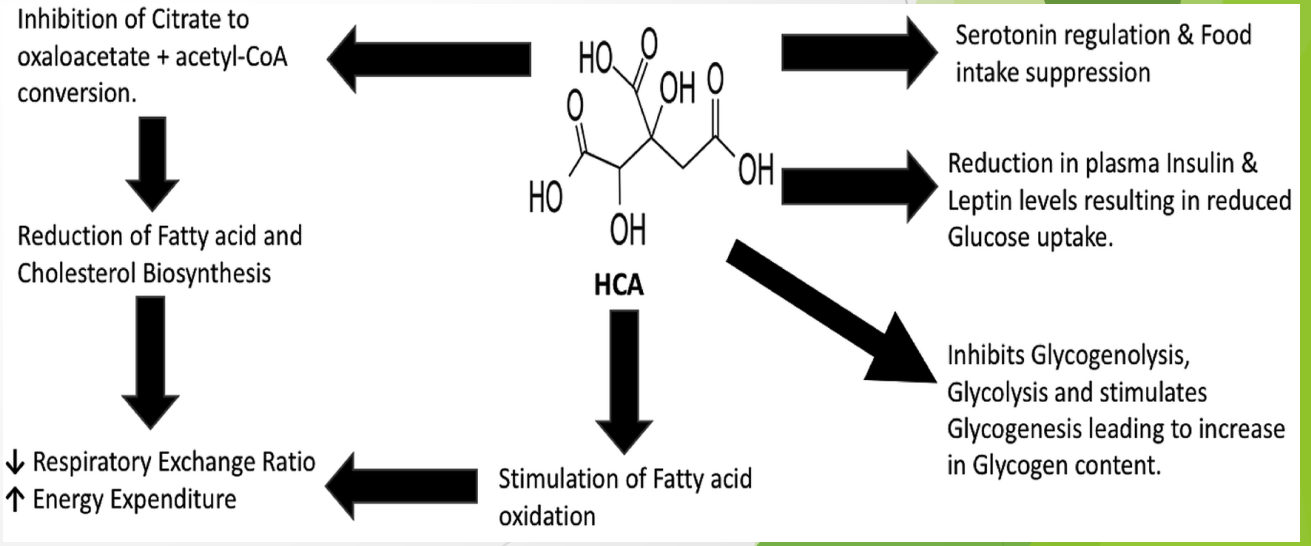
❖ Mechanism of Action



Highlights two reactions which have been perturbed in the metabolic pathway model to simulate the anti-obesity effect of HCA. Firstly, inhibition of citrate → oxaloacetate + acetyl-CoA. Secondly, activation of malonyl-CoA → free fatty acid.

HCA works by blocking fat production, reducing appetite, increasing fat burning, and potentially improving insulin sensitivity. However, the exact impact can vary,

- **Appetite suppression:** HCA increase serotonin levels in the brain, which may help reduce appetite and cravings, especially for carbohydrates.
- **Inhibition of fat production:** Inhibit an enzyme called **citrate lyase**. By blocking this enzyme, reduces fat accumulation in the body.
- **Increased fat oxidation:** HCA may help the body burn fat more efficiently by increasing fat oxidation.



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❖ Dosage forms

- **Capsules/Tablets**: Taken in standardized doses, usually ranging from 500 mg to 1,000 mg per serving.
- **Soft gels**: Similar to capsules, soft gels contain the active ingredient in a gel form and are easy to swallow
- **Powder**: Some supplements come as Garcinia cambogia powder, which can be mixed with water or smoothies. The dosage can vary depending on the concentration.
- **Liquid Extracts**: Garcinia cambogia is sometimes available in liquid form, typically in concentrated extracts that are taken with water or added to drinks.

❖ Konark can provide

Hydroxycitric acid (HCA)	Percentage	Method
HCA	50% - 60%	HPLC
Water soluble	50% - 60%	HPLC

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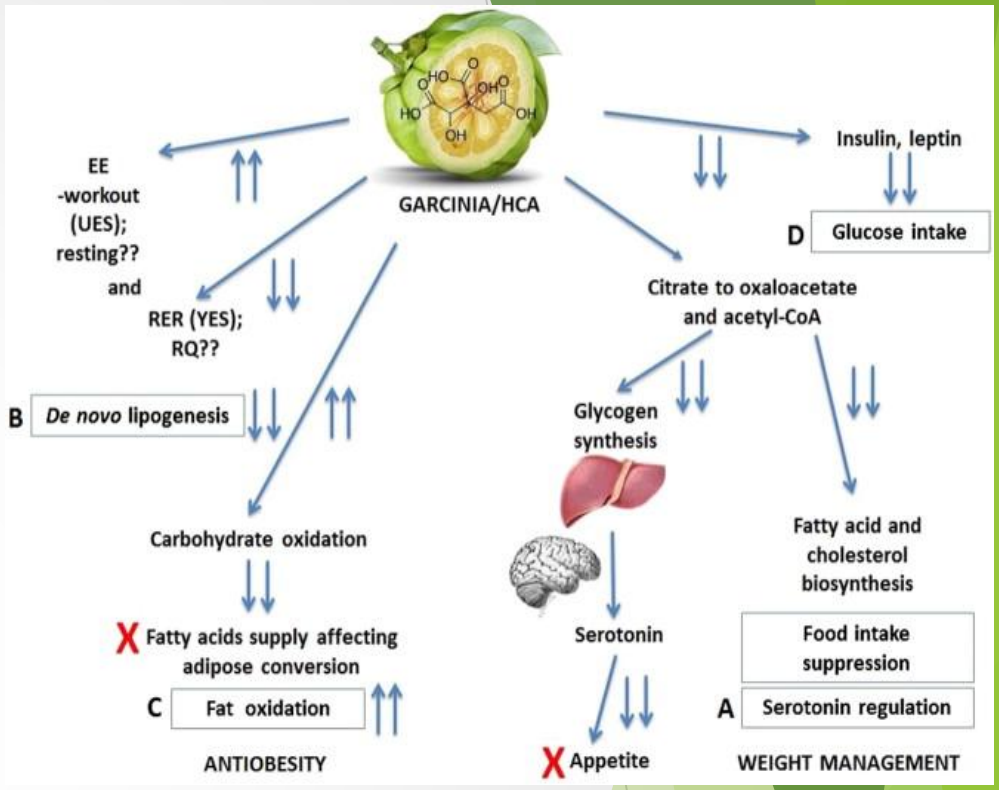
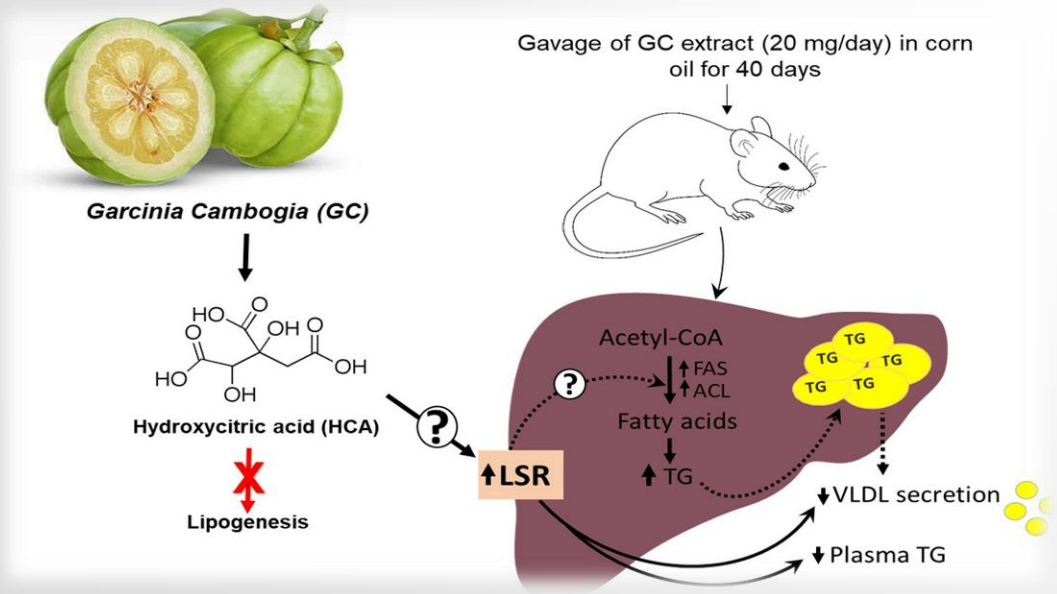
❖ Analysis

The analysis of **Garcinia cambogia** (or its active compound, **hydroxycitric acid (HCA)**) typically involves a variety of **chemical and biochemical methods** to determine its composition, purity, and potency.

- **HPLC** is the most common and reliable method used to analyze the concentration of **hydroxycitric acid (HCA)** in Garcinia cambogia products, while GC-MS, LC-MS, and spectrophotometric techniques are also valuable for detecting and quantifying active compounds, identifying contaminants, and ensuring product quality.

- Depending on the focus of the analysis methods is chosen.





❖ Studies on Garcinia

A randomized controlled trial in *Obesity Research* (2004)

Showed that participants who took Garcinia cambogia with HCA lost more weight compared to those on a placebo, but the weight loss was modest (around 2 pounds over 12 weeks).While there was some effect, it was not drastic or long-term, leading researchers to question the clinical significance.

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❖ Other Studies on Garcinia

- **Research published in *The Journal of Lipid Research* (1998)**

Showed that HCA inhibited **citrate lyase**, the enzyme involved in converting carbohydrates into fat. The inhibition of this enzyme suggests that HCA could reduce fat accumulation, but the real-world impact on fat loss in humans is still unclear.

- **Updates on Anti-obesity Effect of *Garcinia* Origin HCA**

Garcinia is a plant under the family of Clusiaceae that is commonly used as a flavouring agent. Various phytochemicals including flavonoids and organic acid have been identified in this plant. Among all types of organic acids, hydroxycitric acid or more specifically (−)-hydroxycitric acid has been identified as a potential supplement for weight management and as anti-obesity agent.

- **Evaluation of antioxidant activity in clinical trials and in vivo animal studies using Garcina**

Journal of Applied Pharmaceutical Science Vol. 10(12), pp 114-129, December, 2020
study aimed to systematically evaluate scientific evidence of mangosteen antioxidant activity on animal models and clinical trials regarding its role in improving oxidant-related diseases. Results showed that the administration of either mangosteen extract, isolated compound, or commercialized product was able to increase antioxidant enzymes such as superoxide dismutase, catalase, and glutathione peroxidase, as well as reduce oxidative stress markers .

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Reference:

1. https://doi.org/10.1016/j.ctim.2020.102451
2. https://www.webmd.com/vitamins-and-supplements/garcinia-cambogia-weight-loss
3. https://pmc.ncbi.nlm.nih.gov/articles/PMC3010674/
4. https://jamanetwork.com/journals/jama/fullarticle/188147
5. https://pmc.ncbi.nlm.nih.gov/articles/PMC4053034/
6. https://pubmed.ncbi.nlm.nih.gov/9820262/
7. https://onlinelibrary.wiley.com/doi/abs/10.1002/ptr.689
8. https://japsonline.com/abstract.php?article_id=3250&sts=2