



Tea polyphenols (EGCG)

Natural Products
Healthy Life

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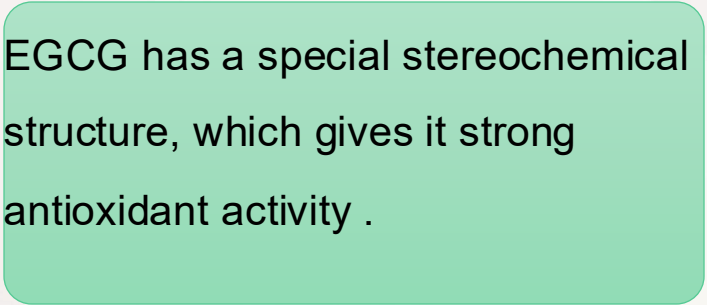
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1. Overview of Tea Polyphenols

Polyphenols (TP)

- Tea polyphenols is the general term for polyphenols in tea . They generally have a slight tea aroma and an astringent taste. They are easily soluble in water and can be dissolved in ethanol and methanol.
- Green tea has the highest content of tea polyphenols, of which catechins account for 60%-80% of tea polyphenols , and epigallocatechin gallate (EGCG) is its main active ingredient.
- Tea polyphenols have many active functions such as antioxidant, anti-cancer, lipid-lowering and blood sugar-lowering , antibacterial, antiviral, anti-radiation, anti-caries, and immunity enhancement .
- In 2015 , the total sales volume of tea polyphenols in China was more than 3,000 tons, with a compound annual growth rate of 6.2% . It is estimated that the market size will reach over US\$500 million in 2027 .





2.Safety and health benefits of EGCG



ELSEVIER

Regulatory Toxicology and Pharmacology

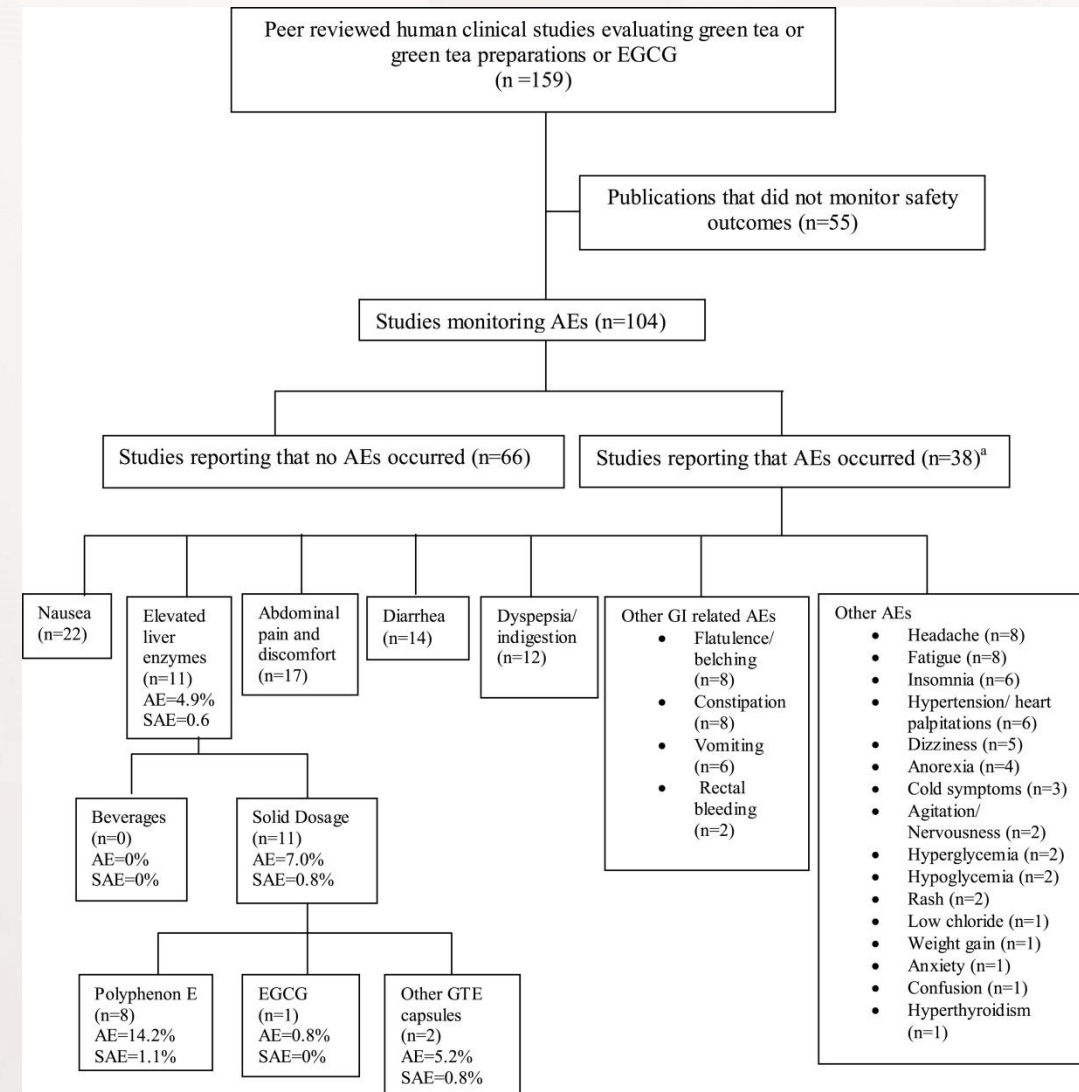
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The safety of green tea and green tea extract consumption in adults – Results of a systematic review

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104 human intervention studies published as of 2018 , and the results showed that a daily intake of **338 mg** of EGCG for adults is a safe level, which can be increased to 704 mg in the form of beverages .



3. EGCG safety and domestic and international laws and regulations



Effect	
Antioxidant	It achieves its antioxidant effect by scavenging free radicals, increasing the activity of antioxidant enzymes, complexing metal ions that induce oxidation, and promoting the regeneration of antioxidants in the body. (<i>Food Science and Food Safety</i> , 17,3,732-753)
Weight control	By enhancing the oxidation of fatty acids in the liver, it inhibits the desire to eat; by inhibiting gastrointestinal digestive enzymes and forming complexes with specific transport factors on the brush border of intestinal cells, it inhibits the absorption of gastrointestinal nutrients; by inhibiting fat synthesis-related enzymes, regulate the body's fat and energy metabolism, increase the body's energy consumption, and achieve the effect of losing weight and reducing fat. (<i>Journal of Medicinal Food</i> ,22,8,753-770)
Anti-tumor	It can effectively inhibit the proliferation of cancer cells and induce their apoptosis, and it can also play a synergistic role when combined with chemotherapy drugs . (<i>Biochemical pharmacology</i> , 82,12,1807-1821)
Improve immunity	By removing free radicals in the body, inducing a variety of cytokines, activating macrophages, NK cells and T and B lymphocytes, and increasing the level of immunoglobulins in the body. (<i>Trends in Food Science & Technology</i> ,114,11-24)
Cardiovascular protection	through multiple pathways such as anti-oxidation, anti-inflammation, and lipid-lowering, including diseases such as atherosclerosis, cardiac hypertrophy, and myocardial infarction . (<i>Journal of Ethnopharmacology</i> ,201,296-310)
Neuroprotection	It can inhibit cell apoptosis by reducing cellular reactive oxygen species and regulating the expression of apoptosis signaling molecules, thereby protecting the nervous system. (<i>Phytomedicine</i> ,79,153316)
Lowers blood pressure	It regulates nitric oxide (NO) concentration, inhibits angiotensin II activity, affects lipid metabolism and regulates the expression of reactive oxygen species (ROS) in the body, thereby lowering blood pressure. (<i>Tea Newsletter</i> . 2022(002):049.)

3. EGCG safety and domestic and international laws and regulations

In March 2018, EFSA issued a scientific opinion on the safety of green tea catechins, which stated that
If the daily EGCG intake is greater than or equal to **800 mg** , it will cause an increase in serum
transaminase and cause liver damage .

Region/Coun try	Limited	use	Sources
China	EGCG \leq 300 mg/d	New food ingredients	Ministry of Health No. 17 of 2010
	Maximum dosage: 0.1-0.8 g/kg (calculated as catechins)	food additives	GB 1886.211-2016 National Food Safety Standard Food Additive Tea Polyphenols (also known as Vitamin D)
European Union	EGCG \leq 800 mg/d	Food ingredients	EFSA publishes scientific opinion on safety of green tea catechins
Canada	-	Food supplement ingredients	NOP/ADPSI-001
Japan	-	Food raw materials, food additives, functional food raw materials	-



4.Product Information

- **Raw material origin**

Skyherb raw materials are selected from tea raw material cooperation bases in Zhejiang, Yunnan, Sichuan and other places, and are high-quality tea raw materials from golden planting areas with high altitude, low pests and no pollution.

- **Main Specifications**

Tea polyphenols 95% EGCG 50 %
Tea polyphenols 95% EGCG 45 %
Tea polyphenols 50%, tea polyphenols 95%,
EGCG ≥ 94%, EGCG ≥ 95 % etc.

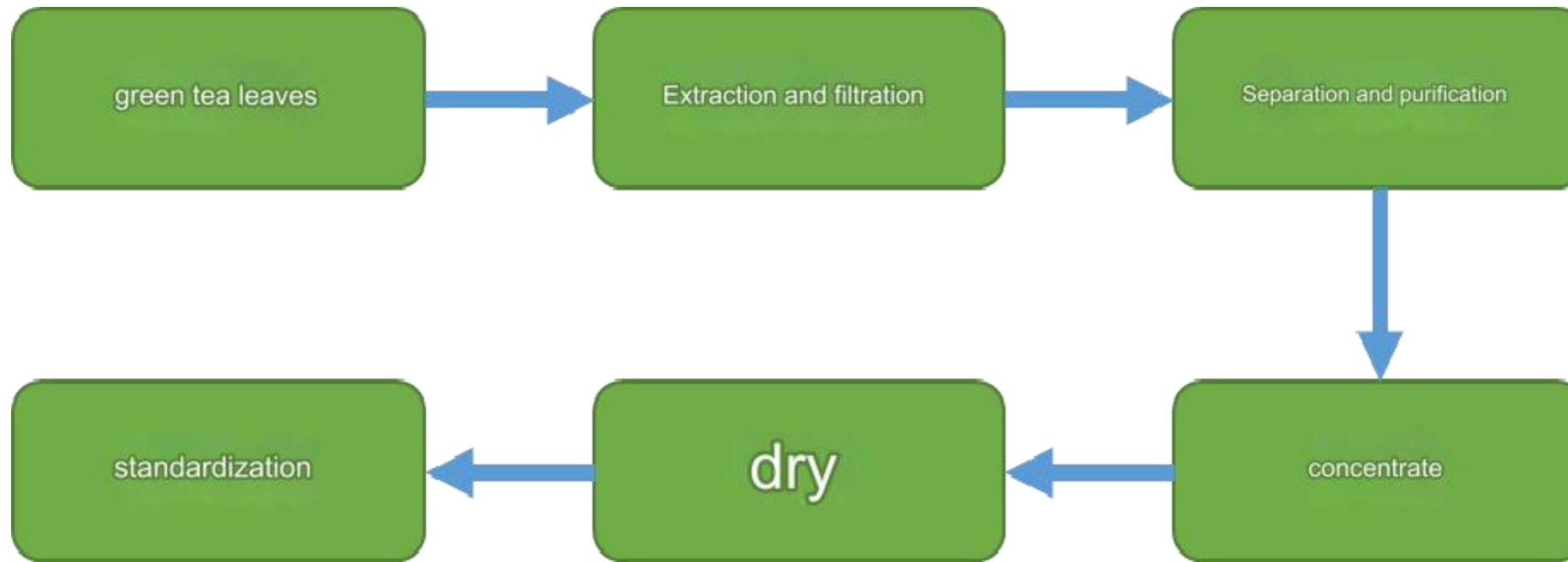
Customizable specifications.

EGCG≥95 % COA

Product Name	Epigallocatechin gallate	Product number	5039325
Latin Name	Camellia sinensis O.Ktze.	Extraction site	Leaf
Implementation standards	Q/SKY0041S		
Testing Items	Testing Standards	Methods	
Appearance*	Off-white to light pink solid powder,with unique smell and taste of this product,no visibleforeign matters	Sensory Test	
Loss on drying	≤5.0%	GB5009.3	
Epigallocatechin gallate(dry basis)	≥95.0%	SOP-QC ₁ -147	
Caffeine	≤0.1%	SOP-QC ₁ -147	
Microbiological Specifications			
Total Aerobic(CFU/g)	n=5,c=2,m=10 ³ ,M=5*10 ⁴	GB4789.2	
Mold and Yeast(CFU/g)	≤50	GB4789.15	
Coliform (MPN/g)	n=5,c=2,m=10,M=10 ²	GB4789.3	
Salmonella*(CFU/g)	N=5,c=0,m=0	GB4789.4	
Staphylococcusaureus*(CFU/g)	n=5,c=1,m=100,M=1000	GB4789.10 (2 nd)	
Shelf life	24 months		
Storage condition	Store in tightly closed plastic bag and keep in a cool dry place. Keep away from strong direct light.		
Package	The inner packaging is a double-layer sealed PE bag,and the outer packaging is a full-paper barrel, 25KG/barrel		
Statements	Non-Irradiated, Non-GMO		

4.Product Information

Process route

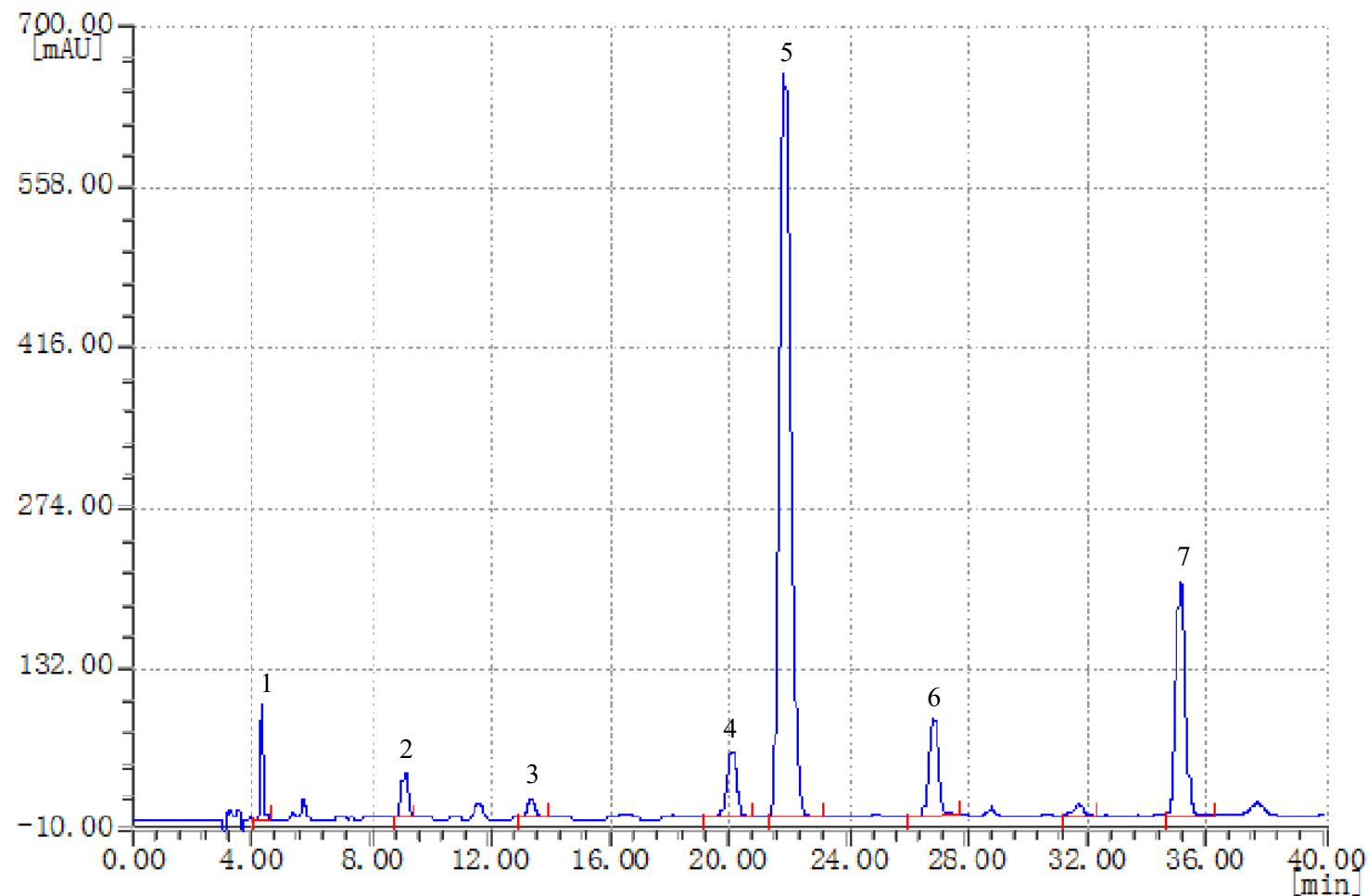


Skyherb products strictly follow domestic and international regulations and standards, and strictly control product specifications, heavy metal residues, solvent residues and microorganisms .

To ensure product quality and safety.

4.Product Information

Green tea extract profile characteristics



Peak 1 : Gallic acid (GA); Peak 2 : Epigallocatechin (EGC)

Peak 3 : Caffeine (CAF); Peak 4 : Epicatechin (EC)

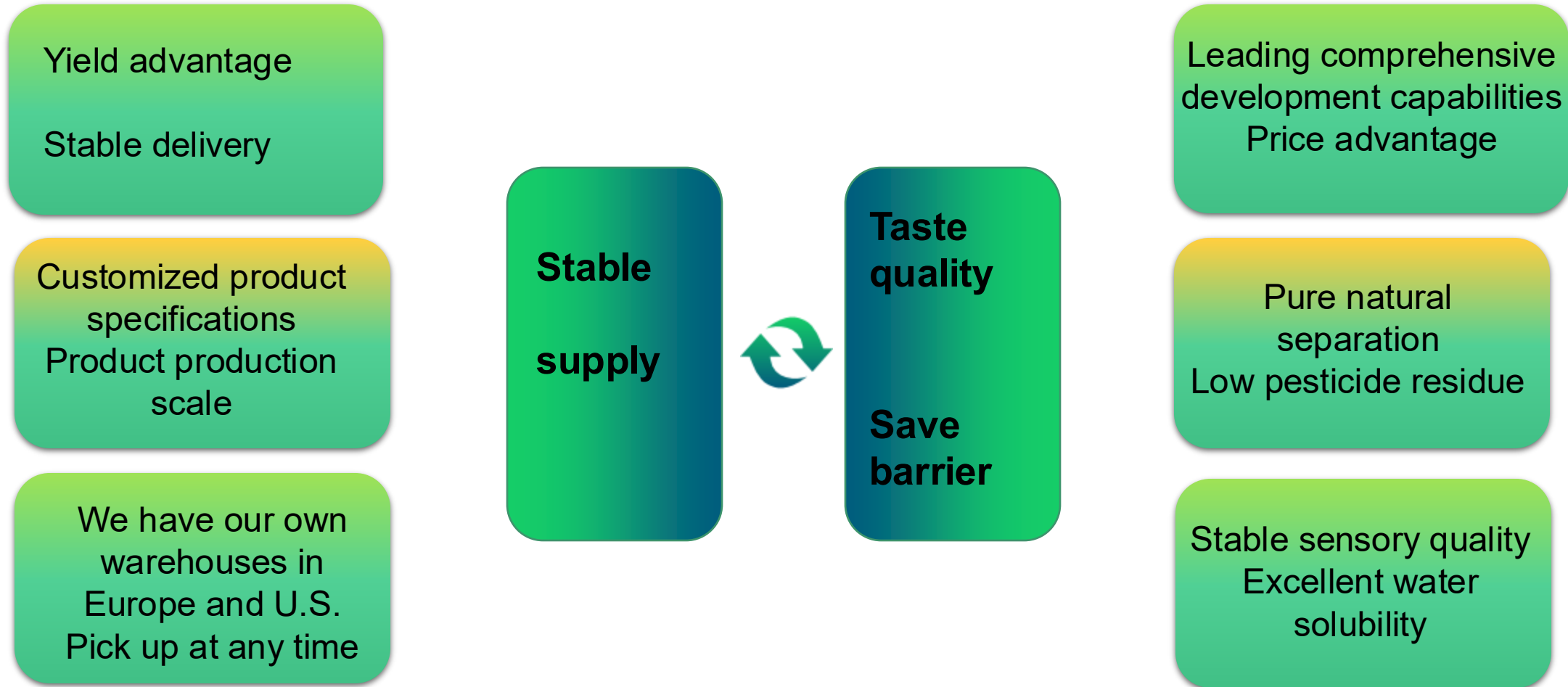
Peak 5 : epigallocatechin gallate (EGCG)

Peak 6 : epigallocatechin gallate (GCG)

Peak 7 : Epicatechin gallate (ECG)

5.Skyherb product advantages

Skyherb®



6.Application Cases

Tea polyphenols are mainly used in capsules, liquid beverages, solid beverages, cosmetics and other fields. Their main functions are fat reduction, anti-oxidation, etc.



Product Name	Nature's Answer, Super Green Tea, Alcohol-Free
Main Ingredients	Green Tea (<i>Camellia sinensis</i>) Leaf Extract (95% polyphenols, 80% catechins and 50% EGCG), Lemon (<i>Citrus limon</i>) Peel Extract
Effect	Fat loss, anti-oxidation

Product Name	Life Extension, Mega Green Tea Extract
Main Ingredients	98% polyphenols, EGCG, vegetable cellulose (capsule), stearic acid, rice flour, silicon dioxide
Effect	Helps with cardiovascular and cognitive function, antioxidants, cholesterol management



6.Application Cases

Skyherb®



元气森林 出品

净含量: 500mL

配料

水、桑叶提取物、苦瓜粉、表没食子儿茶素没食子酸酯、碳酸氢钠、食用香精

营养成分表

项目	每100mL	NRV%
能量	0kJ	0%
蛋白质	0g	0%
脂肪	0g	0%
碳水化合物	0g	0%
—糖	0g	0%
钠	6mg	0%

Product Name

Yuan Qi Sen Lin Mulberry Leaf Tea

Main Ingredients

Mulberry leaf extract, bitter melon powder, EGCG, etc.

Effect

Fat reduction

Product Name

Renlux sugar-free energy drink

Main Ingredients

Green tea concentrate powder, guarana extract, ginger concentrate powder

Effect

Reduce fat, provide energy



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