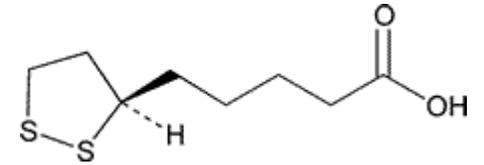


ALPHA LIPOIC ACID

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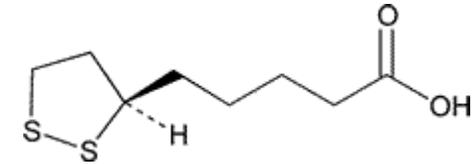
Lipoic acid, also known as α -lipoic acid and alpha lipoic acid and thioctic acid is an organo-sulfur compound derived from caprylic acid. ALA is made in animals normally, and is essential for aerobic metabolism - Formula: $C_8H_{14}O_2S_2$

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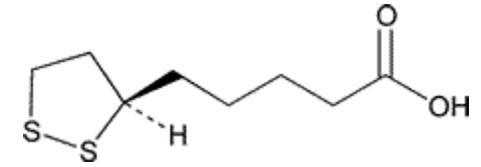
Alpha-lipoic acid supplements may enhance the body's ability to use its own insulin to lower blood sugar in people with type 2 diabetes. ALA may help reduce the symptoms of peripheral neuropathy -- nerve damage that can be caused by diabetes.

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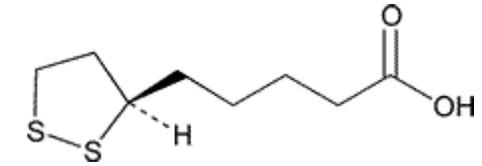
The antioxidant properties of alpha-lipoic acid have been linked to benefits like lower blood sugar levels, reduced inflammation, slowed skin aging and improved nerve function. Humans only produce alpha-lipoic acid in small amounts. That's why many turn to certain foods or supplements to optimize their intake.

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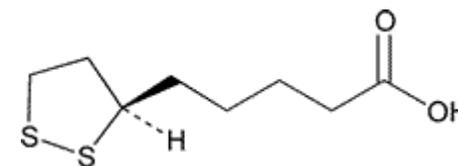
Alpha Lipoic Acid is derived from leaves of Neem by in-vacuum fractionation of the amphiphilic components of the photosynthetic processes of the Neem Leaves

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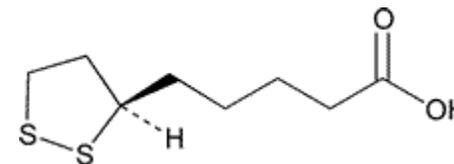
Alpha Lipoic Acid Market size was more than USD 11 million in 2016 and will witness over 6% growth during the projected timespan.

ALPHA LIPOIC ACID

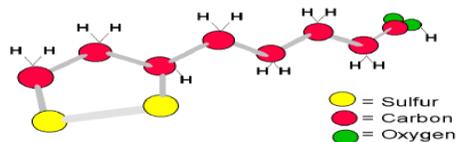
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BOTANICAL SOURCE INFORMATION - ALPHA LIPOIC ACID



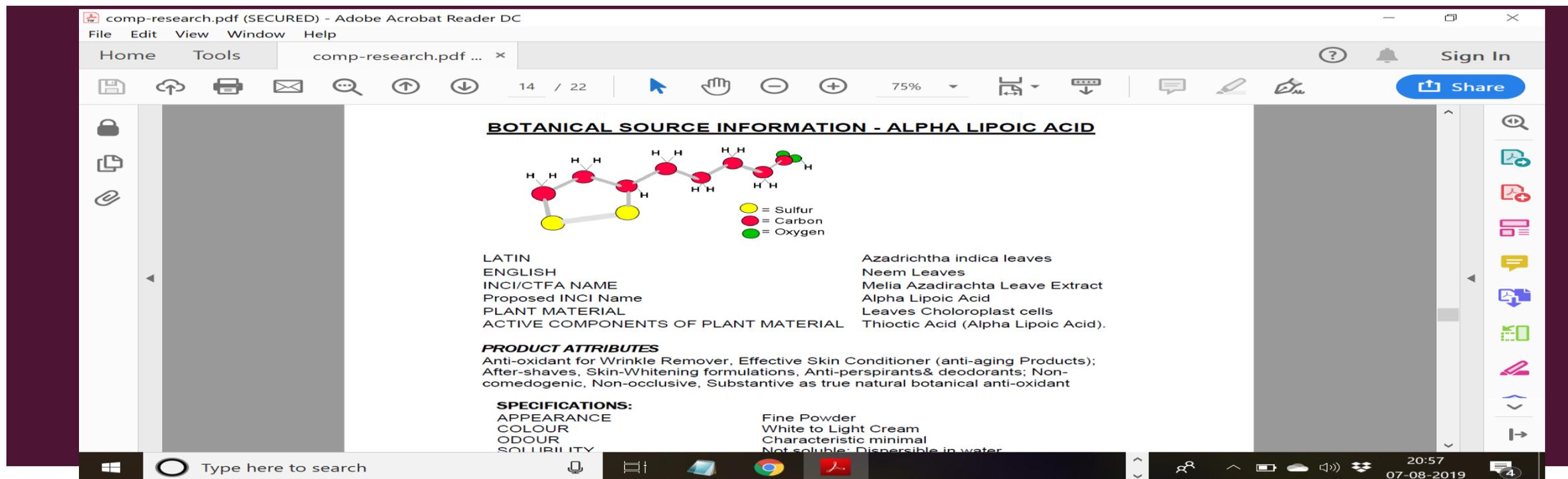
LATIN	Azadirachta indica leaves
ENGLISH	Neem Leaves
INCI/CTFA NAME	Melia Azadirachta Leave Extract
Proposed INCI Name	Alpha Lipoic Acid
PLANT MATERIAL	Leaves Chloroplast cells
ACTIVE COMPONENTS OF PLANT MATERIAL	Thioctic Acid (Alpha Lipoic Acid).

PRODUCT ATTRIBUTES

Anti-oxidant for Wrinkle Remover, Effective Skin Conditioner (anti-aging Products); After-shaves, Skin-Whitening formulations, Anti-perspirants & deodorants; Non-comedogenic, Non-occlusive, Substantive as true natural botanical anti-oxidant

SPECIFICATIONS:

APPEARANCE	Fine Powder
COLOUR	White to Light Cream
ODOUR	Characteristic minimal
SOLUBILITY	Not soluble; Dispersible in water



The screenshot shows a PDF document titled "comp-research.pdf (SECURED) - Adobe Acrobat Reader DC". The document content includes the following sections:

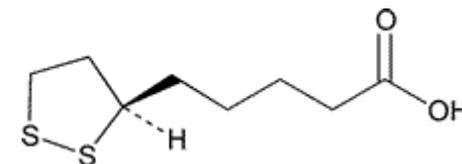
- BOTANICAL SOURCE INFORMATION - ALPHA LIPOIC ACID**
- A ball-and-stick model of the chemical structure of Alpha Lipoic Acid with a legend: Yellow = Sulfur, Red = Carbon, Green = Oxygen.
- LATIN**: Azadirachta indica leaves
- ENGLISH**: Neem Leaves
- INCI/CTFA NAME**: Melia Azadirachta Leave Extract
- Proposed INCI Name**: Alpha Lipoic Acid
- PLANT MATERIAL**: Leaves Chloroplast cells
- ACTIVE COMPONENTS OF PLANT MATERIAL**: Thioctic Acid (Alpha Lipoic Acid).
- PRODUCT ATTRIBUTES**: Anti-oxidant for Wrinkle Remover, Effective Skin Conditioner (anti-aging Products); After-shaves, Skin-Whitening formulations, Anti-perspirants & deodorants; Non-comedogenic, Non-occlusive, Substantive as true natural botanical anti-oxidant
- SPECIFICATIONS:**
 - APPEARANCE**: Fine Powder
 - COLOUR**: White to Light Cream
 - ODOUR**: Characteristic minimal
 - SOLUBILITY**: Not soluble; Dispersible in water

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PATENT Document

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(54) **PRODUCTION OF ALPHA-LIPOIC ACID**

(76) Inventors: **Hans H Liao**, Eden Prairie, MN (US);
Sara C McFarlan, St Paul, MN (US)

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(21) Appl. No.: **10/475,311**

(22) PCT Filed: **Apr. 19, 2002**

(86) PCT No.: **PCT/US02/12458**

Related U.S. Application Data

(60) Provisional application No. 60/285,276, filed on Apr. 20, 2001.

Publication Classification

(51) Int. Cl.⁷ **C12P 17/00**; C12N 1/21

(52) U.S. Cl. **435/117**; 435/252.33

(57) **ABSTRACT**

Engineered microorganisms that produce at least 200 μg alpha-lipoic acid (ALA) per g dry cell weight and engineered microorganisms that secrete at least a 2-fold greater amount of ALA than an amount of ALA found intracellularly, are described.

Type here to search

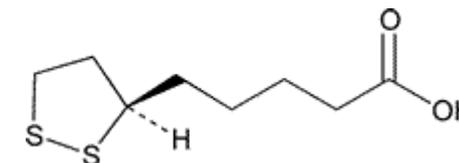
20:59
07-08-2019

ALPHA LIPOIC ACID

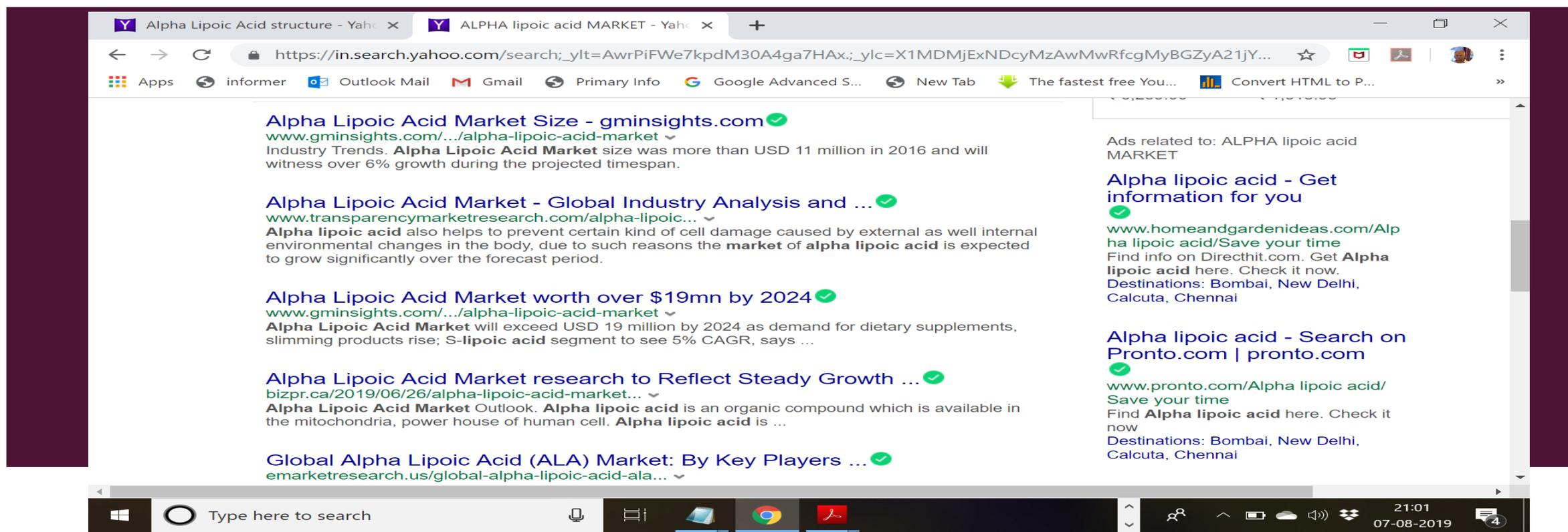
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Consultants - Market reports



The screenshot displays a web browser window with search results for "ALPHA lipoic acid MARKET". The browser's address bar shows the URL: https://in.search.yahoo.com/search;_ylt=AwrPiFWe7kpdM30A4ga7HAX;_ylc=X1MDMjExNDcyMzAwMwRfcgMyBGZyA21jY.... The search results are as follows:

- Alpha Lipoic Acid Market Size - gminsights.com**
www.gminsights.com/.../alpha-lipoic-acid-market
Industry Trends. **Alpha Lipoic Acid Market** size was more than USD 11 million in 2016 and will witness over 6% growth during the projected timespan.
- Alpha Lipoic Acid Market - Global Industry Analysis and ...**
www.transparencymarketresearch.com/alpha-lipoic...
Alpha lipoic acid also helps to prevent certain kind of cell damage caused by external as well internal environmental changes in the body, due to such reasons the **market** of **alpha lipoic acid** is expected to grow significantly over the forecast period.
- Alpha Lipoic Acid Market worth over \$19mn by 2024**
www.gminsights.com/.../alpha-lipoic-acid-market
Alpha Lipoic Acid Market will exceed USD 19 million by 2024 as demand for dietary supplements, slimming products rise; **S-lipoic acid** segment to see 5% CAGR, says ...
- Alpha Lipoic Acid Market research to Reflect Steady Growth ...**
bizpr.ca/2019/06/26/alpha-lipoic-acid-market...
Alpha Lipoic Acid Market Outlook. **Alpha lipoic acid** is an organic compound which is available in the mitochondria, power house of human cell. **Alpha lipoic acid** is ...
- Global Alpha Lipoic Acid (ALA) Market: By Key Players ...**
emarketresearch.us/global-alpha-lipoic-acid-ala...

On the right side of the browser window, there are related advertisements:

- Ads related to: ALPHA lipoic acid MARKET
- Alpha lipoic acid - Get information for you**
www.homeandgardenideas.com/Alpha-lipoic-acid/Save-your-time
Find info on Directhit.com. Get **Alpha lipoic acid** here. Check it now.
Destinations: Bombai, New Delhi, Calcuta, Chennai
- Alpha lipoic acid - Search on Pronto.com | pronto.com**
www.pronto.com/Alpha-lipoic-acid/Save-your-time
Find **Alpha lipoic acid** here. Check it now
Destinations: Bombai, New Delhi, Calcuta, Chennai

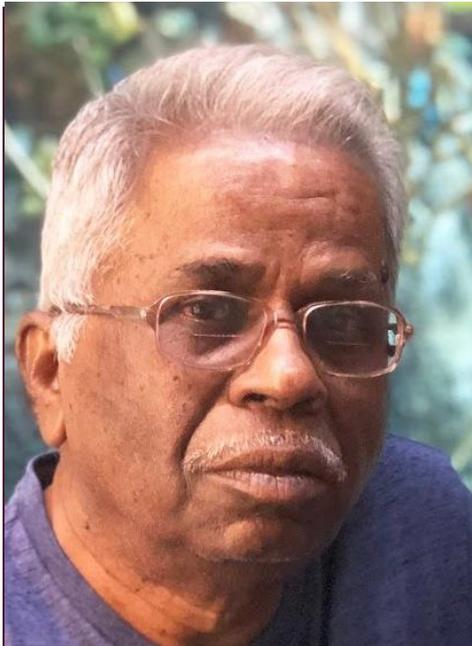
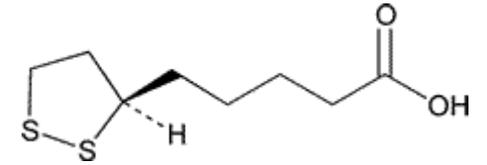
The Windows taskbar at the bottom shows the search bar with "Type here to search", the system tray with the date "07-08-2019" and time "21:01", and several application icons.

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