

主題:化妝品流行趨勢-Astaxanthin(蝦紅素)

概要:

On astaxanthin as cosmetics, the source, compose. and properties of astaxanthin, its developing prospects on the domestic cosmetics market in the future and some beneficial information for the full use of development and utilization. **Astaxanthin** is a kind of natural **carotenoid** which has a series of **special protecting function** for human and premium properties.

引用參考資料: **9. Application of astaxanthin on cosmetics**

By: Jiao, Xuefeng

Source: Guangdong Huagong, Volume: 33, Issue: 1, Pages: 13-15, Journal; General Review, 2006, CODEN: GHUAFI, ISSN: 1007-1865

作用機制:

Astaxanthin, which is a natural carotenoid, is well known as a strong **singlet oxygen scavenger(強效的氧氣清除基)- [Antioxidants](#)**. The purpose of this study is to demonstrate the possibility of prepg. an astaxanthin-based, transparent cosmetics.

引用參考資料: **8. Development of astaxanthin-based cosmetics**

By: Kawabuchi, Tatsuo; Kubo, Toshiaki; Orikasa, Atsushi; Aoki, Mario; Nakamura, Yoshisada; Matsumoto, Hirotaka; Ogawa, Manabu; Nagata, Kouzou; Sudo, Yukio

Source: Fujifilm Research & Development, Volume: 52, Pages: 30-33, Journal, 2007, CODEN: FFRDEK, ISSN: 0915-1478

延伸的產品:

Antiaging cosmetics

功效:

Astaxanthin for skin health and beauty

A review on aging inhibiting of astaxanthin, skin trouble reducing effect of astaxanthin, and use of astaxanthin in cosmetics.

引用參考資料: **7. Astaxanthin for skin health and beauty**

By: Ishikura, Masaharu; Iio, Kumiko; Satoh, Akira

Source: Food Style 21, Volume: 13, Issue: 7, Pages: 34-35, Journal; General Review, 2009, CODEN: FSTYFF, ISSN: 1343-9502

蝦紅素性質介紹:

名稱:

CAS Registry Number: 472-61-7

C40 H52 O4

β,β -Carotene-4,4'-dione, 3,3'-dihydroxy-, (3S,3'S)-

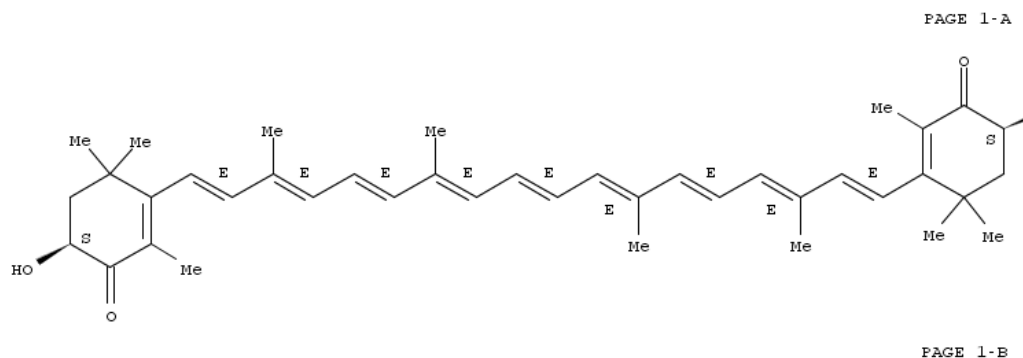
Astaxanthin (6CI); β -Carotene-4,4'-dione, 3,3'-dihydroxy-, all-trans- (8CI); (3S,3'S)-Astaxanthin; (3S,3'S)-Astaxanthin; (3S,3'S)-all-trans-Astaxanthin;

(5S,S)-Astaxanthin; Aquasta; AstaREAL; AstaXin; Astabio AR 5; Astared; Astaxanthin, all-trans-; Astots 100; Astots 50; BioAstin; BioAstin oleoresin;

Carophyll Pink; Lucantin Pink; NatuRose; Natupink; Ovoester; all-trans-Astaxanthin; trans-Astaxanthin

Deleted CAS Registry Numbers: 346585-67-9

結構式



商業常用來源(高純度):

1. 3B Scientific Corporation Product List

Supplier Name: 3B Scientific Corporation, Catalog Publication Date: 1 Jan 2012

Order Number: 3B2-0527, Quantity: 10g

472-61-7 Astaxanthin, 98%

[Link](#)

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2. ACC Corp. Catalog

Supplier Name: American Custom Chemicals Corp., Catalog Publication Date: 15 Sep 2011

Order Number: API0001550, Quantity: N/A

472-61-7 ASTAXANTHIN, 95%

[Link](#)

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3. AK Scientific Product Catalog

Supplier Name: AK Scientific, Inc, Catalog Publication Date: 14 Nov 2011

Order Number: V0394,Quantity: 5g, 25g, 100g, 1g

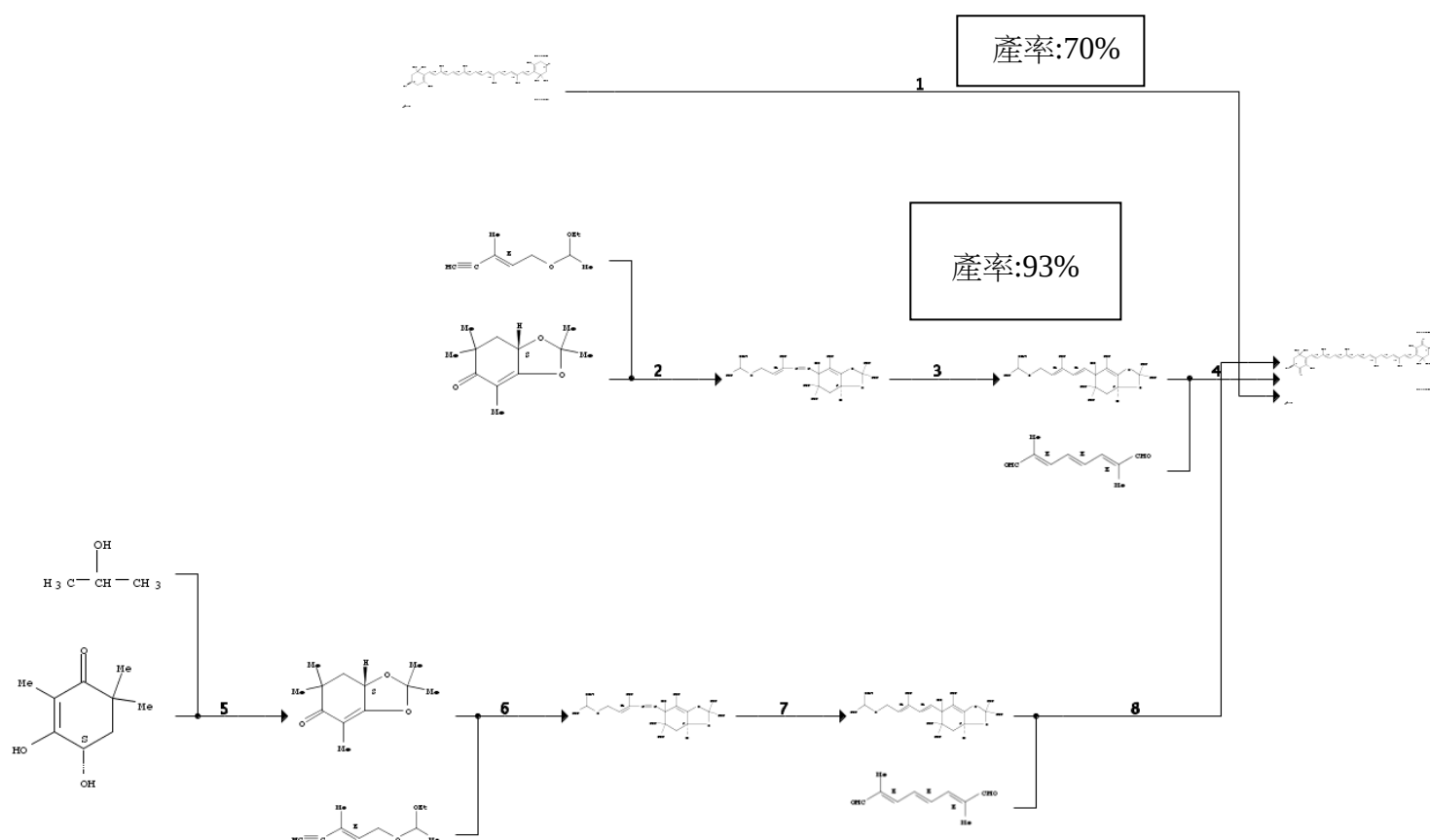
472-61-7 Astaxanthin, 98%

[Link](#)

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自製合成反應式

SciFinder



Innovation 查詢

(也可由基因植入微生物進行合成)

provide a microorganism or a plant transformed with a β -ionone ring-4-ketolase gene and/or β -ionone ring-3-hydroxylase gene derived from *Brevundimonas* sp. strain SD-212. The β -ionone ring-4-ketolase gene and β -ionone ring-3-hydroxylase gene produced by *Brevundimonas* sp. strain SD-212 each have a high activity compared with those of known enzymes, and therefore **microorganisms** transformed with the genes encoding these enzymes can efficiently produce astaxanthin.

Fig. 1

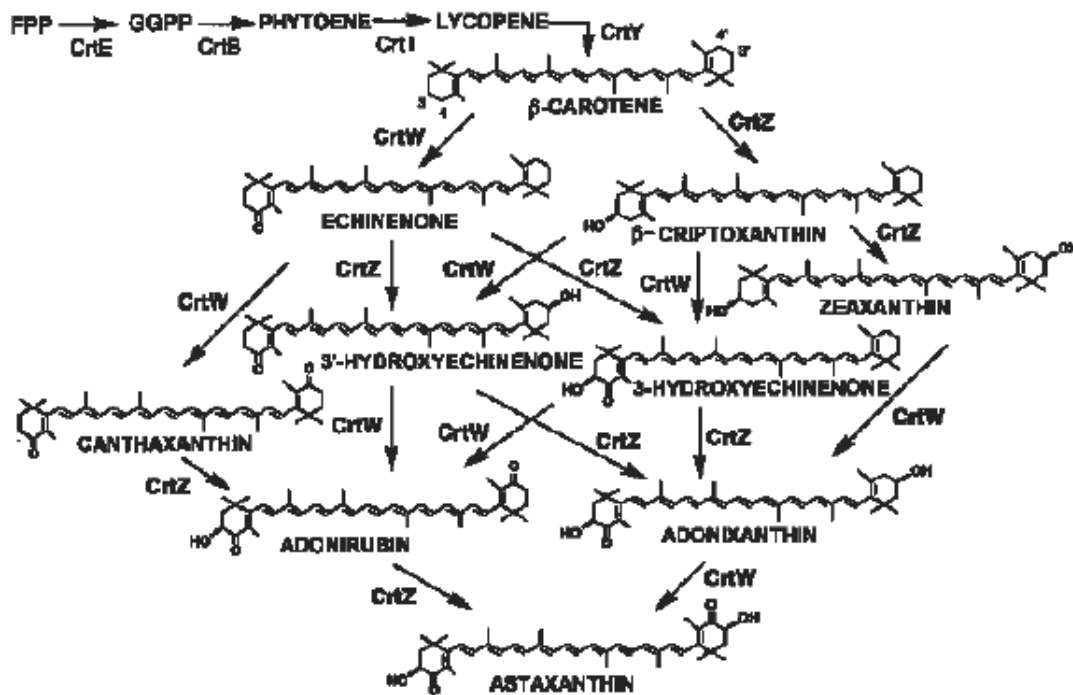


Fig. 2



資料來源:Patent/Publication: US7999151B2

Bibliography

Method of producing astaxanthin or metabolic product thereof by using carotenoid ketolase and carotenoid hydroxylase genes

Original Title

Standardized: KIRIN HOLDINGS KABUSHIKI KAISHA

Original: Kirin Holdings Kabushiki Kaisha, Tokyo, JP

Assignee/Applicant

Inventor

Choi Seon-Kang, Gangneung, KR Misawa Norihiko, Kamaishi, JP

2011-08-16 (B2)

Publication Date (Kind Code)

US2006597362A / 2007-04-12

Application Number / Date

JP2004166625A / 2004-06-04 / JP

WO2005JP9609A / 2005-05-26 / JP

US2006597362A / 2007-04-12 / US

(或是由植物提煉而成)

The amount of carotenoid compounds obtained from the fruit extracts may vary from fruit to fruit.

Typically, the carotenoid family is responsible for most of the pigments found in plants. For example, carotenoids produce the orange pigments found in pumpkins and carrots, and red pigments in tomatoes. In addition to the color imparting properties, carotenoids as a whole are highly effective at quenching singlet oxygen (an unstable and highly reactive oxygen compound) and are a direct scavenger of free radicals.(此處再次提到蝦紅素可作為抗氧化劑-清除自由基。) Carotenoids are defined by their chemical structure. The majority of carotenoids are derived from a 40-carbon polyene chain. The distinctive pattern of alternating single and double bonds in the polyene chain provides the functionality allowing carotenoids to absorb (quench) excess energy from singlet oxygen compounds. Some specific examples of carotenoids are alpha-carotene, beta-carotene, lycopene, **astaxanthin**, lutein, and zeaxanthin. Lycopene and beta-carotene may be the most effective of the carotenoids at quenching singlet oxygen.

資料來源: Patent US8067045B2- DETAILED DESCRIPTION

使用心得(SciFinder)

對於這次使用 SciFinder 的感想，我想雖然已於課堂聽過淺顯的概略，並簡短使用，但真正要作報告時，發現其功能，真的需要自己去慢慢探索，才能發現強大的作用。

SciFinder 彙整了包含五大領域-生物化學、有機化學、高分子、應用化學及物理/無機/分析，因此使我在作報告時，可以不擔心範圍的狹隘性，除了系統本身很專業的化學背景之外，也有涵蓋生物方面，讓我在這次自己定的主題-『化妝品新原料-蝦紅素』也能查到豐富的資料，藉由三大搜尋方式-Explore References、Explore Substances、Explore Reactions，選擇自己想要的方式去進行，其中最簡易且最易搜尋的 Explore References，讓我能快速找到所需資料，並由已知的資訊進階使用 Explore Substances、Explore Reactions，連貫的順序，讓搜尋十分有邏輯性，雖然剛開始時研究很久，甚至上學校圖書館參閱教導使用的 ppt，但熟練之後，就可以比較知道如何使用，其過程令人產生深刻的印象。

而這次的報告最大收穫，幫助我除了解在系學修-化妝品，所學的作用機轉理論外，更能透過化學的角度，去知道假使自己是化妝品公司的原物製造者，可以利用於資料檢索的反應式，選取低成本的反應物且高產率的化學式，去自行自製合成，或直接藉由從原物料公司提供的價格比較，去決定購買的廠商，以減低成本，實在是很棒的 Database，雖然我們還只是大三的學生，較少機會去需要用到這樣的資料庫，但未來無論如何都一定會碰到，提早認識並熟悉使用，我想是必要且必須的。

使用心得(Innovation)

其實這次對於使用 Innovation，我認為並不如想像中的容易，個人認為其原因，應是跟我選定的主題方向有關，不是以一個商品或是特定的合成方法之類，只是一個化妝品的新成份而已，因此當我使用 Innovation 搜尋時，因用 SciFinder 查到需要的論文，都沒有提出專利的申請，故沒辦法知道 patent number，因此我只能利用 Astaxanthin 與報告的相關詞-化妝品、抗氧化，去搜尋我想要的資料，而這樣的搜尋方式，是很沒效率的，畢竟大筆資料雖有包含關鍵字，但不見得都是符合我想要的資訊，必須一篇篇的點閱、篩選，花了不少時間。

對於 Innovation 這個 Database，我覺得以目前來說，不會有太深入的了解，以現階段的查閱，很少有機會跟專利有關，如果以後去藥廠擔任法規審查的工作，可能就會密切的關聯，雖然如此，我覺得多認識一個新的 database 仍是十分有用，即使不是很上手，可是隨一天天的摸索，我想還是能研究出一些自己的心得!!!