



2018年第44期 总144期

## 茶学研究专题

### 本期导读

#### ➤ 相关专利

1. 红茶提取物及其制备方法
2. 茶提取物儿茶素制剂的甲基化

#### ➤ 学术文献

1. 用于提高多酚类物质生物利用度的基于食品大分子的纳米运载系统
2. 果蔬生物活性化合物生物利用度和生物可获得性的测定分析方法：综述
3. 膳食多酚：结构、生物利用度和对动脉粥样硬化的保护作用
4. 膳食多酚、氧化应激、抗氧化和抗炎作用

中国农业科学院农业信息研究所

联系人：王玉芹

联系电话：010-82109896

邮箱：[agri@ckcest.cn](mailto:agri@ckcest.cn)

2018年10月29日

## ➤ 相关专利

### 1. BLACK TEA EXTRACT AND PREPARATION METHOD THEREFOR (红茶提取物及其制备方法)

**简介：**一种红茶提取物，按质量计分别包含20-30份茶黄素和40-50份儿茶素。红茶提取物中的茶黄素和儿茶素可以通过本专利工艺中传统的高浓度茶多酚提取得到，也可以作为本技术中茶黄素和儿茶素的商业用途。

**来源：**世界知识产权局

**发布日期：**2018-07-19

**全文链接：**<http://agri.ckcest.cn/ass/9598abc9-126f-44bd-9793-a8df2fc130ff.pdf>

### 2. The methylation of the catechin preparation of tea extract (茶提取物儿茶素制剂的甲基化)

**简介：**本专利提供了茶提取物儿茶素的甲基化技术相关问题和解决方案。[问题]通过甲基化减少儿茶素茶提取物的苦味。[解决方案](A)甲基化儿茶素，儿茶素没食子酸酯；(B)非绿茶儿茶素没食子酸酯；(C)类型和胶原蛋白肽。

**来源：**日本专利

**发布日期：**2018-08-30

**全文链接：**<http://agri.ckcest.cn/ass/a6740f77-d4b8-4a6b-92b9-5b734279b0b8.pdf>

## ➤ 学术文献

### 1. Food macromolecule based nanodelivery systems for enhancing the bioavailability of polyphenols (用于提高多酚类物质生物利用度的基于食品大分子的纳米运载系统)

**简介：**Diet polyphenols—primarily categorized into flavonoids (e.g., flavonols, flavones, flavan-3-ols, anthocyanidins, flavanones, and isoflavones) and nonflavonoids (with major subclasses of stilbenes and phenolic acids)—are reported to have health-promoting effects, such as antioxidant, antiinflammatory, anticarcinoma, antimicrobial, antiviral, and cardioprotective properties. However, their applications in functional foods or medicine are limited because of their inefficient systemic delivery and poor oral bioavailability. Epigallocatechin-3-gallate, curcumin, and resveratrol are the well-known representatives of the bioactive diet polyphenols but with poor bioavailability. Food macromolecule based nanoparticles have been fabricated using reassembled proteins, crosslinked polysaccharides, proteinpolysaccharide conjugates (complexes), as well as emulsified lipid via safe procedures that could be applied in food. The human gastrointestinal digestion tract is the first place where the food grade macromolecule nanoparticles exert their effects on improving the bioavailability of diet polyphenols, via enhancing their solubility, preventing their degradation in the intestinal environment, elevating the permeation in small intestine, and even increasing their contents in the bloodstream. We contend that the stability and structure behaviors of nanocarriers in the gastrointestinal tract environment and the

effects of nanoencapsulation on the metabolism of polyphenols warrant more focused attention in further studies.

来源: Journal of Food & Drug Analysis 期刊

发布日期:2017-01-20

全文链接:<http://agri.ckcest.cn/ass/861181a7-2c80-4dbf-ae53-0e6d5c658f5a.pdf>

## **2 . Analytical Methods for Determining Bioavailability and Bioaccessibility of Bioactive Compounds from Fruits and Vegetables: A Review (果蔬生物活性化合物生物利用度和生物可获得性的测定分析方法: 综述)**

简介: Determination of bioactive compounds content directly from foodstuff is not enough for the prediction of potential *in vivo* effects, as metabolites reaching the blood system may be different from the original compounds found in food, as a result of an intensive metabolism that takes place during absorption. Nutritional efficacy of food products may be ensured by the determination of bioaccessibility, which provides valuable information in order to select the appropriate dosage and source of food matrices. However, between all the methods available, there is a need to establish the best approach for the assessment of specific compounds. Comparison between *in vivo* and *in vitro* procedures used to determine bioaccessibility and bioavailability is carried out, taking into account the strengths and limitations of each experimental technique, along with an intensive description of actual approaches applied to assess bioaccessibility of bioactive compounds. Applications of these methods for specific bioactive compound's bioaccessibility or bioavailability are also discussed, considering studies regarding the bioavailability of carotenoids, polyphenolic compounds, glucosinolates, vitamin E, and phytosterols.

来源: Comprehensive Reviews in Food Science and Food Safety 期刊

发布日期:2014-02-21

全文链接:<http://agri.ckcest.cn/ass/c186a268-635c-4a04-b1c0-9caff893237d.pdf>

## **3. Dietary polyphenols: Structures, bioavailability and protective effects against atherosclerosis (膳食多酚: 结构、生物利用度和对动脉粥样硬化的保护作用)**

简介: Epidemiological studies have demonstrated that nutritional habits, like those based on high consumption of fruits and vegetables, have been associated with a longer life expectancy and a significant decrease in the incidence and prevalence of several chronic diseases with inflammatory basis, such as cardiovascular diseases (CVD). This beneficial activity has been related to the content of several bioactive compounds in fruit and vegetables, such as polyphenols. The cardioprotective effects of polyphenols have been linked mainly to its antioxidant properties; however, recent findings attribute its anti-atherosclerotic potential to modulate simultaneous signaling and mechanistic pathways. Emerging data suggest that polyphenols can regulate cellular lipid metabolism; vascular and endothelial function; haemostasis; as well as platelet function; which represent primary conditions for atherosclerotic plaque formation and development. This review presents the results of a selection of experimental studies and clinical trials regarding the

atheroprotective effects of the most common dietary polyphenols.

来源: Food and Chemical Toxicology 期刊

发布日期:2018-03-20

全文链接:<http://agri.ckcest.cn/ass/26a33baa-f594-4519-8ec1-7957f2bdf768.pdf>

#### **4 . Dietary polyphenols, oxidative stress and antioxidant and anti-inflammatory effects (膳食多酚、氧化应激、抗氧化和抗炎作用)**

简介: Phenolic compounds including phenolic acids, flavonoids and proanthocyanidins are widely distributed in plants as a protective mechanism against biotic and abiotic stresses. Fruits, vegetables, grains, spices and herbs are the richest source of dietary polyphenols. High intake of these foods has been linked to lowered risk of most common degenerative and chronic diseases that are known to be caused by oxidative stress. This review intends to summarize briefly recent progress on the chemistry and biochemistry of dietary polyphenols, their antioxidant and anti-inflammatory activities, and the underlying molecular mechanisms of their involvement in inflammation mediated metabolic diseases are also discussed. Perspectives for future research are also briefly discussed.

来源: Current Opinion in Food Science 期刊

发布日期:2016-04-20

全文链接:<http://agri.ckcest.cn/ass/93cf65f4-6ef5-4a49-a138-2f425e3b2ff3.pdf>