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## 茶学研究专题

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## 学术文献

### 1. Simulated Herbivory: The Key to Disentangling Plant Defence Responses (模拟草食昆虫：解开植物防御反应的关键)

简介: Plants are subjected to a multitude of stimuli during insect herbivory, resulting in a complex and cumulative defence response. Breaking down the components of herbivory into specific stimuli and identifying the mechanisms of defence associated with them has thus far been challenging. Advances in our understanding of responses to inconspicuous stimuli, such as those induced by microbial symbionts in herbivore secretions and mechanical stimulation caused by insects, have illuminated the intricacies of herbivory. Here, we provide a synthesis of the interacting impacts of herbivory on plants and the consequential complexities associated with uncoupling defence responses. We propose that simulated herbivory should be used to complement true herbivory to decipher the mechanisms of insect herbivore-induced plant defence responses.

来源: Trends in Ecology & Evolution 期刊

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全文链接: <http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0DEISASclmAB29eQTuztw853.pdf>

### 2. The mechanisms of action of flavonoids in the brain: Direct versus indirect effects (黄酮类化合物在大脑中的作用机制：直接与间接效应)

简介: The projected increase in the incidence of dementia in the population highlights the urgent need for a more comprehensive understanding of how different aspects of lifestyle, in particular exercise and diet, may affect neural function and consequent cognitive performance throughout the life course. In this regard, flavonoids, found in a variety of fruits, vegetables and derived beverages, have been identified as a group of promising bioactive compounds capable of influencing different aspects of brain function, including cerebrovascular blood flow and synaptic plasticity, both resulting in improvements in learning and memory in mammalian species. However, the precise mechanisms by which flavonoids exert these actions are yet to be fully established, although accumulating data indicate an ability to interact with neuronal receptors and kinase signaling pathways which are key to neuronal activation and communication and synaptic strengthening. Alternatively or concurrently, there is also compelling evidence derived from human clinical studies suggesting that flavonoids can positively affect peripheral and cerebrovascular blood flow, which may be an indirect effective mechanism by which dietary flavonoids can impact on brain health and cognition. The current review examines the beneficial effects of flavonoids on both human and animal brain function and attempts to address and link direct and indirect actions of flavonoids and their derivatives within the central nervous system (CNS).

来源: Neurochemistry International 期刊

发布日期: 2015-10-20

全文链接: <http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0DBqSASrfVABCeSxB-mwQ144.pdf>

### 3. Neuroprotective potential of phytochemicals (植物化学物质的神经保护潜力)

简介: Cognitive dysfunction is a major health problem in the 21st century, and many neuropsychiatric disorders and neurodegenerative disorders, such as schizophrenia, depression, Alzheimer's Disease dementia, cerebrovascular impairment, seizure disorders, head injury and Parkinsonism, can be severely functionally debilitating in nature. In course of time, a number of neurotransmitters and signaling molecules have been identified which have been considered as therapeutic targets. Conventional as well newer molecules have been tried against these targets. Phytochemicals from medicinal plants play a vital role in maintaining the brain's chemical balance by influencing the function of receptors for the major inhibitory neurotransmitters. In traditional practice of medicine, several plants have been reported to treat cognitive disorders. In this review paper, we attempt to throw some light on the use of medicinal herbs to treat cognitive disorders. In this review, we briefly deal with some medicinal herbs focusing on their neuroprotective active phytochemical substances like fatty acids, phenols, alkaloids, flavonoids, saponins, terpenes etc. The resistance of neurons to various stressors by activating specific signal transduction pathways and transcription factors are also discussed. It was observed in the review that a number of herbal medicines used in Ayurvedic practices as well Chinese medicines contain multiple compounds and phytochemicals that may have a neuroprotective effect which may prove beneficial in different neuropsychiatric and neurodegenerative disorders. Though the presence of receptors or transporters for polyphenols or other phytochemicals of the herbal preparations, in brain tissues remains to be ascertained, compounds with multiple targets appear as a potential and promising class of therapeutics for the treatment of diseases with a multifactorial etiology.

来源: Pharmacognosy Review 期刊

发布日期: 2012-12-10

全文链接: [http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0DAaaAKeaYAAoqz\\_3AUv8055.pdf](http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0DAaaAKeaYAAoqz_3AUv8055.pdf)

### 4. Interaction between flavonoids and the blood-brain barrier: *in vitro* studies (黄酮类化合物与血脑屏障之间的相互作用: 体外研究)

简介: There is considerable current interest in the neuroprotective effects of flavonoids. This study focuses on the potential for dietary flavonoids, and their known physiologically relevant metabolites, to enter the brain endothelium and cross the bloodbrain barrier (BBB) using well-established *in vitro* models (brain endothelial cell lines and ECV304 monolayers co-cultured with C6 glioma cells). We report that the citrus flavonoids, hesperetin, naringenin and their relevant *in vivo* metabolites, as well as the dietary anthocyanins and *in vivo* forms, cyanidin-3-rutinoside and pelargonidin-3-glucoside, are taken up by two brain endothelial cell lines from mouse (b.END5) and rat (RBE4). In both cell types, uptake of hesperetin and naringenin was greatest, increasing significantly with time and as a function of concentration. In support of these observations we report for the first time high apparent permeability ( $P_{app}$ ) of the citrus flavonoids, hesperetin and naringenin, across the *in vitro* BBB model (apical to basolateral) relative to their more polar glucuronidated conjugates, as well as those of epicatechin and its *in vivo* metabolites, the dietary anthocyanins and to specific phenolic acids derived from colonic

biotransformation of flavonoids. The results demonstrate that flavonoids and some metabolites are able to traverse the BBB, and that the potential for permeation is consistent with compound lipophilicity.

来源: Journal of Neurochemistry 期刊

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全文链接: [http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0DCf6AF8\\_wAAXdqLib\\_rE290.pdf](http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0DCf6AF8_wAAXdqLib_rE290.pdf)

## ➤ 相关专利

### 1. BEVERAGE CONTAINING ACTIVATED CARBON AND TEA POLYMERIZED POLYPHENOL (含有活性炭和茶多酚的饮料)

简介: PROBLEM TO BE SOLVED : To provide a beverage containing activated carbon, with the dispersibility of the activated carbon improved in the beverage. SOLUTION: The present invention provides a beverage containing activated carbon, tea polymerized polyphenol blended with the activated carbon. The present invention, is to include, but are not limited to these. (1) Containing activated carbon and tea polymerized polyphenol, beverage. (2) 0.01w/v % or more when the content of the activated carbon, (1) beverage. (3) The content of the activated carbon in 0.2-5w/v %, (2) of the beverage. (4) The content of the tea polyphenol polymerization in 0.1-100mg/100ml, (1) - (3) any of the beverage 1. (5) Heat-treated beverage, (1) - (4) any of the beverage 1. (6) Packaged beverage, (1) - (5) any of the beverage 1. (7) Of the activated carbon in the beverage to inhibit settling of the method, a polyphenol formulation as the tea beverage comprising the steps of polymerization, the method.

来源: 日本专利

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全文链接: <http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0C9FSAK1IqAAYMrjGskkw202.pdf>

### 2. MODIFIED GREEN TEA POLYPHENOLS AND METHODS THEREOF FOR TREATING LIVER DISEASE (改性绿茶多酚及其治疗肝病的方法)

简介: 本发明提供了治疗受试者的肝病的方法, 包括给受试者施用有效剂量的一种或多种改性绿茶多酚, 以减少, 减少, 限制或预防相对于未治疗的对照受试者的一种或多种肝病症状。 在一个优选的实施方案中, 一种或多种改性绿茶多酚以400mg / kg体重的剂量每周给药五次。 在一些实施方案中, 所公开的方法还包括向受试者施用一种或多种另外的药物活性剂, 这些药物活性剂是化学治疗剂。

来源: 美国专利

发布日期: 2015-02-26

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