

歪果仁告诉你中药对新冠到底多奏效!

中草药治疗新型冠状病毒的科学研究

Scientific Research on Chinese herbal medicines for treatment of COVID-19

中医学 zhōngyào xué – Traditional Chinese Medicine (TCM)

中草药 zhōngcǎoyào - Chinese Herbal Medicine

由石龙

我知道我知道。如此众多的现代主义者，包括一些中国人仍然相信：

“四旧!” “辞旧迎新!”

即新事物总会代替旧事物。

I know, I know. So many modernists, including some Chinese consciously or unconsciously still believe: 四旧 sì jiù! “Out with the four olds” And: “辞旧迎新” Cí jiù yíngxīn Quit old and welcome new.” That is, new things always replace old things.

同样，一些西方媒体嘲笑了包括传统医学在内的所有中文。尽管有些人 den 毁了许多传统的中国智慧和知识，但西方科学家已经对其中的许多知识进行了深入研究。特别是研究领域之一是药理学。

我曾在北京一所非常昂贵的私立学校里教书，我因试图教我的学生说英语“孔子”而受到严惩。我认为学生到西方大学学习时很有必要应该知道自己国家的文化和如何向西方人解释一些中国的哲学。但是，担任英语部负责人的中国妇女不同意。她崇拜所有西方事物，似乎对中国所有事物的看法都很低。

At the very expensive private school in Beijing where I used to teach I was severely punished for trying to teach my students how to say “Confucius” in English. I thought the students should know how to explain some of Chinese philosophy to westerners when they get to western universities. But, the Chinese woman who was the head of the English Department did not agree. She worshipping all western things and seemed to have a very low opinion of all things Chinese.

同样，一些西方媒体嘲笑包括传统医学在内的所有中国人。尽管有些人毁了许多传统的中国智慧和知识，但有的西方科学家已经对其中的许多知识进行了深入研究。特别是研究领域之一是药理学。

Likewise, some of the western press had ridiculed everything Chinese including traditional medicine. Though some people denigrate much of traditional Chinese wisdom and knowledge, Western scientists have gone ahead a studied much of it intensively. One area of study in particular has been pharmacology.

由于新型冠状病毒在世界范围内迅速传播，因此迫切需要加快速度，以便在此时找到针对这种疾病的有效治疗方法。

Because of the rapid worldwide spread of the novel coronavirus there is an urgent need for speed to find effective treatments for this disease at this time.

2020年3月16日-全球冠状病毒大流行死亡人数超过6,500, 已确诊病例约170,000

Mar 16, 2020 - Coronavirus Pandemic Death Toll Tops 6,500 Worldwide, About 170,000 Confirmed Cases

https://www.democracynow.org/2020/3/16/headlines/trump_tests_negative_for_coronavirus_after_being_in_contact_with_brazilian_official_infected_with_covid_19

已经研究了成千上万种传统中草药的药理特性, 其中许多已被纳入现代医学。自然地, 目前正在寻找大量的中草药, 以寻找有效的新型冠状病毒治疗方法。

Thousands of Chinese traditional herbs have been studied for their pharmacological properties and many have been incorporated into modern medicines. Naturally a search through the very large body of Chinese herbology is currently underway in an effort to find effective cures for COVID-19.

就像我在其他一些文章中一样, 我知道有些人不太喜欢或不太了解科学。同时, 大多数人确实尊重科学。在以下对某些中草药的评论中, 我将包括一些科学研究以及该研究在科学期刊上的链接, 以向读者证明这是一门真正的科学。如果太复杂, 请跳过它! 我还尝试在引用该研究报告之后, 以更简单的方式总结更重要的科学信息, 以确保普通人可以理解几乎所有重要信息。

And like in some of my other articles, I know some people don't like or understand science much. At the same time, most people do respect science. In the following review of some Chinese herbal medicines I'm including some of the scientific research along with links to that research in the science journals, just to prove to the readers that this is real science. If it's too complicated, skip it! Ha! I also try to summarize the more important scientific information in simpler terms after the quotes from the research to ensure regular people can understand just about everything important.

以下是有关中草药作为新型冠状病毒治疗的更有趣的科学研究文章之一:

One of the more interesting scientific research articles on Chinese herbal medicine as treatment for novel coronavirus is the following:

针对 2019-nCoV 的 nsp14 的中西医潜在治疗

Potential treatment of Chinese and Western Medicine targeting nsp14 of 2019-nCoV

Chao Liu, Xiaoxiao Zhu, Yiyao Lu, Xu Jia, Tai Yang

根据对接得分, 选择了 18 种小分子药物进行进一步评估。这些化合物包括沙奎那韦, 金丝桃素, 黄 ical 素和溴隐亭, 可以与 2019-

nCoV Nsp14 同源模型的 N 末端和 C 末端结合，从而可以作为对抗 2019-nCoV 的候选药物进行进一步研究。

Based on the docking score, 18 small molecule drugs were selected for further evaluation. The compounds, including Saquinavir, Hypericin, Baicalein and Bromocriptine, could bind the N-terminus and C-terminus of the homology model of the 2019-nCoV Nsp14, thus providing as a candidate drug against 2019-nCoV for further study.

<http://www.chinaxiv.org/abs/202002.00071>

中草药学生可能会立即在该列表上注意到**黄芩**。它是中国最古老，最崇高的草药之一。

The student of Chinese herbal medicine might immediately notice Baicalein on that list. It is one of China's oldest and most noble herbal medicines.

黄芩 Huángqín

黄芩，又称黄芩或黄芩，是我国 50 种中药材之一。如果你对这个世界上古老的医疗体系有所了解，你一定听说过著名的小柴胡汤，其中黄芩是关键成分之一

Scutellaria baicalensis, also known as Baical skullcap root or Huang Qin in Chinese, is one of the 50 fundamental herbs of TCM (traditional Chinese medicine). If you know something about this oldest medical system in the world, you've no doubt heard of the famous Xiao Chai Hu Tang (Minor Bupleurum Decoction), in which skullcap is one of the key ingredients...

<http://www.chineseherbshealing.com/scutellaria-baicalensis/>

庞大的 Pubmed 医学数据研究网站 (<https://www.ncbi.nlm.nih.gov/Pubmed>) 发布了 1467 篇文章，研究黄芩的许多益处，包括预防和恢复中风（缺血性发作）、癌症治疗和一般抗炎特性。

Pubmed, <https://www.ncbi.nlm.nih.gov/pubmed> has 1,467 articles posted studying the many benefits of Huang Qin including the prevention and recovery from strokes (ischemic attack), cancer treatments, and general anti-inflammatory properties.

以下仅是这一杰出的草药科学研究的几个例子。

The following are just a few examples of scientific research on this remarkable herbal medicine.

黄芩苷和黄芩素对脑缺血的影响

The Effects of Baicalin and Baicalein on Cerebral Ischemia: A Review

Wei Liang, Xiaobo Huang, and Wenqiang Chen

药代动力学研究表明，黄芩苷能穿透血脑屏障，分布于脑细胞核。通过多种离体和活体缺血神经元损伤模型，大量研究表明黄芩苷和

黄芩素具有良好的神经保护作用。尤其是对其药理机制的研究表明,黄芩苷和黄芩素具有抗氧化、抗凋亡、抗炎、抗兴奋、保护线粒体等多种药理活性,促进神经保护因子的表达和成体神经发生的作用等。。。

Pharmacokinetic studies have shown that baicalin could penetrate the blood-brain barrier and distribute in cerebral nuclei. Through a variety of in vitro and in vivo models of ischemic neuronal injury, numerous studies have demonstrated that baicalin and baicalein have salutary effect for neuroprotection. Especially, the studies on the pharmacological mechanism showed that baicalin and baicalein have several pharmacological activities, which include antioxidant, anti-apoptotic, anti-inflammatory and anti-excitotoxicity effects, protection of the mitochondria, promoting neuronal protective factors expression and adult neurogenesis effects and many more...

内源性神经干/祖细胞 (NPCs) 可能是脑卒中治疗中促进成人神经发生、脑可塑性和修复的治疗靶点[98]。缺血后的大脑有可能刺激NPCs 的增殖和分化,诱导神经元前体向缺血区直接迁移,导致受损神经元的替换。。。

Endogenous neural stem/progenitor cells (NPCs) may be therapeutic targets for promoting adult neurogenesis, brain plasticity and repair for the treatments of stroke [98]. Post-ischemic brains have the potential to stimulate proliferation and differentiation of NPCs and to induce direct migration of neuronal precursors toward ischemic areas, leading to replacement of damaged neurons...

大量的科学证据表明,黄芩苷和黄芩素的神经保护作用与抗氧化、抗凋亡、抗炎和抗兴奋毒性、保护线粒体、促进神经保护因子表达和成人神经发生等因素有关。。。

Abundant scientific evidence shows that the neuronal protective effects of baicalin and baicalein are related to anti-oxidant, anti-apoptotic, anti-inflammatory and anti-excitotoxicity effects, protection of the mitochondria, promotion of neuronal protective factors expression and adult neurogenesis and other factors...

衰老与疾病, 2017 年 12 月; 8 (6) : 850–867

Aging and Disease, 2017 Dec; 8(6): 850–867

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5758355/>

用简单的话来说,黄芩确实可以帮助保护你的大脑。它可以“吞噬”血液中的坏物质(抗氧化剂),防止细胞死亡(抗凋亡),防止炎症以及防止大脑中某些真正重要的受体过度活跃(抗兴奋性毒性)。真正令人惊奇的是,它实际上可以帮助大脑中的神经细胞生长(神

经发生)，并可以帮助替换受损和死掉的脑细胞。此外，在结论中，研究还提到“保护线粒体”。线粒体产生能量使细胞发挥功能。

In simpler words, Huang Qin can really help protect your brain. It can “eat up” the bad stuff in your blood (anti-oxidant), prevent cell death (anti-apoptotic), prevent inflammation, and prevent overactivity of some really important receptors in your brain (anti-excitotoxicity). Really amazing is that it can actually help nerve cells in the brain grow (neurogenesis) and can help replace damaged and dead brain cells. Also, in the conclusions the study mentions “protection of Mitochondria.” Mitochondria produces the energy for cells to function.

对于这个作者来说，这些信息非常令人惊奇。我在美国从事神经生理学研究多年。通常认为受损和死亡的神经细胞无法再生。请记住，大脑主要由神经细胞组成。当然，那是1980年代，此后已经发现了许多发现，但这确实是一个好消息，黄琴是一种真正令人惊奇的草药！

For this writer this information is very amazing. I did research in neurophysiology in the USA for many years. It was commonly believed that regrowth of damaged and dead nerve cells was impossible. Remember the brain is mostly made of nerve cells. Of course, that was the 1980s and many discoveries have been made since then, but this is very good news indeed, and huang qin is a truly amazing herb!

所有这些仅仅是黄琴众多科学研究之一。以下是另一个。

All that is from just one of the many scientific studies on Huang Qin. The following is another.

黄琴对癌症的迷人影响：综述

The Fascinating Effects of Baicalein on Cancer: A Review

Hui Liu, Yonghui Dong, Yutong Gao, Zhipeng Du, Yuting Wang, Peng Cheng, Anmin Chen, and Hui Huang

“在这篇综述中，我们介绍了各种分子机制和信号通路来阐明其抗癌潜力，包括阻断细胞周期，诱导凋亡，抑制肿瘤细胞的侵袭和转移，增强化学治疗剂的作用，触发自噬细胞死亡等。此外，表1还总结了黄芩素抑制体内各种肿瘤生长的具体机制。”

“In this review, we introduced various molecular mechanisms and signaling pathways to elucidate its anticancer potential, including blockage of the cell cycle, inducing apoptosis, inhibiting tumor cell invasion and metastasis, potentiating the actions of chemotherapeutic agents, triggering autophagic cell death, and so on. Moreover, we also summarized specific mechanisms by which baicalein inhibited various tumor growths in vivo in Table 1.”

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5085714/>

凋亡意味着细胞死亡，在这种情况下意味着杀死癌细胞。

Apoptosis by the way means cell death, and in this case means killing cancer cells.

其他中药治疗新型冠状病毒的科学研究

Scientific research on other Chinese medicines used to treat COVID-19

一篇题为《新型冠状病毒（COVID-19）中药天然产物计算筛选及文献证据综合分析》的文章（日期：2020-2-19）列出了从中药中提取的物质清单，这些物质也正在作为 COVID-19 的治疗方法进行研究。

An article titled New Coronavirus (COVID-19) Traditional Chinese Medicine Natural Product Computational Screening and Literature Evidence Integration Analysis dated 2020-2-19 has a list of substances extracted from TCM also being studied as treatments for COVID-19.

(1) 文献调查发现 56 种天然产物成分具有实验证实的抗冠状病毒活性，能靶向冠状病毒的结构蛋白和非结构蛋白

(1) Literature survey found 56 kinds of natural product components with experimentally verified anti-coronal activity, which can target structural and non-structural proteins of coronavirus

(2) 将 aCODE 系统预测的抗冠状病毒天然产物成分与文献对照，发现交叉点为大黄素、甘草酸、人参皂苷 R1、利血平和杨梅素。大黄素能破坏冠状病毒 S 蛋白与宿主 ACE2 的相互作用，防止病毒侵入宿主细胞；同时能抑制 3a 蛋白离子通道，防止病毒释放。甘草酸及其衍生物也是国内相关团队在新型冠状病毒肺炎研究中重点关注的候选药物，已进入临床试验。

(2) Comparing the anti-coronavirus natural product components predicted by the aCODE system with literature evidence, it was found that the intersection was emodin, glycyrrhizic acid, ginsenoside R1, reserpine, and myricetin. Emodin can destroy the interaction between the coronavirus S protein and the host ACE2, prevent the virus from invading the host cell; meanwhile, it can inhibit the 3a protein ion channel and prevent the virus from releasing. Glycyrrhizic acid or its derivative is also a candidate drug that the related domestic team has focused on in the research of new coronavirus pneumonia and has entered clinical trials.

<http://blog.sciencenet.cn/blog-508476-1219301.html>

大黄素例如可以从喜马拉雅大黄中提取。

Emodin for example can be extracted from the Himalayan rhubarb.

In another article:

“【铁苋菜空中部分的化学成分】中国中药杂志（中文）

"[Chemical constituents of aerial part of *Acalypha australis*]" [Chemical Constituents of Aerial Part of *Acalypha australis*]. *Zhongguo Zhong Yao Za Zhi* [China Journal of Chinese Materia Medica] (in Chinese), by Wang, X. L.; Yu, K. B.; Peng, S. L. (2008). 33 (12): 1415–1417. PMID 18837345 (In Chinese)

<http://blog.sciencenet.cn/blog-508476-1219301.html>

还有：And there's also:

新冠肺炎（COVID-19）中药天然产物计算筛选与文献证据集成分析

Novel coronavirus pneumonia (COVID-19) natural products of Chinese medicine: computational screening and integrated analysis of documentary evidence (In Chinese)

<http://chinaxiv.org/abs/202002.00024>

虽然大多数科学文章都是相当简单和直截了当的，有大量的科学支持，但也有一些文章受到了很多批评。在一项科学研究中，所有的细节都应该被记录下来，以便其他研究人员可以复制这项研究。然而，在一场导致数千人死亡的大流行病中，一些研究人员的行动比西方正统科学家的行动要快。这些研究中有一些是优秀的，但仍然受到批评。

Though most science articles are fairly simple and straightforward with plenty of science to support them, others have received a lot of criticism. In a scientific study all details are supposed to be recorded so that other researchers can replicate the study. However, during a pandemic which is killing thousands of people some researchers are moving faster than the orthodox scientists of the west. Some of this research is excellent, but still gets criticized.

新型角膜病毒治疗的中药

从目前的治疗结果来看，中医根据 2019 例 nCoV 肺炎患者的综合症状，提出了可能有效的处方，如清肺排毒汤、甘草甘江汤、疏肝麻黄汤、清肺头泄扶正方等。清肺头泄扶正方由麻黄、甘草组成白芍、苦杏仁、石膏、桂枝、泽泻、多角菌、白术、茯苓、柴胡、黄芩、半夏、生姜、姜、紫菀、法拉花，射干、细辛、薯蓣、枳实、陈皮、广藿香在我国 COVID-19 的诊治方案中作为通用方剂得到推广[2]。在 QPD 治疗的 701 例确诊病例中，130 例治愈出院，51 例临床症状消失，268 例症状改善，212 例症状稳定无加重[3]。QPD 对 COVID-19 的有效治愈率达 90%以上。根据中医理论，COVID-19 的靶器官是肺，其病因属性为“湿毒瘟疫”。网络药理学分析表明，QPD 具有多组分、多靶点的整体调节作用。药理作用的主要部位是肺，作为 16 味中药对肺经的作用，说明该汤主要是针对肺病的。此外，它还可以通过脾胃的升降起到除湿的作用，表现出对心、肾等器官的保护作用。在潜在靶点筛选中，大多数与 COVID-19 受体 ACE-2 共表达，提示 COVID-19 的潜在改善作用。它可以通过作用于多个核糖体蛋白来抑制 COVID-19 的复制。COVID-19 可导致强烈的免疫反应和炎症风暴[4]。功能富集分析表明，QPD 可通过

调节免疫相关途径和细胞因子作用相关途径抑制和减轻过度免疫反应，消除炎症[5]。此外，通过对分子对接的预测，发现方药中广藿香醇、麦角固醇和香农酮具有较好的抗-COVID-19 作用，为新药开发提供了新的分子结构[6]。

Traditional Chinese medicine for COVID-19 treatment

Jun-ling, Ren Ai-Hua, Zhang, Xi-JunWang

From current treatment results, TCM based on an over-all symptoms of 2019-nCoV pneumonia patients, has suggested to prescribe prescription that are likely to be effective, such as qingfei paidu decoction (QPD), gancaoganjiang decoction, sheganmahuang decoction, qingfei touxie fuzheng recipe, etc. QPD which consisted of Ephedrae Herba, Glycyrrhizae Radix et Rhizoma Praeparata cum Melle, Armeniacae Semen Amarum, Gypsum Fibrosum, Cinnamomi Ramulus, Alismatis Rhizoma, Polyporus, Atractylodis Macrocephalae Rhizoma, Poria, Bupleuri Radix, Scutellariae Radix, Pinelliae Rhizoma Praeparatum cum Zingibere et Alumine, Zingiberis Rhizoma Recens, Asteris Radix et Rhizoma, Farfarae Flos, Belamcandae Rhizoma, Asari Radix et Rhizoma, Dioscoreae Rhizoma, Aurantii Fructus Immaturus, Citri Reticulatae Pericarpium, and Pogostemonis Herba, has been promoted as a general prescription in the diagnosis and treatment plan of COVID-19 in China [2]. Among the 701 confirmed cases treated by QPD, 130 cases were cured and discharged, clinical symptoms of 51 cases disappeared, 268 cases of symptoms improved, and 212 cases of stable symptoms without aggravation [3]. The effective cure rate of QPD against COVID-19 is over 90 %. According to the theory of TCM, the target organ location of COVID-19 is the lung, and the etiology attribute is “damp and toxin plague”. The network pharmacology analysis showed that QPD has an overall regulatory effect via multi-component and multi-target. The primary site of pharmacological action is the lung, as 16 herbs to lung meridian, which indicated that the decoction is mainly specific for lung diseases. In addition, it can play the role of dehumidification through the rise and fall of the spleen and stomach, and exhibited the protection for heart, kidney and other organs. Among the potential targets screen, most of them co-expressed with ACE-2, the receptor of COVID-19, indicating the potential improvement of COVID-19. It can inhibit the replication of COVID-19 by acting on multiple ribosomal proteins. COVID-19 can lead to strong immune response and inflammatory storm [4]. Functional enrichment analysis showed that QPD could inhibit and alleviate excessive immune response and eliminate inflammation by regulating immune related pathway and cytokine action related pathway [5]. Furthermore, through the prediction of molecular docking, it was found that patchouli alcohol, ergosterol and shionone in the formula had better anti-COVID-19 effect, which provided new molecule structures for new drug development [6].

<https://www.sciencedirect.com/science/article/pii/S1043661820307556?via%3Dihub>

An extremely critical review of the above article was published by Elisabeth Bik in Science Integrity Digest.

<https://scienceintegritydigest.com/2020/03/09/some-critical-notes-on-a-covid-19-paper/>

这应该证明不可能让每个人都快乐。This should prove it is impossible to make everyone happy. 泰国医学研究人员也在寻找传统的医学药典来治疗这种新型冠状病毒。

甘草根

Thai medical researchers are also hunting traditional medical pharmacopeia for cures for the novel coronavirus.

Licorice Root (*Glycyrrhiza glabra*)

<https://www.thailandmedical.news/news/must-read-china-s-secret-to-controlling-the-covid-19-outbreak-is-traditional-chinese-medicine-concoctions-used-alone-or-in-conjunction-with-antiviral->

总而言之，正在进行许多用传统中药（TCM）治疗 COVID-19 的“硬科学”研究。

在中草药用于治疗新型冠状病毒的科学评论中，我发现的最客观的观点发表在备受尊敬的西方医学杂志《自然》上。

In sum there is a lot of fascinating “hard science” research going on to treat COVID-19 with Traditional Chinese Medicines (TCM).

Probably the most objective summary of the treatment of novel corona virus by Chinese herbal medicines was published in the highly respected western medical journal called “Nature.”

重新部署植物防御

“2月17日，中国国务院宣布磷酸氯喹（一种奎宁的结构类似物，最初是从金鸡纳树皮中提取的）可用于治疗 COVID-19 患者。这种抗疟疾药还具有广谱抗病毒活性和对免疫系统的调节作用。在中国多个省份的十多家医院中进行的氯喹磷酸酯的临床评估表明，它可以缓解大多数患者的症状并加速病毒血清转化。”

Redeploying plant defenses

“...On 17 February, the Chinese State Council announced that chloroquine phosphate — a structural analogue of quinine, originally extracted from the bark of cinchona trees — can be used for treating COVID-19 patients. This anti-malarial also has broad-spectrum antiviral activity and regulatory effects on the immune system. Clinical evaluation of chloroquine phosphate in more than ten hospitals across several provinces in China has shown that it alleviates the symptoms for most patients and expedites virus seroconversion.”

[金鸡纳树 (jīnjīnàshù - Cinchona tree) 金鸡纳树的树皮]

另一种从草药中提取的控制 COVID-19 的化合物是甘草酸二铵，甘草根的提取物。武汉大学洪鼎教授提出甘草酸二铵与维生素 C 联合治疗 COVID-19。这种方法通过社交媒体和《健康时报》（健康时报）等出版物的报道而流行起来。它还没有被正式推荐，但是临床试验最近已经被批准...

“Another compound from herbal remedies recruited to control COVID-19 is diammonium glycyrrhizinate, an extract of liquorice roots. liquorice, *Glycyrrhiza glabra*, has long been employed against coughs and colds as well as to settle disturbed digestion, while diammonium glycyrrhizinate has anti-inflammatory activity and is used to treat liver damage caused by hepatitis B. Professor Hong Ding of Wuhan University has proposed a combination of diammonium glycyrrhizinate and vitamin C as a COVID-19 therapy. This approach became popular through social media and reporting in publications such as the Health Times (Jiankang Shibao). It has not been officially recommended, but clinical trials have recently been approved...

[上面的说明：几乎所有中国人都熟悉甘草 gāncǎo（甘草根）作为传统中草药的用法。在许多组合草药配方中，它通常被用作“基础”。但是，有些外国人从未听说过。]

Note for above: Virtually all Chinese are familiar with the use of 甘草 gāncǎo (liquorice root) as a traditional Chinese herbal medicine. It is commonly used as a “base” in many combination herbal medicine formulas. Some foreigners however have never heard of it.]

《自然》杂志上的文章继续：

The article in Nature magazine continues:

“正在提议几种专利草药，例如火香正气胶囊，莲花清温胶囊和板蓝根颗粒（板蓝根颗粒），后两种在治疗期间已被使用。在 2003 年 SARS 冠状病毒爆发中。领先的中药专家张丽（Boli Zhang）就 COVID-19 的治疗提供咨询，声称此类草药在改善咳嗽，虚弱和消化系统疾病等症状以及减轻焦虑方面非常有用。...

例如，钟南山（Nanshan Zhong）领导的一个项目旨在研究莲花清温对 COVID-19 的影响...

在当前的 COVID-19 爆发等紧急情况下，像雷姆西韦（雷德西韦）这样的药物是针对埃博拉病毒的实验性药物，最近被世卫组织助理总干事布鲁斯·艾尔沃德（Bruce Aylward）保留为唯一“我们认为现在可能是具有真正的功效”-花一些时间通过临床试验，但是现成的安全有效的草药和天然产品可以将时间作为第一道防线。

植物不仅对食品很重要，而且对医学也很重要。了解药物的分类，生态学和保存以及次级代谢产物合成的途径对于药物开发很重要。投资于民族植物学，植物化学，植物生理学和生态学的研究对于保护全球人口免受当前和未来的流行病至关重要。

"Several patent herbal drugs, such as Huoxiang Zhengqi capsules (藿香正气胶囊), Lianhua Qingwen capsules (莲花清温胶囊) and Radix isatidis granula (板蓝根颗粒), are being proposed as treatments, the latter two having also been used during the SARS-CoV outbreak in 2003. Boli Zhang, a leading traditional Chinese medicine expert advising on COVID-19 management, claims that such herbal medicines have been very useful in improving symptoms such as coughing, weakness and digestive system disorders as well as alleviating anxiety...

For example, a project led by Nanshan Zhong aims to investigate the effects of Lianhua Qingwen on COVID-19...

In an emergency like the current COVID-19 outbreak, drugs like remdesivir (雷德西韦) — an experimental drug developed against Ebola and recently held up by WHO Assistant Director-general Bruce Aylward as the only “drug right now that we think may have real efficacy” — take time to pass clinical trials, but readily available herbal medicines and natural products with proven safety can buy time as a first line of defence.

Plants are important not only for food but also for medicine. Understanding the taxonomy, ecology and conservation of herbs, as well as the pathways of secondary metabolite synthesis, is important for drug development. Investing in research into ethnobotany, phytochemistry, plant physiology and ecology will be vital in protecting the global population from current and future pandemics.

<https://www.nature.com/articles/s41477-020-0628-0>

绿茶

最后，应该提到的是，绿茶也被西方科学家鉴定为有用的药物。尽管尚未提出将其用作新型冠状病毒的治疗方法，但新型角膜炎病毒在更严重的情况下确实会攻击免疫系统。

Green Tea

Lastly, it should be mentioned that green tea also has been identified by western scientists as a useful medicine. Though it hasn't been proposed as a treatment for novel coronavirus yet, the novel coronavirus does in more severe cases attack the immune system.

发现绿茶对健康有益的机制，自体免疫疾病的新方法，2011年6月3日，俄勒冈州立大学
最新研究表明：“绿茶中发现的一种有益化合物具有强大的能力，能

够增加在免疫功能和自身免疫性疾病抑制中起关键作用的“调节性 T 细胞”的数量。这可能是绿茶对健康有益的潜在机制之一。”

Mechanism discovered for health benefit of green tea, new approach to autoimmune disease, June 3, 2011, Oregon State University

“One of the beneficial compounds found in green tea has a powerful ability to increase the number of "regulatory T cells" that play a key role in immune function and suppression of autoimmune disease, according to new research. This may be one of the underlying mechanisms for the health benefits of green tea.”

<https://www.sciencedaily.com/releases/2011/06/110602143214.htm>

结论 Conclusions

许多流行病学家认为，新型冠状病毒大流行是不可避免的，全世界 60% 至 70% 的人口最终会感染这种病毒。自一月份以来，中国在减缓这种疾病的传播方面取得的成就为世界提供了一个很好的例子，说明如何共同努力为卫生保健系统提供必要的时间来应对这种潜在致命疾病的迅速传播。

Many epidemiologists believe the spread of the novel coronavirus pandemic is inevitable and that 60 to 70 percent of the world population will eventually get this virus. China's achievements in slowing the spread of this disease since January has given the world an excellent example of how to work together to give health care systems the time they need to cope with the rapid spread of this potentially deadly disease.

在严重的新型冠状病毒病例中，显然需要非常强大的药物，如雷德西韦（雷德西韦），通常与其他传统药物联合使用。目前，有 90% 或更多的新型冠状病毒病例是轻度的，而传统中草药似乎是当今世界上最好的治疗方法。

In severe cases of novel coronavirus obviously very powerful drugs like remdesivir (雷德西韦) are needed, usually in combination with other traditional medicines. At this time 90% or more of cases of novel coronavirus are mild, and Chinese traditional herbal medicines appear to be the best treatments available in the world now.

幸运的是，并不是每个人都遵循四旧[sìjiù]的命令！

Fortunately, not everyone has followed the dictates of 四旧 [sì jiù]! "Out with the four olds"

所以，中国的传统医疗体系大多是由我们当中的智者精心保存的，现在我们需要的时候就在那里。

So most of China's traditional medical systems have been lovingly preserved by the wise among us and are there now when we need them.