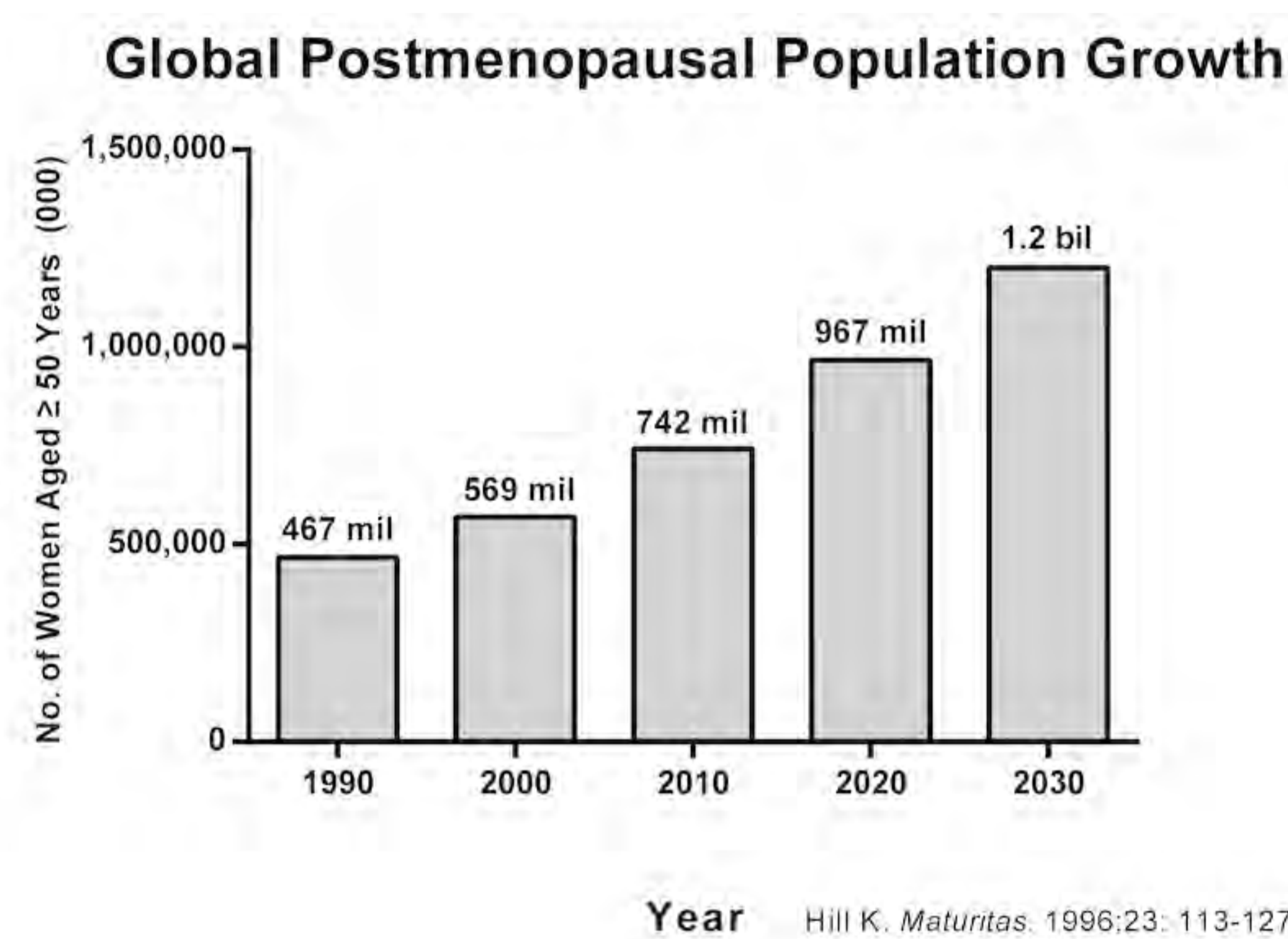
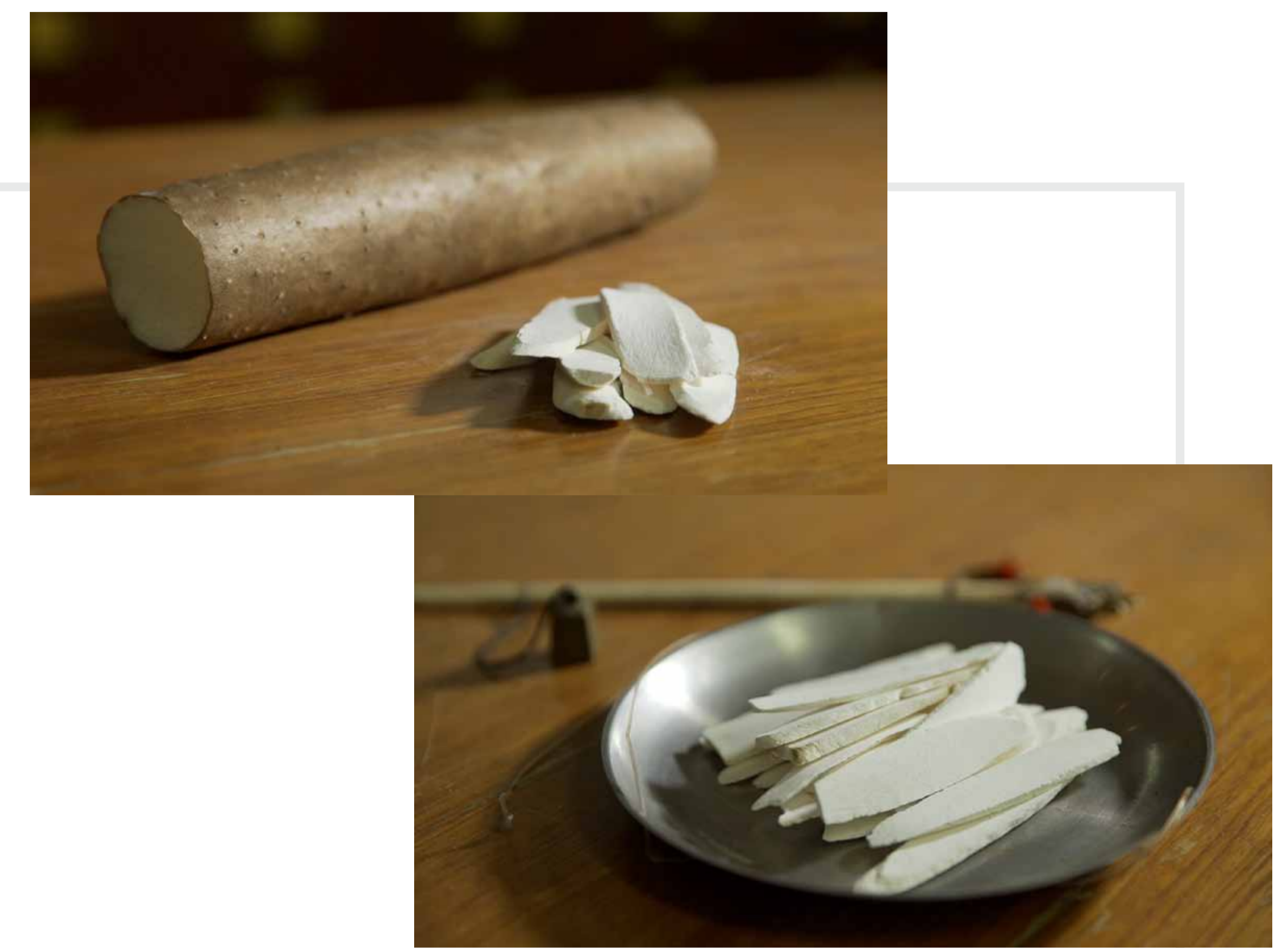




# The Magic of Chinese Yam for Treatment of Menopausal Syndrome

We have isolated a novel bioactive protein from Chinese Yam for treating conditions resulting from low serum estrogen and progesterone levels including osteoporosis, menopausal syndrome and the accompanying cognitive function deterioration.



## THE NEED

Menopause, a **normal part of the ageing process**, is the period during which the levels of estrogen and progesterone secreted by the ovaries gradually decline. Approximately 80% of women experience some menopausal symptoms, including hot flashes, severe night sweating, anxiety, panic, depression, drying and wrinkling of skin, vaginal dryness and discomfort, urinary stress incontinence, cystitis, insomnia, and irritability.

The loss of ovarian hormones (estrogen and progesterone) during menopause is also one of the major risk factors for osteoporosis, which leads to an increased risk of fractures. Besides osteoporosis, menopausal women also face a higher risk of cognitive decline.

The current conventional medical treatment to relieve menopausal syndrome is hormone replacement therapy (HRT). However, some studies found that such treatment might cause **side effects**, including increase in the risk of breast cancer, ovarian cancer and stroke.

## OUR SCIENTIFIC DISCOVERY

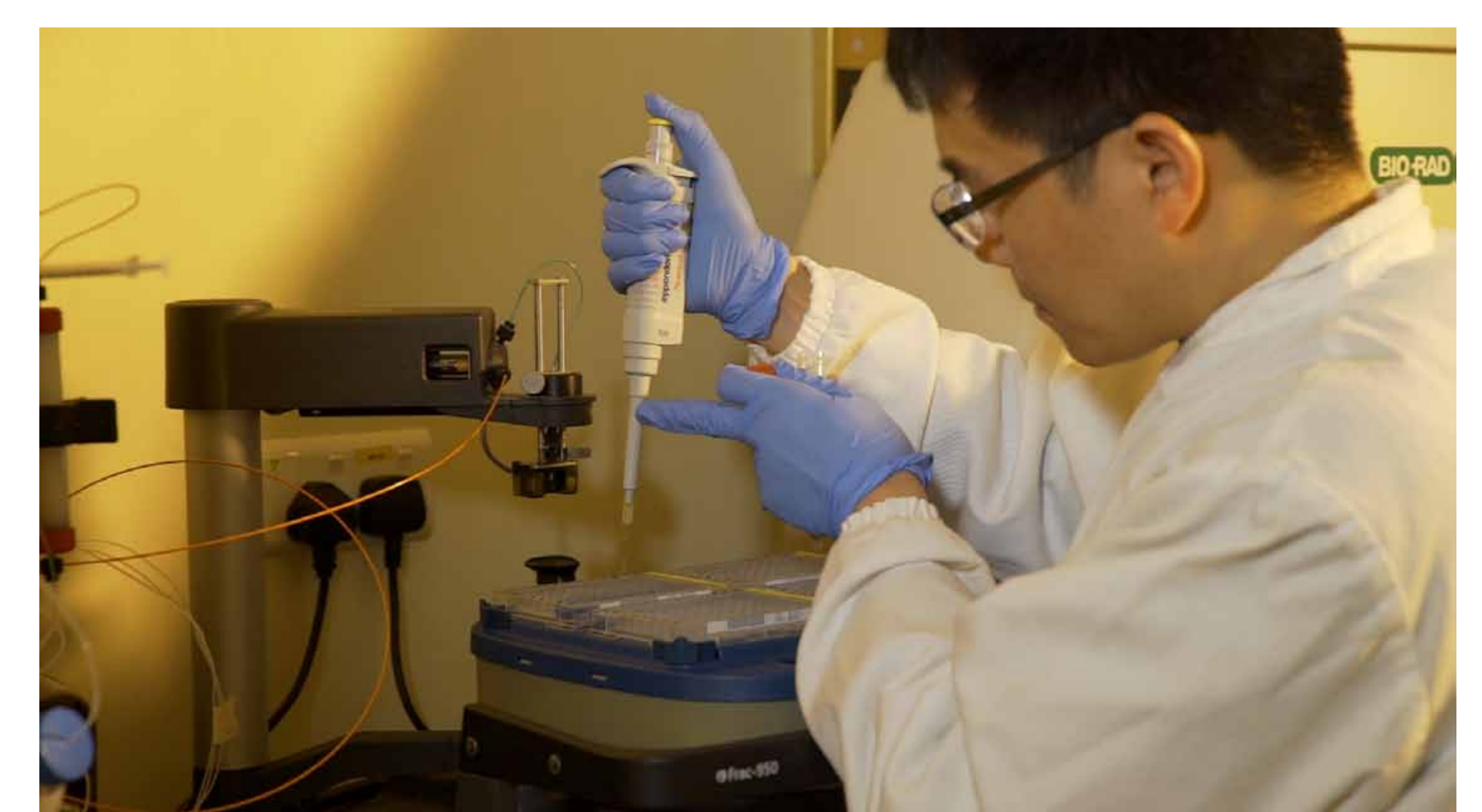
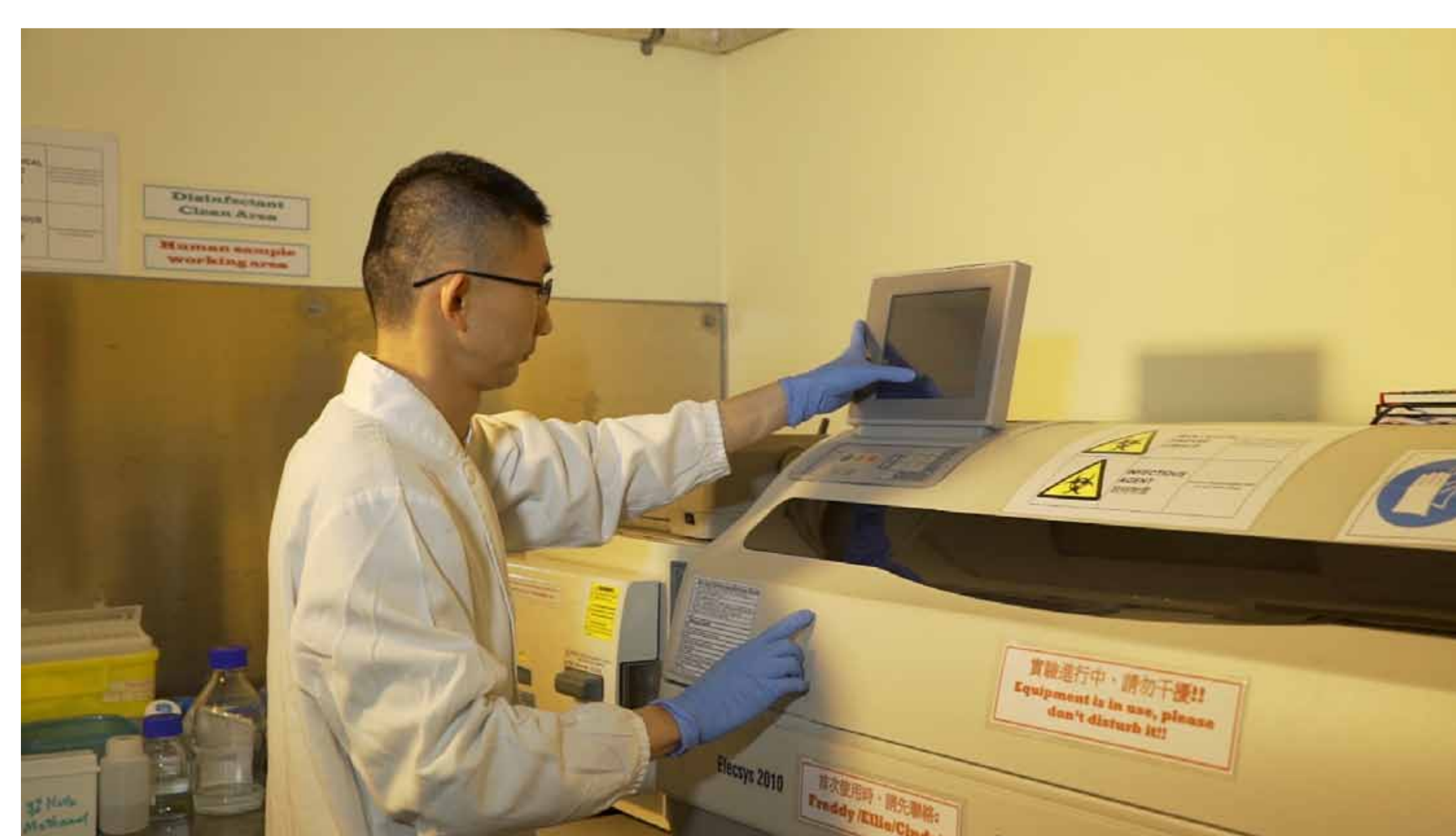
Chinese yam (the tuber of *Dioscorea opposita* Thunb.) is an edible and medicinal herb that is well-known for nourishing *Yin* and invigorating *spleen/lung/kidney*, and commonly used for regulating menstruation and vaginal discharge in Chinese medicine. It has been reported in scientific literature that Chinese yam extract improves the status of sex hormones, lipids, and antioxidants in menopausal women. However, the estrogen-stimulating effect of proteins in Chinese yam had not yet been reported.

A **bioactive protein**, designated DOI, that increases estrogen and progesterone biosynthesis, has been **isolated from Chinese Yam** by the research team led by **Dr Stephen Cho Wing Sze**, Assistant Professor in the School of Chinese Medicine. Their research findings have shown that the DOI protein is effective in treating conditions resulting from low serum estrogen and progesterone levels including osteoporosis, menopausal syndrome and the accompanying cognitive function deterioration. A US Patent has been obtained [Novel Bioactive Protein Isolated from Chinese Yam (U.S. Patent No.: US9273105B2; 1<sup>st</sup> Mar 2016)]. Clinical trials are expected to be launched in the near future.



## ADVANTAGES OVER EXISTING TREATMENTS

The DOI protein stimulates estrogen and progesterone release but does not stimulate the proliferation of breast and ovarian cancer cells. DOI could be a **more efficacious and safer alternative** to HRT for the treatment of menopausal syndrome. It has good potential for development into the first protein drug for the treatment of menopausal syndrome in the future. Our research findings provide a new approach to develop a better treatment plan in dealing with the medical conditions of menopausal syndrome.



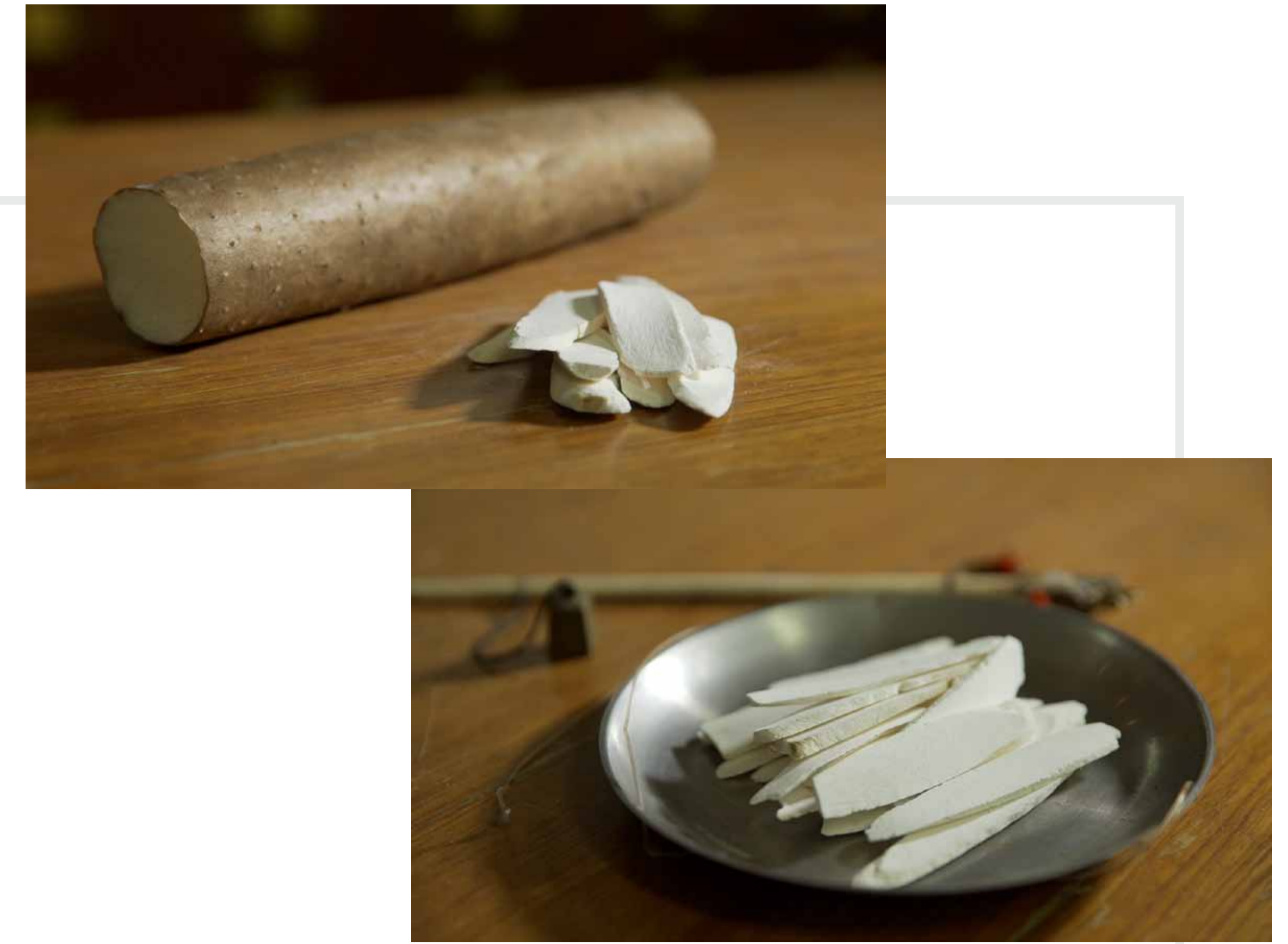
## FIND OUT MORE

International Publication: <https://www.nature.com/articles/srep10179>

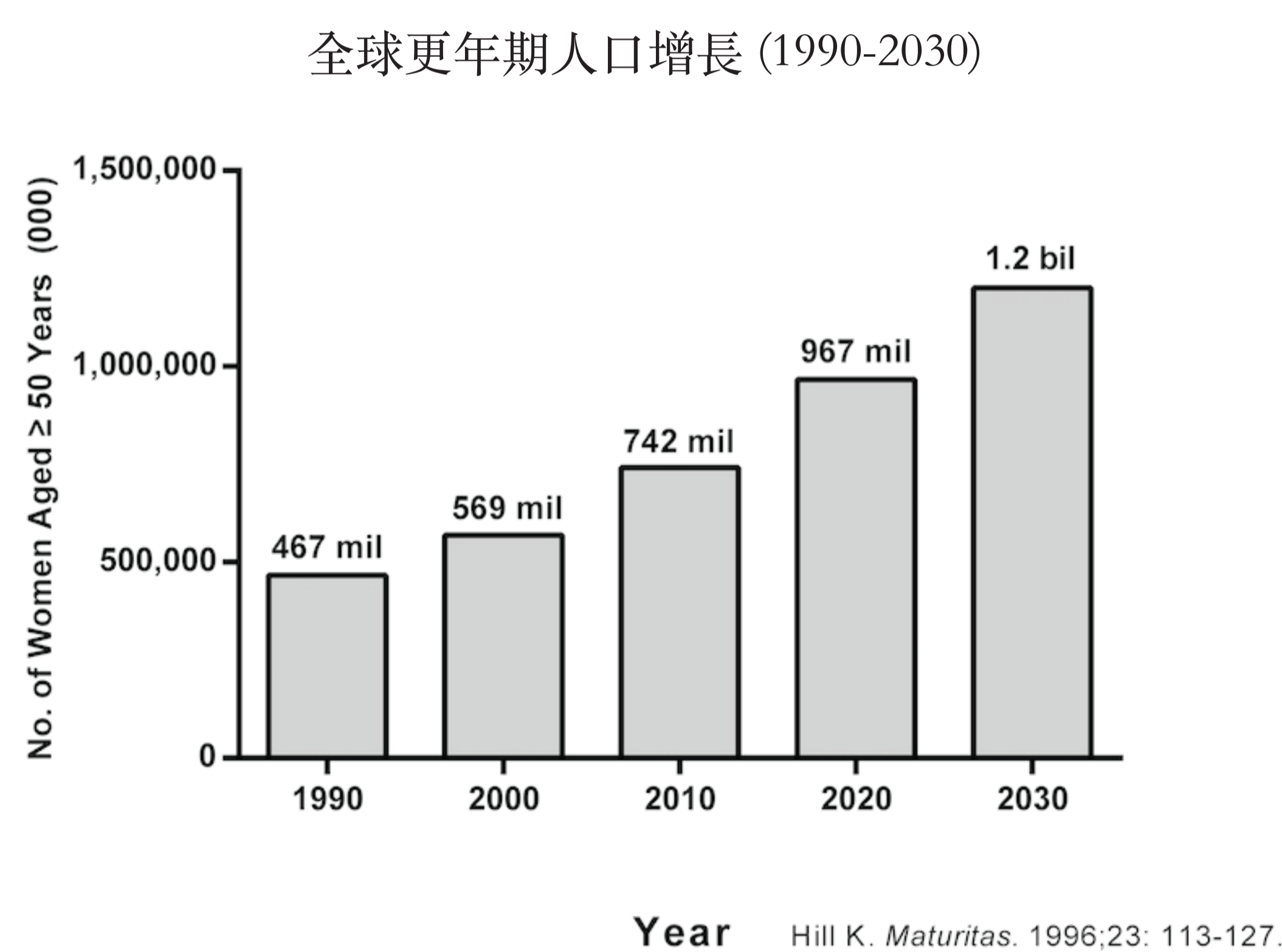


# 神奇的山藥治療更年期綜合症

我們從山藥中提取出一種具生物活性的蛋白，用以治療由於血清雌激素及孕酮水平低下而導致的相關疾病，包括骨質疏鬆、更年期綜合症及相關的認知下降。



## 當前需要



更年期是一段**正常衰老過程**。在此過程中，自卵巢分泌的雌激素和孕酮逐漸下降。約80%的女性會在更年期階段經歷一些癥狀，包括熱潮紅、嚴重盜汗、焦慮、恐慌、抑鬱、皮膚乾皺、陰道乾澀不適、尿道壓力性尿失禁、膀胱炎、失眠和易怒。

更年期期間卵巢激素(雌激素和孕酮)下降亦是引致骨質疏鬆的主要風險因素之一，骨質疏鬆會增加骨折的風險。此外，更年期女性也面對認知下降的風險。

現時一般以荷爾蒙替代療法(HRT)緩解以上癥狀。但是，有研究指出荷爾蒙替代療法可能有**副作用**，包括增加乳腺癌、卵巢癌和中風的風險。

## 港大科研發現

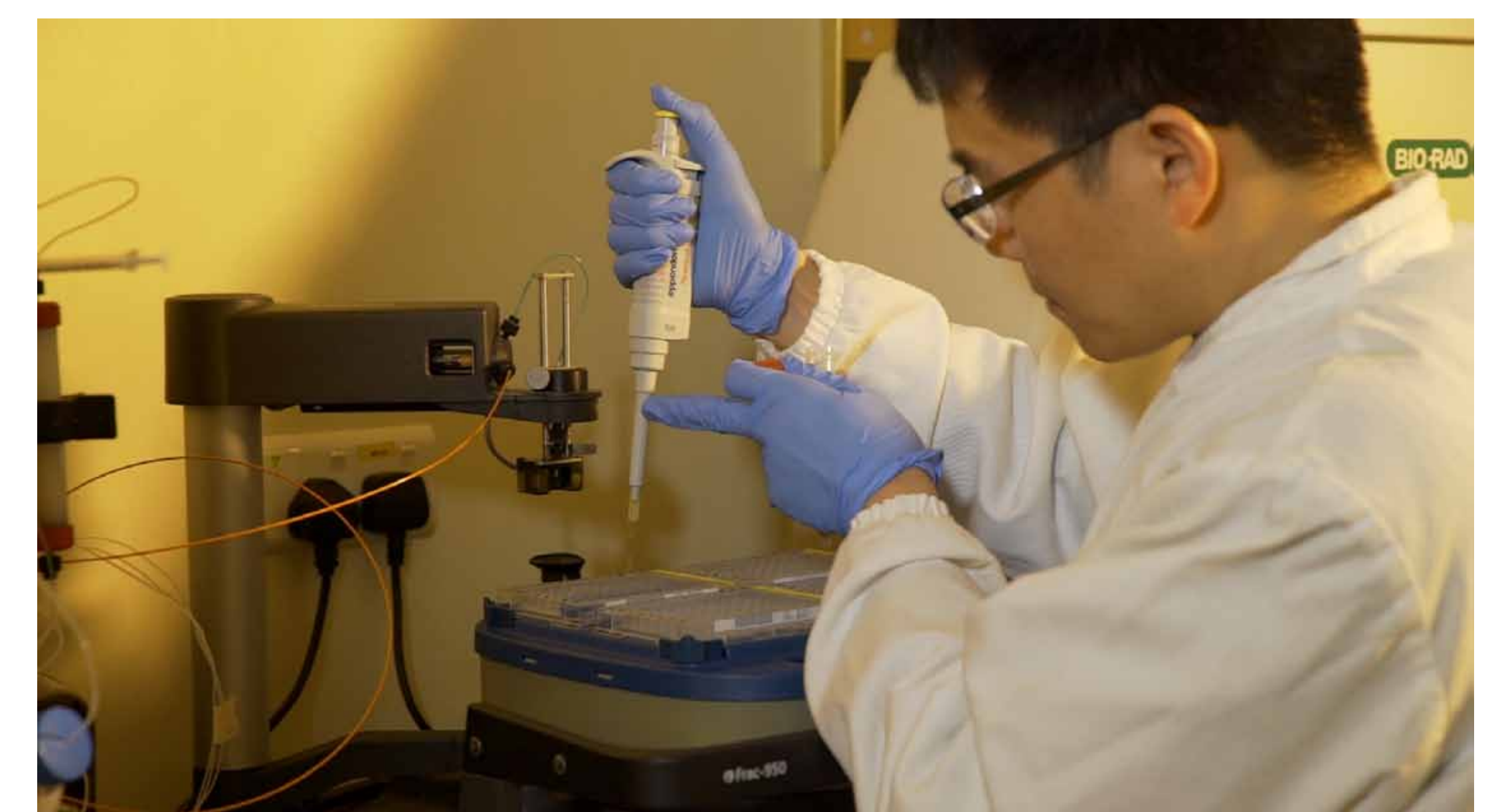
山藥是一種藥食兩用的中藥，益氣養陰、補脾肺腎，中醫廣泛應用於婦女帶下等疾病。研究表明，山藥的提取物可以提高更年期女性體內的性激素、脂質和抗氧化物水平。對於山藥蛋白促進雌激素合成的活性，尚未有相關的科研報告。

由香港大學中醫藥學院助理教授**施祖榮**博士領導的研究組**從山藥中提取**出一種**具生物活性的蛋白**(稱為DOI)，可提高雌激素及孕酮的生物合成。他們的研究發現DOI蛋白可用於治療由於血清雌激素及孕酮水平低下而導致的相關疾病，包括骨質疏鬆、更年期綜合症及相關的認知下降。這項研究成果已獲得美國專利 [Novel Bioactive Protein Isolated from Chinese Yam (U.S. Patent No.: US9273105B2; 1<sup>st</sup> Mar 2016)]。預期在不久將來展開臨床試驗。



## 相對優勢

DOI蛋白刺激雌激素及孕酮分泌，但不會刺激乳腺癌和卵巢癌細胞增生。與荷爾蒙替代療法相比，DOI蛋白將會是治療更年期綜合症**更有效和安全的替代品**，有望將來發展成為首個治療更年期綜合症的蛋白質藥物。這項研究為治療更年期綜合症提供了新的方向，有助發展更好的治療方案。



## 了解更多

國際刊物: <https://www.nature.com/articles/srep10179>