

生物策略

類別	生物策略 (Strategy)
生物策略 (STRATEGY)	表皮保護真菌病原菌的侵擾 (Skin Protects From Fungal Pathogens)
生物系統 (LIVING SYSTEM)	冬南瓜 (Winter squash)
功能類別 (FUNCTION)	#預防真菌 #Protect From Fungi #族群、害蟲及疾病的生物防治 #Biological Control of Populations, Pests, Disease
作用機制標題	南瓜的外皮利用獨特的抗真菌蛋白來幫助保護它們免受真菌病原的侵害。(Skin of pumpkins helps protect them from fungal pathogens using unique antifungal proteins.)
生物系統/作用機制 示意圖	 <p>出處： https://ask-nature.sfo3.digitaloceanspaces.com/wp-content/uploads/2019/10/31120919/pumpkin-skin-Andrea-Lambrecht-720x481.jpeg </p>
作用機制摘要說明(SUMMARY OF FUNCTIONING MECHANISMS)	
<p>在萬聖節，為了驅趕幽靈與妖魔而將南瓜雕刻成南瓜燈 (Jack-o'-Lantern) 的南瓜表皮，含有一種物質，這種物質可能對每年引發數百萬例成人與嬰兒念珠菌感染的微生物產生抑制作用。研究人員 Kyung-Soo Hahm 與 Yoonkyung Park 指出，部分致病性微生物 (disease-causing microbes) 對現有抗生素 (antibiotics) 逐漸產生抗藥性，因此，全球科學界正積極尋找新的抗生素。先前研究顯示南瓜在部分國家長期作為民間藥物使用，並可能具有抗菌作用。</p> <p>本研究從南瓜表皮中提取蛋白質，以評估其對微生物的生長抑制效果，特別是對白色念珠菌 (<i>Candida albicans</i>, <i>C. albicans</i>) 的影響。<i>C. albicans</i> 這種真菌會引發陰道念珠菌感染、嬰兒尿布疹及其他健康問題。細胞培養實驗結果顯示南瓜表皮中具有一種蛋白質能夠有效抑制 <i>C. albicans</i> 的生長，且未表現出明顯毒性。研究指出此種蛋白質具有做為對抗人類念珠菌感染的天然藥物的發展潛</p>	

力。此外，該蛋白質亦能抑制多種攻擊重要農作物的真菌生長，顯示其作為農業殺菌劑的潛在應用價值。

The skin of that pumpkin you carve into a Jack-o'-Lantern to scare away ghosts and goblins on Halloween contains a substance that could put a scare into microbes that cause millions of cases of yeast infections in adults and infants each year. Scientists Kyung-Soo Hahm and Yoonkyung Park note that some disease-causing microbes are becoming resistant to existing antibiotics. As a result, scientists worldwide are searching for new antibiotics. Past studies hinted that pumpkin, long used as folk medicine in some countries, might have antibiotic effects.

The scientists extracted proteins from pumpkin rinds to see if the proteins inhibit the growth of microbes, including *Candida albicans* (*C. albicans*). That fungus causes vaginal yeast infections, diaper rash in infants, and other health problems. One protein had powerful effects in inhibiting the growth of *C. albicans*, in cell culture experiments, with no obvious toxic effects. The pumpkin protein could be developed into a natural medicine for fighting yeast infections in humans, the report suggests. The protein also blocked the growth of several fungi that attack important plant crops and could be useful as an agricultural fungicide.

文獻引用(REFERENCES)

參考文獻清單與連結(REFERENCE LIST)

ScienceDaily (2009 年 10 月 29 日). Pumpkin Skin May Scare Away Germs. <https://www.sciencedaily.com/releases/2009/10/091028114021.htm>

Park, S.-C., Kim, J.-Y., Lee, J.-K., Hwang, I., Cheong, H., Nah, J.-W., Hahm, K.-S., & Park, Y. (2009). Antifungal Mechanism of a Novel Antifungal Protein from Pumpkin Rinds against Various Fungal Pathogens. *Journal of Agricultural and Food Chemistry*, 57(19), 9299–9304. <https://doi.org/10.1021/jf902005g>

延伸閱讀

翻譯者補充：

Ghendov-Mosanu, A., Netreba, N., Balan, G., Cojocari, D., Boestean, O., Bulgaru, V., Gurev, A., Popescu, L., Deseatnicova, O., Resitca, V., Socaciu, C., Pintea, A., Sanikidze, T., & Sturza, R. (2023). Effect of Bioactive Compounds from Pumpkin Powder on the Quality and Textural Properties of Shortbread Cookies. *Foods*, 12(21), 3907. <https://doi.org/10.3390/foods12213907>

生物系統延伸資訊連結(LEARN MORE ABOUT THE LIVING SYSTEMS)

<https://abcnews.go.com/Health/Healthday/pumpkin-fight-yeast->

infections/story?id=8960821
撰寫/翻譯/編修者與日期
陳怡穎翻譯 (2025/03/13)；許秋容編修 (2025/09/11)
Asknature 原文連結
https://asknature.org/strategy/skin-protects-from-fungal-pathogens/