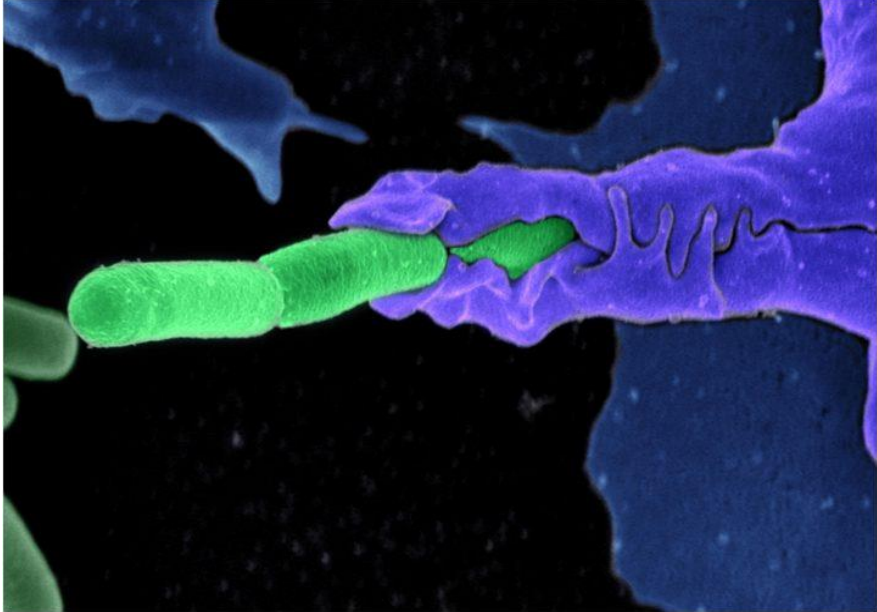


生物策略表

類別	生物策略 (Strategy)
生物策略 STRATEGY	分泌酶溶解死組織 (secrete enzymes that liquefy the dead tissue)
生物系統 LIVING SYSTEM	醫用蛆蟲 (medical maggots) 〔 絲光綠蠅幼蟲 (<i>Lucilia sericata</i> larvae) 〕
功能類別 FUNCTIONS	#保護免受真菌傷害 #保護免受微生物傷害 #保護免於流失液體 # Protect From Fungi # Protect From Microbes # Protect From Loss of Liquids
作用機制標題	Aurase 是一種含有蛆酶的研究產品，旨在幫助去除傷口中的死亡組織或患病組織 (Aurase is an investigational product containing maggot enzymes that aims to help remove dead or diseased tissue in a wound)
生物系統/作用機制 示意圖 (確認版權、註明出處；畫質)	
作用機制摘要說明 (SUMMARY OF FUNCTIONING MECHANISMS)	

蛆 (maggot) 以死亡和垂死的組織為食，它們會分泌酶來消化傷口碎片，留下健康的傷口以供癒合。

蛆沒有牙齒或喙，無法撕成陳舊乾掉的肉。相反，當它們爬過屍體時，它們的嘴鉤 (mouth hook) 和粗糙的皮膚會刮掉死肉。然後它們分泌酶來溶解死組織，使其更容易吞嚥和消化。蛆蟲分泌物含有至少 185 種單獨的肽酶，其中一些與減少炎症、消除細菌、凝血和刺激癒合反應有關。

Maggots feed on dead and dying tissue and are known to secrete enzymes that allow them to digest the wound debris, leaving behind a healthy wound for healing.

Maggots lack the teeth or beaks that would enable them to tear into old, dried-out meat. Instead, their mouth hooks and rough skin scrape away dead flesh as they crawl across a carcass. Then they secrete enzymes that liquefy the dead tissue, making it easier to swallow and digest. Maggot secretions contain at least 185 individual peptidase enzymes, some of which have been linked to reducing inflammation, eliminating bacteria, coagulating blood, and stimulating healing responses.

文獻引用 (REFERENCES)

「臨床經驗表明，蛆蟲治療可以比傷口敷料更快地實現清創。一項僅涉及 12 名 VLU 患者的幼蟲治療 RCT 發現，與水凝膠相比，蛆蟲治療的結果是更快的清創 (debridement)。」(Naik G 等人 2017：123)

「蛆蟲清創療法的治療作用可以說是多因素的，幼蟲對腐爛和感染傷口的癒合有益。此主要是由於幼蟲的機械和生理特性，並由治療用的酶/化學成分輔助。蛆蟲在蛋白質物質上茁壯成長，它們在體外消化這些物質並隨後將其作為食物。」(Naik G 等人 2017：123)

「最近，從絲光綠蠅幼蟲的分泌物中分離出一種關鍵酶，即具有類糜蛋白酶活性的昆蟲特異性絲氨酸蛋白酶，並顯示其可離體降解靜脈腿潰瘍蛻皮。已經顯示了絲光乳桿菌幼蟲對傷口癒合過程和肉芽組織形成的影響，特別是通過改變成纖維細胞與膠原蛋白和纖維蛋白的粘附性，並且有進一步的證據表明幼蟲排泄物之間的協同作用已被證明影響不同抗生素的抗菌活性。」(Elizabeth Mudge 等人 2014：44)

“Clinical experience suggests that larval therapy can achieve debridement more swiftly than wound dressings. One RCT of larval therapy, involving only 12 patients with VLU found that larval therapy resulted in quicker debridement compared with a hydrogel”. (Naik G et al 2017：123)

“The therapeutic action underlying larval debridement therapy can be described as multifactorial with larvae exerting a beneficial effect on the healing of sloughy and infected wounds. The activity is primarily due to the mechanical and physiological properties of the larvae and is assisted by the enzymatic/chemical components of the therapy. Larvae thrive on proteinacious material, which they digest extracorporally and subsequently take up as their food.” (Naik G et al 2017：123)

“More recently, one key enzyme, insect-specific serine proteinase with a chymotrypsin-like activity, was isolated from secretions of *Lucilia sericata* larvae and shown to degrade venous leg

ulcer slough ex vivo. The impact of *L. sericata* larvae on the wound healing process and granulation tissue formation has been shown, in particular by modifying fibroblast adhesion to collagen and fibronectin, and there is further evidence of synergism between larval excretions that have been shown to influence the antibacterial activity of different antibiotics.”(Elizabeth Mudge et al 2014 : 44)

參考文獻清單與連結 (REFERENCE LIST) Harvard 或 APA 格式

Naik G, Harding KG (2017) .Maggot debridement therapy: the current perspectives. Dove Press 4 Pages 121—128.(<https://www.dovepress.com/maggot-debridement-therapy-the-current-perspectives-peer-reviewed-fulltext-article-CWCMR>)

Elizabeth Mudge, Patricia Price, Neal Walkley, Keith G Harding (2014) A randomized controlled trial of larval therapy for the debridement of leg ulcers: results of a multicenter, randomized, controlled, open, observer blind, parallel group study. PubMed 22(1):43-51.(<https://pubmed.ncbi.nlm.nih.gov/24299513/>)

延伸閱讀: Harvard 或 APA 格式 (取自 AskNature 原文; 若為翻譯者補充, 請註明)

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

撰寫/翻譯/編修者與日期

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AskNature 原文連結

<https://asknature.org/innovation/improved-wound-debridement-using-maggot-enzymes/>

更多補充的圖片 (1. 確認版權、註明出處 2. 品質: 盡量 72dpi 或 300K)

1. SolasCure Abridged Intro

https://www.youtube.com/watch?v=DZ_IoKDDp0c&t=113s