Institute of Molecular Medicine
Laboratory of Microbial Biotechnology
Professor Hwan-You Chang （張晃猷教授）

Mission: To harness diverse microbial capabilities for human use

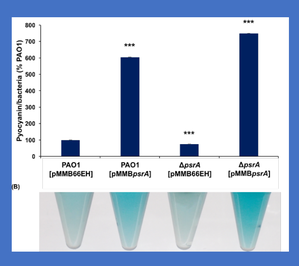
探討人體重要病原綠膿桿菌得毒性因子調控以及造成疾病的機轉。

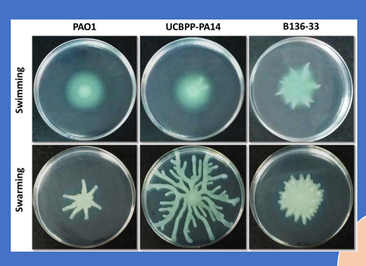
Bacterial pathogenesis

Identification of novel virulence factors

Regulation of virulence factor synthesis

Genomics of diarrheagenic *Pseudomonas aeruginosa*





Regulation of pyocyanin production (left) and bacterial motility (right)

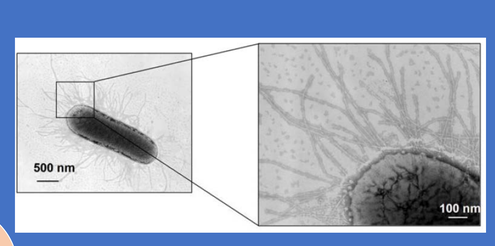
搜尋能抑制有害細菌以及大腸癌細胞生長，以及能吸附重金屬和有毒化合物的各種微生物，作為益生菌使用。

Microbiome and Probiotics

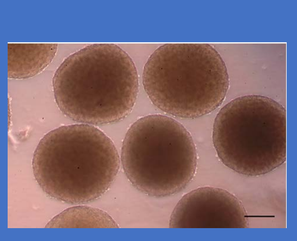
Inhibition of pathogen growth

Inhibition of tumor growth

Bioremediation of Ni, As, and Ag using cell surface display technology

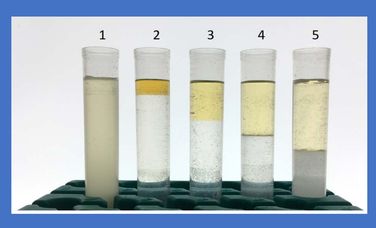


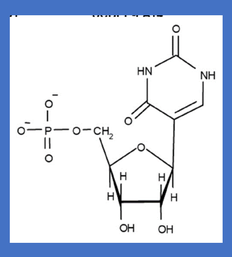
Fimbriae display system to chelate heavy metals



In vitro tumor model for selection of probiotics

Microbes





Some important chemicals produced using metabolic engineering technology

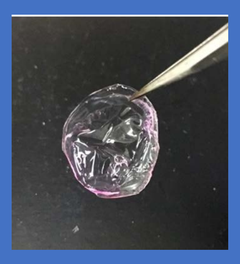
Biochemical engineering

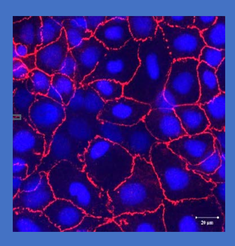
Biofuels

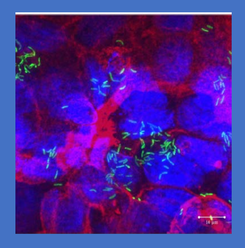
Special nucleotides

mRNA drugs/vaccines

利用微生物生產重要生質能源以及化學品，並進而利用於核酸藥物與疫苗的製備。







Cell sheet made of silk fibroine (left); cell morphology on the cell sheet (middle); and use of the cell sheet for bacteria infection (right)

Tissue engineering

Cell sheet technology

Bacteria infection model

Wound healing biomaterials

利用蠶絲蛋白堅韌的特性發展細胞層片技術，用於傷口癒合治療以及微生物感染模式。

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