

# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

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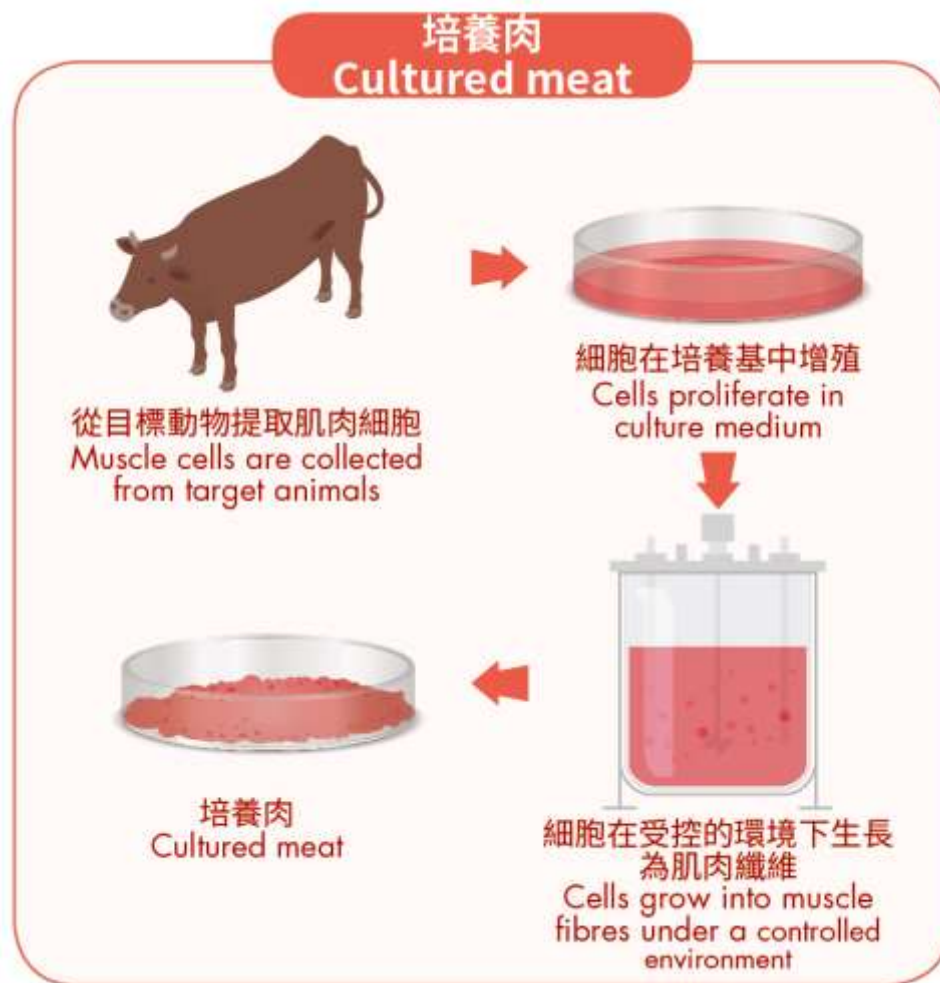
# WHAT IS CULTURED MEAT?

## 甚麼是培養肉？

- Cultured meat, also referred to as lab-grown meat, in vitro meat, etc, is meat produced from animal cell culture techniques. It is intended to be consumed as an alternative to conventional meat products.
- 培養肉又稱實驗室培養肉、試管肉等，是以動物細胞培養技術生產的肉，擬用作傳統肉類食品的替代品。

# PRODUCTION OF CULTURED MEAT

## 培養肉的生產方法



# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

- The production of cultured meat involves animal cell culture technology that is relatively new to food production. There is thus concern on the potential food safety risks to consumers.
- Currently, places such as the Mainland China, European Union, Australia, New Zealand, Canada and Singapore have taken into account different considerations in their control of cultured meat and put in place assessment criteria for the evaluation of food safety of culture meat products prior to marketing.
- 生產培養肉涉及動物細胞培養技術，而將其用於食物製造方面仍是相對新的技術。因此，培養肉對消費者的潛在食物安全風險受到關注。
- 現時，中國內地、歐洲聯盟、澳洲、新西蘭、加拿大和新加坡等地區經過不同方面的考慮後，對培養肉進行規管，並訂立評估準則，以在培養肉製品推出市場前進行食物安全評估。

# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

- In producing cultured meat for human consumption, the developer has the responsibility for ensuring that the product is safe for human consumption.
- In the safety assessment of cultured meat, the information required generally involves information on production, data on composition, allergenicity, toxicological and nutritional aspects, etc.
- 在生產供人食用的培養肉時，開發商有責任確保產品可供人安全食用。
- 對培養肉進行安全評估時，要求的資料一般包括生產程序、成分數據、致敏性，以及毒理和營養等方面的資料。

# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

**Aspects evaluated in the safety assessment of cultured meat generally include:**

- Characterisation of the cultured meat
  - Identity and purity (e.g. major components and impurities present)
  - Structure
  - Physical and chemical properties

培養肉的安全評估一般涵蓋以下範疇：

- 培養肉的特質
  - 屬性和純度(例如主要成分和所含雜質)
  - 結構
  - 物理和化學特性

# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

### ■ Production process

- Detailed description of the production process
- Information such as the source and preparation of cell lines, culture media and scaffolding materials used, purity and genetic stability of cell culture during the manufacturing process

### ■ Compositional data

### ■ Specifications

- Key chemical, physical and microbiological parameters

### ■ 生產程序

#### ■ 生產程序的詳細說明

- 相關的資料，例如細胞系的來源和準備過程、所用的培養基和支架物料，以及生產過程中細胞培養物的純度和基因穩定性。

### ■ 成分數據

### ■ 規格

- 主要的化學、物理和微生物參數

# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

- Proposed uses and levels of consumption
  - Target groups
  - Consumption amount
  - Estimate of exposure to undesirable substances
  - Precautions and restrictions of use
  - Any use in other countries / places

- 建議的用途及食用水平
  - 目標羣組
  - 食用量
  - 不良物質的估計攝入量
  - 注意事項和使用限制
  - 其他國家/地區的使用情況(如有)



# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

### ■ Toxicokinetics information

- Absorption, distribution, metabolism and excretion

### ■ Nutritional information

### ■ Toxicological information

- Acute toxicity
- Chronic toxicity
- Carcinogenicity
- Genotoxicity
- Reproductive and developmental toxicity

### ■ 毒物動力學資料

- 吸收、分布、代謝和排泄

### ■ 營養資料

### ■ 毒理學資料

- 急性毒性
- 慢性毒性
- 致癌性
- 基因毒性
- 生殖和發育毒性

# SAFETY ASSESSMENT OF CULTURED MEAT

## 培養肉的安全評估

- Allergenicity
  - Analytical detection method
  - Any safety assessment reports conducted by food safety authorities in other countries / places; and
  - Any other relevant information to support the safety (e.g. digestibility assays for cultured meat).
- 致敏性
  - 分析檢測方法
  - 其他國家/地區食物安全機構的安全評估報告(如有); 以及
  - 其他安全性證明資料(例如培養肉消化率檢測)。

# LOCAL SITUATION

## 本港情況

- At present, cultured meat products are not yet commercially available in Hong Kong.
- The current production technology is still costly and requires research and development to further reduce the cost and make large-scale production of cultured meat more economically viable.

■ 現時本港未有培養肉發售。

■ 現今培養肉的生產技術仍然費用高昂，開發商需要繼續進行研發，進一步降低成本，使培養肉的大規模生產更符合經濟效益。

# LOCAL SITUATION

## 本港情況

- According to the Public Health and Municipal Services Ordinance (Cap 132), all food for sale in Hong Kong should be wholesome and fit for human consumption. The Ordinance applies to all foods including cultured meat. Developers of cultured meat should ensure that the cultured meat products are safe for human consumption.
- 根據《公眾衛生及市政條例》(第132章)，所有在香港出售的食物應合乎衛生和適宜供人食用。該條例適用於所有食物，包括培養肉在內。培養肉的開發商應確保培養肉產品可供人安全食用。

THANK YOU  
謝謝