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Woolly mammoth meatballs: Food of the future?

猛犸象肉丸会是未来的肉类替代品吗？

荷兰尼莫科学博物馆（NEMO Science Museum）展出了一个用已灭绝的猛犸象的脱氧核糖核酸（DNA）制成的肉丸。澳大利亚公司 Vow Foods 为一个寻找替代肉类生产方法的项目培植了这个肉丸，为世界首例。

Sadly, I'm yet to taste the woolly mammoth meatball. But I can tell you it's been made by making the **DNA sequence** for a muscle protein from a long-extinct mammoth, which scientists say gives the **synthetic** substance its meaty flavour.

遗憾的是，我还没有品尝过猛犸象肉丸。但我可以告诉你，肉丸是通过提取灭绝已久的猛犸象肌肉蛋白中的脱氧核糖核酸序列制成的，科学家们说，这使这种人工合成物具有肉味。

The scientists, based at the Australian Institute for Bioengineering at the University of Queensland, then used elephant DNA to **bolster** the gaps left in the mammoth sequence and grew the meat from a sheep's **stem cells**.

在提取猛犸象的脱氧核糖核酸后，澳大利亚昆士兰大学生物工程与纳米技术研究所的科学家们用大象的脱氧核糖核酸填补了猛犸象序列中缺失的空白，并在绵羊的干细胞中培植出了这种肉。

If you're lost, just imagine taking **cuttings** from a plant and growing them in a greenhouse. In the same way, cells are taken from the animal, given the **vitamins**, **nutrients** and **minerals** they would get in the animal, and then the cells are grown to make the meat. In just a couple of weeks, 20 billion cells were used by the company to grow the mammoth meat, which hasn't been tasted in around 4,000 years.

如果你还是对肉丸的制法摸不着头脑，不妨想象一下从植物上剪下插枝，种在温室里的过程。科学家们用同样的方法从动物身上提取细胞，并将这种动物体内含有的维生素、营养素和矿物质喂给这些细胞，再将其培植成肉。在短短几周内，该公司用了 200 亿个细胞培植出了已有约 4000 年没人吃过的猛犸象肉。

The firm, Vow, said it chose the woolly mammoth because it's a symbol of environmental loss. It's all part of a growing movement to make more **sustainable** meat.

Vow 公司表示，之所以选择猛犸象是因为它象征着环境的破坏。整个项目都是一场日益壮大的倡导活动的一部分，目的是制造可持续生产的肉类。

While plant-made alternatives are now common, meat grown from stem cells in a lab, without animal **slaughter**, is creating many kinds of replacements for the sheep, pig, chicken and cow meat usually made in large-scale production farms. If made at **scale**, lab-grown meat could cut the climate impact of farm meat by up to 92 percent, reduce air pollution by up to 94 percent, and use 90 percent less land, according to a recently peer-reviewed journal article.

虽然替代肉类的植物性食品现在很常见，但在实验室里用干细胞培植出来的、不屠宰动物就能生产的肉类为常在大型农场生产的羊肉、猪肉、鸡肉和牛肉创造了多种替代品。近期一篇经同行评审的期刊文章中说，如果大规模生产，实验室培植的肉类可减少多达 92%的农场生产的肉类会造成的气候影响，同时减少高达 94%的空气污染和90%的土地使用。

Vow is not the first firm to try to make lab-grown meat from an extinct animal. In 2018, another made Gummi Bear sweets out of **gelatine** created from the DNA of a mastodon, a relative of the mammoth. Others are looking into **cultured** meat from buffalo, peacock and crocodile – if that **whets your appetite**.

Vow 并不是第一家尝试用已灭绝动物培植实验室肉类的公司。2018 年，另一家公司用猛犸象的近亲乳齿象的脱氧核糖核酸产生的动物胶制成了小熊软糖。如果你对实验室培植肉感兴趣的话，其它公司在研发用水牛、孔雀和鳄鱼的脱氧核糖核酸培植肉类，这些肉可能会激起你的食欲。

1. 词汇表

DNA sequence	脱氧核糖核酸序列
synthetic	人造的，合成的
bolster	加强，文中指“填补”
stem cells	干细胞
cuttings	插条，插枝
vitamins	维生素
nutrients	营养素

minerals	矿物质
sustainable	可持续生产的
slaughter	屠宰
scale	规模
gelatine	动物胶
cultured	人工养殖的，培育而成的
whets your appetite	激起你的食欲

2. 阅读理解：请在读完上文后，回答下列问题。（答案见下页）

1. What was used to bolster the gaps left in the woolly mammoth sequence?

2. When is it thought woolly mammoth meat was last tasted?

3. What is one impact of the development of lab-grown meat on the current meat industry?

4. True or false? *Producing lab-grown meat on a large scale could help the climate.*

3. 答案

1. What was used to bolster the gaps left in the woolly mammoth sequence?

Scientists used elephant DNA to bolster the gaps left in the mammoth sequence.

2. When is it thought woolly mammoth meat was last tasted?

It hasn't been tasted in around 4,000 years.

3. What is one impact of the development of lab-grown meat on the current meat industry?

Meat grown from stem cells in a lab prevents animals being slaughtered.

4. True or false? *Producing lab-grown meat on a large scale could help the climate.*

True. One journal claims, if made at scale, lab-grown meat could cut the climate impact of farm meat by up to 92 percent.