参考译文

This is Scientific American's 60-second Science, I'm Susanne Bard.

这里是科学美国人——60秒科学系列，我是苏珊娜·巴德。

Blood donations save lives. But blood can only be stored under refrigeration for up to six weeks. After that, it's no longer usable for transfusions.

献血可以挽救生命。但是血液最多只能冷藏保存6周。之后，就无法再用于输血。

"Because of that limitation, people have to continually donate blood to meet the needs. But also, in places where refrigeration may not be available, that can also be a challenge. It's difficult to have blood available when needed."

“因为这个限制，人们必须不断献血以满足需求。但在可能没有冷藏的地方，这也是个挑战。在有需要时很难有血液供应。”

University of Louisville bioengineer Jonathan Kopechek. He says disruptions to regular blood donations due to COVID-19 have put stress on the blood supply, and the pandemic underscores the need for more reliable long-term storage methods. Blood can be frozen for extended periods of time...

路易斯维尔大学的生物工程师乔纳森·科佩奇说到。他表示，新冠肺炎导致的定期献血中断，给血液供应带来了压力，而且这场疫情凸显出人们对更可靠的长期储存方法的需求。血液可以长时间冷冻……

"But it's pretty rare because of all the challenges and complexities with that process."

“但这非常罕见，因为这一过程存在种种挑战和复杂问题。”

Instead Kopechek's team has developed a method of preserving blood so it can be stored in a dehydrated state at room temperature. To do so, they turned to an unusual preservative: a sugar called trehalose, which is a common ingredient in donuts...

相反，科佩奇的研究团队开发出一种保存血液的方法，使其可以在室温下以脱水状态保存。为此，他们找到了一种不同寻常的防腐剂：海藻糖，这种糖是甜甜圈中的常见配料……

"To help make them look fresh even when they might be months old, and you wouldn't know the difference."

“这种糖有助于让甜甜圈看起来很新鲜，即使已经是几个月以前的甜甜圈，你也不会知道有何区别。”

The researchers chose trehalose because, in nature, it's made by hardy animals like tardigrades and sea monkeys—aka brine shrimp—famous for their ability to survive dehydration.

研究人员选择海藻糖是的原因是，它来自自然界中沙蜥蜴和海猴(又称卤虫)等坚韧动物，它们都以脱水生存能力而闻名。

"So these animals can d﻿ry out completely for a long period of time and then be rehydrated and resume normal function. So we wanted to use the trehalose that's produced by these organisms and apply that to preserving blood cells in a dried state, just like those organisms are."

“因此，这些动物可以完全脱水相当长一段时间，还能再水合并恢复正常功能。因此，我们想用这些生物产生的海藻糖，将血液细胞保持在干燥状态存储，就像这些生物一样。””

But first, the researchers had to get trehalose into blood cells. They used ultrasound to drill temporary holes in the cell membranes—which let some trehalose get in.

但首先，研究人员必须让海藻糖进入血细胞。他们用超声波在细胞膜上钻出临时小孔，让一些海藻糖进入。

"And they need to have sufficient levels of trehalose on both the inside and the outside of the cell in order to survive the dehydration and rehydration process."

“他们要让细胞内外保持足够的海藻糖水平，才能让细胞在脱水和再水合过程中存活下来。”

At that point, the blood could be dried and made into a powder.

这种情况下，就可以将血液干燥并制成粉末。

"And then we can rehydrate the blood and have it return back to normal."

“之后，我们就可以让血液再水合，将其恢复正常。

The team is still trying to improve yields but thinks the dried blood could be stored at room temperature for years. The study is in the journal Biomicrofluidics.

该团队仍在努力提高产量，但他们认为干燥血液可以在室温下储存多年。这项研究发表在《生物微流体》期刊上。

Kopechek says the technique could be ready for clinical trials in three to five years. If successful, it could be used to create stores of dried blood in case of future pandemics or natural disasters—and for humanitarian aid work, military operations or even missions to Mars. Maybe first aid kits on the Red Planet will include dried red blood cells.

科佩奇表示，这项技术可以在三到五年内做好临床试验的准备。如果成功，这项技术就可以在未来发生疫情或自然灾害等情况下建立干燥血液储存，或者是用于人道主义援助工作、军事行动，甚至是火星任务。或许，那颗红色星球(指火星)上的急救包里，会有这种干燥的血红细胞。

Thanks for listening for Scientific American's 60-second Science. I'm Susanne Bard.

谢谢大家收听科学美国人——60秒科学。我是苏珊娜·巴德。

听力原文

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