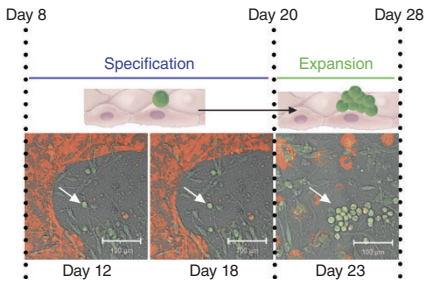
Building new blood cells

In the darkness of the Carson Family Auditorium at Rockefeller University, Matt Kohn, a science officer from NYSTEM, was waving to get the speaker's attention. Shahin Rafii looked up from the lectern and asked how much time he had left for his presentation. "Two minutes? Perfect... plenty of time."

Rafii, an animated and fast-talking stem cell scientist from Weill Cornell Medicine, NY, was moving particularly quickly through his slides, while deftly ensuring the most important details were hitting the audience. His pace had to be forgiven. In 30 minutes, he was trying to sum up a quest that has taken stem cell biologists nearly 20 years to achieve; *in vitro* generation of hematopoietic stem cells (HSCs).



Live confocal images of expanding HSCs (green label) during an 'expansion phase.' Adapted from *Nature* **545**, 439–445; 2017.

The results he discussed at the conference now appear in a recent issue of *Nature*, and provide a novel recipe for converting adult endothelial cells into immature HSCs (*Nature* **545**, 439–445; 2017). The protocol, which relied on transient expression of specific transcription-factor genes, was developed using mice (see another protocol by a different group using human pluripotent stem cells: *Nature* **545**, 432–438; 2017), but provides an important proof of principle and a foundation for moving into humans, where clinicians hope to induce HSCs directly from a patient's own tissue.

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