

'Spaghetti' scaffolding could help grow skin in labs

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Scientists are developing new scaffolding technology which could be used to grow tissues such as skin, nerves and cartilage using 3D spaghetti-like structures. Their research is highlighted in the latest issue of *Business*, the quarterly highlights magazine of the Biotechnology and Biological Sciences Research Council.

The new structures are being developed by scientists from the University of Bristol, using proteins from alpha helices - one of the fundamental ways that strings of [amino acids](#) fold - to create long fibres called hydrogelating self assembling fibres (hSAFs), or hydrogels. By learning how to build hSAFs from scratch, the researchers are starting to understand how they might use these 3D scaffolds to support the growth of nerves, blood vessels and cartilage tailored to the needs of individual patients.

Professor Dek Woolfson who is leading the work, explains: "To make hydrogels you need something long and thin that will interact with copies of itself and form meshes, but is also water soluble. However rather than using natural proteins, which are complex, we've tried to make something as simple as possible that we fully understand using peptides and self assembling proteins."

Currently, [hydrogel scaffold](#) structures, made either synthetically or from natural resources such as seaweed, are used in everyday products from shampoos to drug capsules.

But explains, Professor Woolfson, the hSAFs his team are developing will have different uses: "The downside of using [peptides](#) or proteins is that they are expensive compared with synthetic polymers. We are almost certainly looking at high end biomedical applications, generating cells which can be used in living systems. Potential medical benefits include growing tissues such as skin, nerves and cartilage in the laboratory which will advance basic research and may lead to biomedical applications like speeding up wound healing and grafting."

Commenting on the research, BBSRC Chief Executive Professor Doug Kell, said: "This research highlights the importance of understanding how things work at a micro level and then looking at different ways to apply this knowledge to create effective solutions for tackling everyday problems, in this instance, translating basic bioscience into technology which could have very real clinical benefits for patients."

This research is featured in the latest edition of Business, the quarterly magazine of BBSRC.

More information: To read the full article, click [here](#).

Source: Biotechnology and Biological Sciences Research Council ([news : web](#))

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