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She sells stem cells

Could these little gems be the elixir of youth? *by Michelle Bateman*

What's that ringing? That's your cell phone – it's calling from the cutting edge of anti-ageing science.

FACTOR IT IN

Remember that terrible cell phone joke at the start of this article? That's even more relevant to growth factors, a type of protein that acts as the body's intracellular messaging system. "Growth factors are proteins that help cells signal to each other to stimulate cell growth," says *WH* dermatology expert Dr Elizabeth Davies-Higgs. "They are very important in wound-healing. Ageing is believed to be closely related to wound-healing which explains the interest in growth factors and their importance in the repair of damaged tissue." SkinMedica's TNS Recovery Complex, \$199 (1), uses growth factors, which claims to help boost collagen production and improve the appearance of fine lines and wrinkles.

OK, go ahead and groan but, jokes aside, stem cells are big news in the world of beauty. These building blocks have everyone talking – they're being used to treat serious conditions such as leukemia, and now they're shaking up your skincare, too. Yep, scientists are learning more about the role they play in the ageing process and plant stem cells are making cameo roles in an increasing number of beauty products. So much hope is pinned on their potential that some major cosmetics companies have been studying them for 20 years.

But – and it's a big but – there's still plenty researchers don't yet know about how stem cells work. Scientist Dr Megan Munsie, head of the education, ethics, law and community awareness unit at Stem Cells Australia, talks about

a "vacuum" that exists between our hopes and the actual ability of stem cell science to treat illnesses right now. And yes, that includes wrinkles.

Building blocks

Let's take a step back and slather on some science first: sure, we're essentially talking about face cream but to really understand how stem cells work, you need to get up to speed on biology 101.

The genius of true embryonic stem cells is that they're capable not only of self-renewing, but also of generating any of the 200-odd cell types in the body, from hair and skin to tissues, bones



and blood; the whole of our biology literally "stems" from them.

There's a second type – adult stem cells – that look after one specific part of the body. Like the skin, for example. Here they work as a repair-and-maintenance crew, regularly generating a fresh supply of cells.

"We've known for a long time that there are stem cells in the skin because when you cut yourself, it's the skin stem cells that are assisting in the repair," says Dr Munsie.

Stem cells and your skin

"Most [skin-specific adult stem cells] are actively producing new skin cells all the time to replace the continual loss of cells from the surface of the skin," says WH dermatology expert Dr Elizabeth Dawes-Higgs.

As we age, however, "all stem cells have a reduced capacity to keep growing, so they're slower to respond and slower to make new cells," adds Dr Munsie. A focus of investigation for some stem-cell scientists, she says, is "[how to] coax them out of hibernation, if you like, and make them more effective in repair". A more effective repair mechanism means new skin cells are being produced more efficiently for longer, which may slow down the visible signs of ageing – so you can see why this might be a good thing. Exactly how to do the coaxing – and whether it's even possible – is still being determined, says Dr Munsie.

Lancôme claims that they have hit on one way of achieving this goal with its Absolué Precious Cells range. It relies on the ingredient Pro-Xylane to help stimulate the production of five key components of the skin's stem-cell environment, including two types of collagen.

Power plants

All this interest in stem cells has suddenly made science hot, and a recent survey by the Department of Innovation, Industry, Science and Research found that Aussies are overwhelmingly accepting of

the use of stem cells to research and treat diseases. So it's little wonder, then, that they've caught the eye of big cosmetics companies. And not just in terms of what can be done to improve the function of our own stem cells, but also as an ingredient in their own right.

The Swiss Apple (aka Uttwiler Spätklauber) has been called the new fountain of youth because it stays fresh for months after harvesting, thanks to its reputedly long-living stem cells. Dr LeWinn's is one of several brands to have

used stem cells from the Swiss wonder fruit, incorporating it into its Synergise Anti-Ageing Eye Cream, \$39.95 [3, previous page], and other products in the range, where it helps to protect stem cells from UV damage, says product development manager, Teresa Hrynieweska.

US cosmeceutical company DermaQuest Skin Therapy uses stem cells from the edelweiss flower in products such as its Collagen Stem Cell Complex, \$105 [2, previous page]. "Plant stem cells have twice the antioxidant, or free-radical scavenging abilities than that of the typical benchmark antioxidant," says DermaQuest's international educator, Colleen Shimamoto.

The last word

Stem cells are probably sounding pretty exciting right now, but as Mum used to say: "it's all fun and games until someone loses an eye". The other side of the story is that as new cells are reproduced, glitches can occur, leading to the mutations that might, in turn, cause tumours. Which brings a different perspective to a few wrinkles. So with this in mind, should we really be fiddling with them?

Dr Munsie believes any dangers are likely to be minimal. "For me, a demonstration of safety and appropriate testing are essential... I think most of these products are unlikely to have a toxic effect but I would just be a little cautious." *wh*

Q+A

with WH dermatology expert Dr Elizabeth Dawes-Higgs

Ask Elizabeth a question* at womenshealthmag.com.au



Q I've started using skincare that contains vitamin A and have heard that I can no longer get my eyebrows waxed. Is it true that vitamin A and waxing don't mix?

Nicole, via email

A Vitamin A creams are often used in the treatment of acne, pigmentation and photo-ageing. They work by stimulating collagen production and the new growth of blood vessels, as well as unclogging

pores. This helps to smooth out fine lines and improve skin clarity. However, vitamin A creams can cause skin irritation with redness and flaking, although this usually settles with time. Getting an eyebrow wax while you're using a vitamin A cream can cause more redness than usual. To avoid this, try stopping your vitamin A cream five to seven days before a waxing treatment.

SOFT CELL

After studying stem cells for 20 years, Lancôme discovered that cells' behaviour is only as good as their environment. The company developed Absolué Precious Cells Advanced Regenerating Concentrate, \$320 [4], to help give these building blocks a cushier home. Because a comfy stem cell is, apparently, a much more efficient one.



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