

## Forever young

*In an era in which we are obsessed with cheating time, science is now so advanced that we have the spring of youth almost at our fingertips. Cleo Glyde examines the new biotech breakthroughs in health and beauty.*



DEFENSIVE  
**DAY**  
MOISTURE SERUM  
helps rescue  
facial skin from  
signs of aging  
SPF 15

RECOVERY  
**NIGHT**  
MOISTURE SERUM  
helps facial skin  
recover from  
damaging  
free radicals

### **BREAKTHROUGH: ETHICAL STEM CELL SKINCARE**

Most people are vaguely familiar with the central idea underpinning stem cell science: embryonic stem cells can divide and diversify into specialized cells with specific functions, such as skin, bone or muscle. A single stem cell's potential to regenerate damage tissue has provided a whole new way to tackle disease.

Applying the technology to skincare is a natural progression: stem cells can yield millions of healthy new cells, bestowing skin with the youthful glow of high cell renewal. But the brave new world of stem cell research has been tempered by ethical concerns, with unease expressed at the idea of creating then disposing of viable embryos for research purposes.

Then US biotech company International Stem Cell Corporation (ISCO) made a groundbreaking discovery: a new class of female stem cells that are derived from unfertilized eggs, neutralizing to an extent the embryonic stem cell debate.

ISCO biologist Dr. Ruslan Semechkin also solved the next technical challenge in creating stem cell-based skincare: stabilizing the proteins in a stem-cell extract so that they can last in a cream and be reliably delivered to skin. These proteins (such as peptides and growth

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factors) regulate or “switch on” the genes most important to the healthy appearance of younger skin. Encapsulating the proteins in specialized membranes has ushered in the next wave of skincare: cellular renewal technology.

The stem cells in the serum, all from a single donor cell, can proliferate almost indefinitely, naturally accelerating new, healthy cell production, repairing damaged cells, and switching on genes whose expression may be corrupted with age.

“Our patented technology is unique and compelling,” claims ISCO vice-president Simon Crow of the company’s new skincare subsidiary, Lifeline Skin Care. “Without stabilizing the extract there is really no benefit.” Lifeline has launched a Defensive Day Moisture Serum SPF15 and Recovery Nigh Moisture Serum in the US. A human clinical efficacy study was carried out by Bioscreen, a Californian company, in 2010 and revealed a visible improvement after eight weeks on hydration, elasticity, brightness and the effects of skin problems such as eczema were diminished.

“The serum works by supplementing the ‘message’ that is already being generated by existing skin stem cells,” Crow says. “Our extract amplifies this signal to make your cells healthier and more productive. Customer feedback says skin looks and feels brighter, more luminous and healthy.”

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While much of the anti-ageing customer base is 40-plus, the cream is also designed to be used by those in their late 20s to early 30s, before signs of ageing appear.

Lifeline’s Australian distributors Dr. Kevin McIsaac and Catherine Lezer were looking for next-generation stem-cell technology to supersede the “make do” versions derived from plant stem cells already available in Australia. “Apple stem cells work just fine – if you’re an apple,” McIsaac says with a laugh. They have recently launched the serum in Australia and New Zealand.

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