

# Fido forever? South Korea's dog cloning clinic

4 July 2016, by Jung Ha-Won



A researcher holds a cloned dog in her arms at Seoul's Sooam Biotech Research Foundation, a world leader in pet cloning

At \$100,000 a head, the puppies frolicking around the fenced lawn in western Seoul don't come cheap—but at least their owners know exactly what they are getting.

The lawn belongs to the Sooam Biotech Research Foundation, a world leader in pet cloning that has run a thriving commercial business over the past decade catering to dog owners who want to live with their pets forever ... literally.

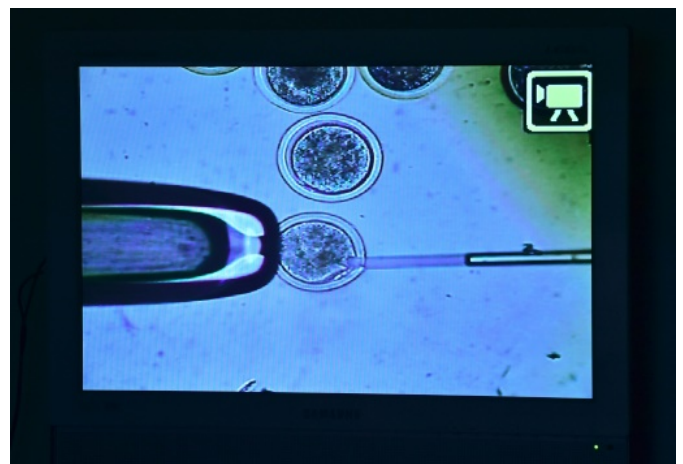
With a client list including princes, celebrities and billionaires, the foundation offers owners protection against loss and grief with a cloning service that promises the perfect replacement for a beloved pet.

Since 2006, the facility has cloned nearly 800 dogs, commissioned by owners or state agencies seeking to replicate their best sniffer and rescue dogs.

"These people have very a strong bond with their

pets ... and cloning provides a psychological alternative to the traditional method of just letting the pet go and keeping their memory," said Wang Jae-Woong, a researcher and spokesman for Sooam.

"With cloning, you have a chance to bring back the pets," he said in the facility's "care room" where each cloned puppy is kept in a glass-fronted, temperature-controlled pen and monitored by researchers around the clock.



A screen displays the process of removing a nucleus from a donor egg at the Sooam Biotech Research Foundation, a world leader in pet cloning

Ever since the milestone birth of Dolly the sheep in 1996, the rights and wrongs of cloning have been a topic of heated debate and Sooam Biotech has been regarded with particular suspicion because of its founder, Hwang Woo-Suk.

In two articles published in the journal *Science* in 2004 and 2005, Hwang claimed to have derived stem-cell lines from cloned human embryos, a world first.

### **Fraudulent hero**

He was lauded as a national hero in South Korea before it emerged that his research was fraudulent and riddled with ethical lapses.

Hwang was given a two-year suspended prison sentence in 2009, after being convicted of embezzlement and bioethical violations.



South Korean scientist Hwang Woo-Suk performs an embryo-injection operation on a surrogate mother dog at Sooam Biotech

Sooam Biotech clones many animals, including cattle and pigs for medical research and breed preservation, but is best known for its commercial dog service.

The process involves harvesting a mature cell from the dog to be copied and transferring its DNA to a donor egg cell that has had its own genetic material removed.

The cell and the egg are "fused" with an electrical jolt, and the resulting embryo is implanted in a surrogate mother dog, which will give birth about two months later.

Despite the \$100,000 price tag, requests for the service have poured in from around the world, Wang said—around half from North America.

Some have sought clones of other pets like cats, snakes and even chinchillas, but Wang said the demand for such animals was too small to justify the cost.



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Walls around the five-storey Sooam Biotech centre are adorned with dozens of photos of cloned dogs and their smiling owners—tagged with their national flags including the US, Mexico, Dubai, Russia, Japan, China and Germany.

"(The clients) understand that a clone is an identical twin of the original pet, but also has a lot of genetic predispositions and the potential to develop as the original pet," Wang said.

### **9/11 canine hero**

One well publicised cloning was of Trakr, a former police dog hailed as a hero after discovering the last survivor of the 9/11 attack on the World Trade Center.

Sooam produced five clones after Trakr's owner won a contest for the world's most "clone-worthy" dog.



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Cloned dogs at a care room of the Sooam Biotech Research Foundation in Seoul

High profile clients have included Princess Shaikha Latifah of Dubai who cloned her pet dog in 2015 and helped launch a joint research study into cloning camel breeds known for high milk production.

But it is pushing a number of ambitious projects, most notably an effort to clone an extinct mammoth.

For the most part, the foundation's clients and financial supporters of Hwang Woo-Suk's research prefer to remain anonymous.

Since 2012, Hwang's team has attempted to cultivate living cells from the frozen remains of mammoths in Siberia.

"Few of our backers—even the most loyal ones—want to voice their support publicly," said Sooam Biotech's general manager Kim Hoon, who acknowledged that the scandal involving the facility's founder had tainted its image.

### Disease 'models'

For medical research purposes, Sooam Biotech also produces genetically-engineered animals, or "disease models" that are predisposed to Alzheimer's, diabetes or certain cancers.

"I think the only way to win the public's trust back is making more genuine scientific breakthroughs," he said.

During a visit to the clinic by AFP, Hwang himself was leading a procedure to inject the embryo of a Beagle into a surrogate mother dog's womb.

The centre does not conduct any human stem cell research after being repeatedly denied a state approval to do so.



Researchers transports a surrogate mother dog after an embryo-injection operation at Sooam Biotech

"This dog, once born, has a possibility to become a disease model for human brain tumours," Hwang said.

Sooam is also involved in a joint venture with Chinese biotechnology firm Boyalife to set up what will be the world's largest animal cloning factory in the northeastern Chinese port city of Tianjin.

But head researcher Jeong Yeon-Woo said the dog cloning remained his favourite service because of the reaction of owners when they see the puppies.

"They look like they found a child that had been missing," Jeong said.

"The moment of pure joy like that ... makes me realise again why I'm doing this."

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