GEMINIGENETICS

UK Pet & Equine Genetic Preservation For Cloning

www.geminigenetics.com | 01948 668 057

Gemini Genetics

Genetic Preservation For The Future

Contents

GEMINIGENETICS

Launched in 2018, **Gemini Genetics is the UK's first domestic animal genetic preservation company**

Equipped with state-of-the-art facilities & based in the heart of the Shropshire countryside, we preserve cat, dog & equine DNA for pet & equine cloning purposes.

At Gemini Genetics, we are partnered with world leading cloning company, ViaGen Pets & Equine.

The time critical stages of cloning, (genetic preservation & cell culture), are completed here in the UK by Gemini Genetics. When ready to clone, we safely ship the preserved and cultured DNA to our world leading partner, ViaGen Pets, for the pet & equine cloning process to be completed.

Our Mission

We endeavour to provide our clients with a kind and compassionate service, that assists during one of the most difficult times in life and to provide the highest standard of genetic preservation and pet cloning, to help re-create the human-animal bond for many more years of happy memories and times together.

Together with ViaGen Pets, we work towards their mission of being 'world leaders in cloning the animals we love'.

Our Team

At Gemini Genetics, we are a dedicated team of specialists in assisted animal reproduction with **over 25 years of experience** in the cryopreservation of animal genetics.

As well as our scientific expertise, our team are also passionate animal lovers and owners and therefore truly understand the reasons why people decide to clone their much loved animal companions.

Lucy Morgan
Manager

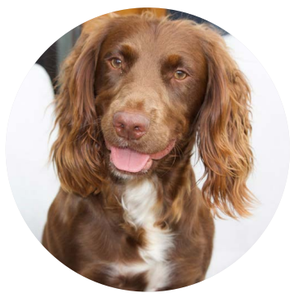
Tullis Matson
Director

Kate Ashmore
Director

Emma Swan
Accounts Manager

Megan Groves
Laboratory Technician

Lydia Keeping
Laboratory Technician



Gem
Our very own cloned dog

Murka's Gem
Our cloned horse & breeding stallion

GEMINIGENETICS

Our Facilities

At Gemini Genetics, we are proud to offer a state-of-the-art facility, for **world leading preservation of cat, dog and equine DNA** for future cloning.

Based in the heart of the Shropshire countryside, our facilities include;

- A dedicated and state of the art laboratory, specifically designed for genetic preservation and cell culture
- Secure and alarmed liquid nitrogen containers to ensure safe storage of your pets' genetic material
- An advanced labelling and database system for accurate and secure record keeping and identification of your pets preserved samples
- Specialised scientists to safely preserve your pets' valuable genetic samples

What is Cloning?

Scan the QR code to find our **easy to follow video on cloning**

The word "cloning" refers to a process in which **biological copies of a living organism are created**, that are **genetically identical to the original** organism.

One of the most common forms of cloning is somatic cell nuclear transfer where DNA is inserted into an enucleated egg. This process of somatic cell nuclear transfer is how pets are cloned. The DNA of the original animal is inserted into an enucleated egg, that is then transferred to a surrogate mum for the pregnancy & birth to follow. As well as enabling the legacies of much-loved animal companions to continue via their cloned genetic twins, cloning also has growing applications in conservation of wild and endangered animal species. You can read more about this on page 34 of this booklet.

History of Cloning

Cloning was first documented in 1885, when Hans Adolf Eduard Driesch demonstrated artificial embryo twinning on a sea-urchin. As the sea urchin is a simplistic organism, Driesch was able to demonstrate that it was possible to separate the two-celled embryos by merely shaking them. These separate cells each could grow on their own individual.

The process of cloning mammals occurred much later due to their more complex make up. First, Steen Willadsen separated a cell from an 8-cell embryo and used a small electric shock to fuse it to an enucleated egg cell. This started dividing, demonstrating a mammal can be cloned through nuclear transfer.

Although there was now a way to clone an embryo, there was no way of cloning an adult animal. Embryotic cells have specific genetic properties that allow them to be ready to activate any gene, however, differentiated adult cells shut down the genes they don't need for their specific functions. It was determined that in order to clone a somatic cell it would have to be reset back to an embryotic state.

Ian Wilmut and Keith Campbell made history when they discovered that starving a cell of nutrients was an effective way of resetting the adult cell. On July 5th, 1996, the first successful clone of a mammal from a somatic cell was born, Dolly the Sheep. Since then, the cloning technology has been further researched and optimised, to improve the efficiency of the nuclear transfer.

Shortly after the birth of Dolly The Sheep, cloning was banned in the UK, amidst fears of the possibility of human cloning. While the UK because cautious of the technology, other countries seized the opportunity to further develop and improve the techniques and efficiencies of reproductive cloning. The USA in particular has made great strides in optimising reproductive cloning, with Texas based ViaGen Pets & Equine recognised as a world leader in this field of reproductive science.

Natural clones in nature

Cloning is not just a man-made event as thought by many. In fact, cloning occurs as a natural phenomenon. Humans and other mammals may produce clones which are more commonly known as identical twins. This happens when a fertilised egg separates into two or more embryos. The twins share common genes with their parents but are genetically identical to each other.

There are also naturally occurring clones among animal populations. Chillingham cattle are a rare and ancient breed of cattle that reside in Chillingham Park, Northumberland, England. They are a unique and isolated population of wild white cattle that have roamed the park for hundreds of years and have never been domesticated or crossbred with other breeds of cattle. After being free from human interference and the addition of new cattle for over 1000 years, this UK Native breed are considered so genetically similar that they are in fact, genetic clones of each other.

Identical Twins

Pet Cloning

When cloning a pet, we are producing an identical genetic twin to the original pet.

To clone your pet, we need a skin sample. As this information pack will explain, the cells within the skin sample are used to replace the genetic material within a donor egg cell. This donor egg cell, containing one of your original pet's skin cells, is then stimulated via an electrical impulse to develop into an embryo. Via this process of somatic cell nuclear transfer, a cloned embryo is created and transferred to a surrogate mum for pregnancy and birth to follow.

Chillingham Cattle

How Similar will the clone & original be?

Your pets clone will have the exact same genetics as your original pet. The clone will therefore have the same genetic coding to result in the same appearance and temperament as your original pet. The clone will literally be the closest possible genetic replica of your original pet, as they will both have exactly the same DNA! They are essentially twins that are born at different points in time.

In terms of appearance, there are some markings that can be slightly changed by environmental factors. Embryo temperature at the point of conception, for example, can result in slight differences in the markings of pets that are not of solid colour.

Look, for example, at this picture of Bruce Wayne and his clones! All of his clones share exactly the same DNA as each other and Bruce Wayne, and all carry his same full of life and vibrant personality! But they have slight differences in the size of the white stripe down their face. And this is because of the small influence that the environment can have on the appearance of colour genetics.

Bruce Wayne & Clones

For pets of solid colour, the same appearance can be expected. And for pets of any colour, their clones are always the closest possible replica of the original pet, even if small differences in appearance of some markings are seen, as they share exactly the same DNA as the original.

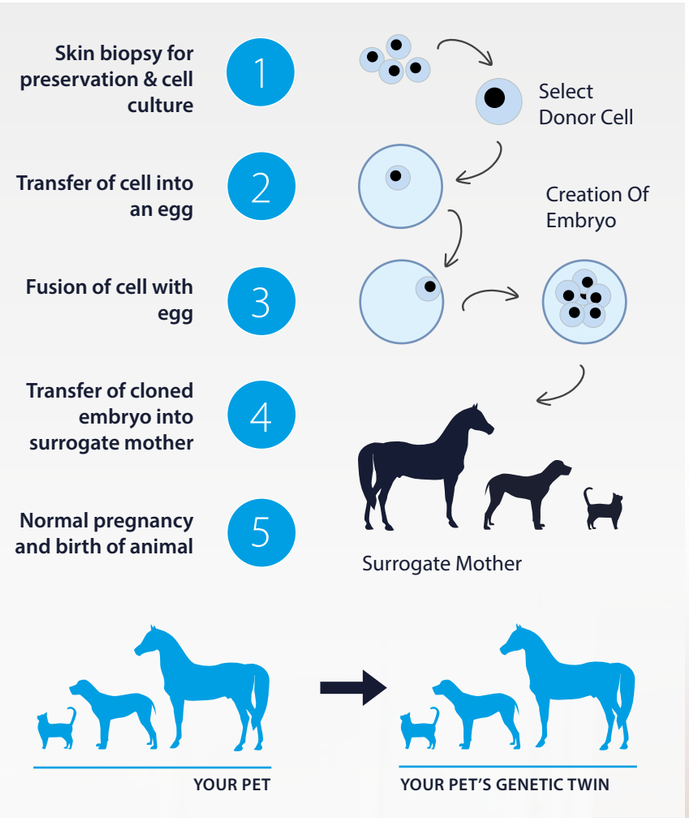
How Cloning Works

GEMINIGENETICS

At Gemini Genetics, we are **the only centre in the UK & Europe** to preserve pet & equine DNA for cloning.

To clone your pet, we need a skin sample. This skin sample is genetically preserved and cultured at our UK laboratory. When ready to clone, the preserved and cultured DNA is then safely shipped to our US based & world leading cloning partner, ViaGen Pets & Equine.

How Does Cloning Work?



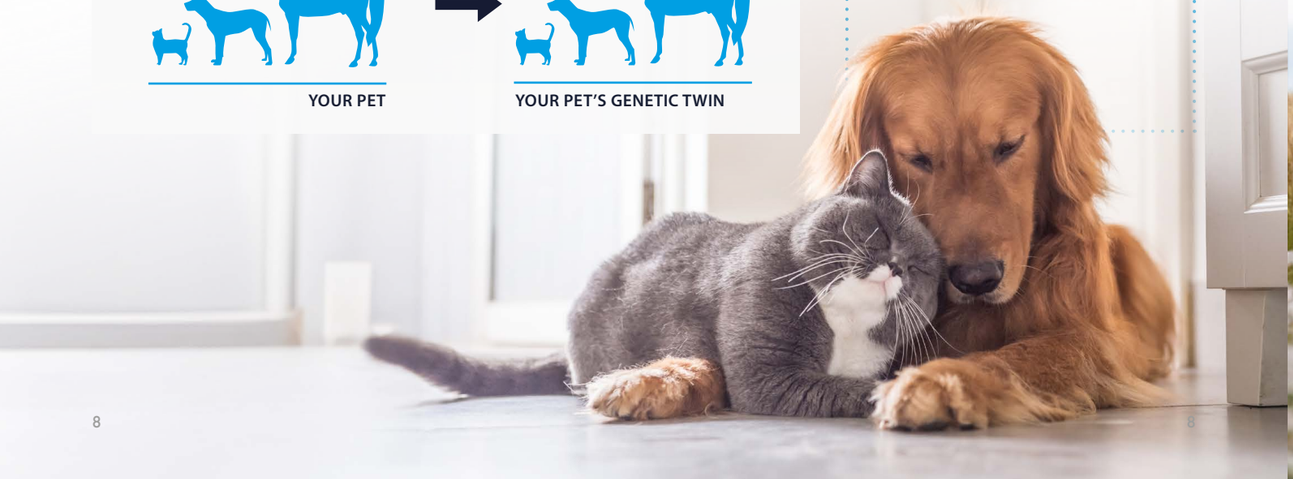
Sample Taking

To preserve pet & equine genetics, all we need is a small sample of skin tissue.

Samples can be taken when the animal is living*, or post-mortem.

- **1x6mm skin biopsy punch from the neck, chest, and inner thigh****
- **2x2cm snip of ear tissue** (only in post mortem situations)

*subject to veterinary legislation in the country of residence.
**location depends on species and if live or post mortem sample taking. Always request full instructions.



ViaGen Pets & Equine Our Cloning Partner

VIAGEN PETS & EQUINE

Gemini Genetics is partnered with US cloning experts ViaGen Pets & Equine.

Once an owner is ready to clone, we can safely and securely ship the preserved genetics to ViaGen Pets & Equine for the cloning process to be undertaken. ViaGen Pets & Equine is committed to the health and well-being of each and every dog, cat or horse with whom they work.

Their team includes world leading scientists that believe the moving the promising and exciting area of animal genetic research forward will benefit all animals. From indefinitely preserving the human-animal bond we have with our beloved pets, to recreating the complete genetic set of a proven performance animal, or even conservation, ViaGen Pets & Equine are leading the way.

The Worldwide Leader In Cloning The Animals We Love

Your beloved animal's DNA is securely sent over to the US in specialised liquid nitrogen shipping containers, keeping the samples inside viable for cloning once they reach ViaGen. However, there is no rush to go forward with the cloning process itself straight away, everything is up you. Your animal's samples can stay safely preserved indefinitely at Gemini Genetics until you are ready to clone.

We **understand & respect the unique love that our clients have for their pets** & we are dedicated to delivering outstanding service & results.

www.viagenpets.com

Phone : 1-888-876-6104
715 Discovery Blvd. Suite 410 A, Cedar Park, Texas, 78613

Successful Client Photos

Why People Clone Their Animals

> I chose to clone my cat because he was **my soul mate.**

The 4 main reasons

- To continue your original pet's legacy by indefinitely preserving their genetics
- For the memories and little things that make our animal companions unique
- To maintain that special human-animal bond
- For preserving our rare breeds for the future, or elite performance and sport animals

In recent times, the science of genetic preservation and cloning has become much more accessible globally.

With popularity increasing year on year, many different people are considering the possibly of cloning their animals, and preserving that once in a lifetime bond!

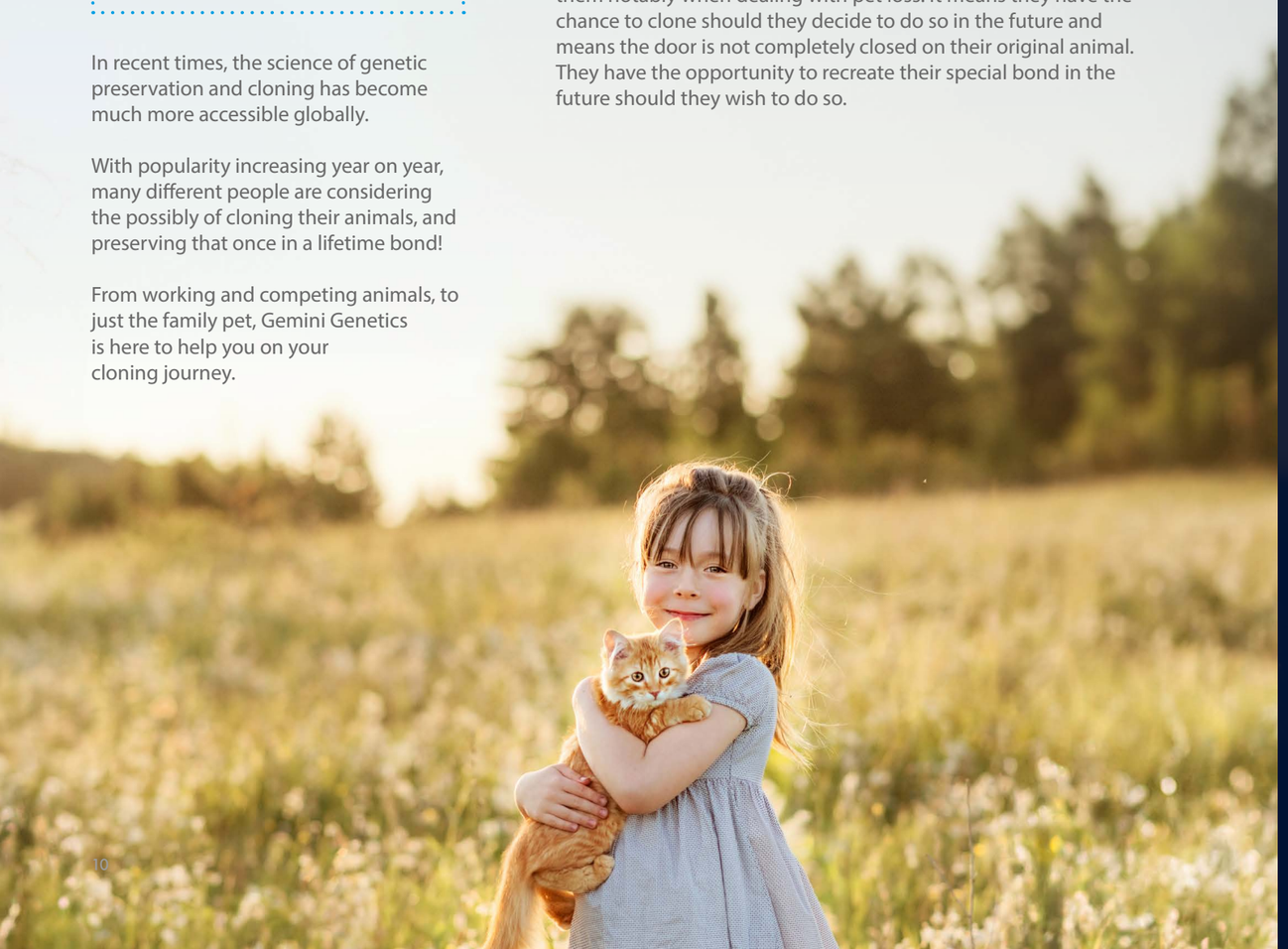
From working and competing animals, to just the family pet, Gemini Genetics is here to help you on your cloning journey.

Genetic Preservation and Cloning to Help With Pet Loss

At Gemini Genetics, we understand how hard it is to lose a beloved pet, they are a part of the family. We have many clients who come to us because, sadly, they have lost their pet. And so, we do everything we can to help recreate that bond with a cloned individual; providing comfort in knowing their animal will live on through its continued DNA.

But we also understand that it's not a replacement for the original animal. So, regardless of the comfort a clone can bring, it is still important to go through the normal grieving process in order to heal from the loss and accept a new pet into your life.

For some people, simply preserving their pet's DNA can help them notably when dealing with pet loss. It means they have the chance to clone should they decide to do so in the future and means the door is not completely closed on their original animal. They have the opportunity to recreate their special bond in the future should they wish to do so.



Testimonials

At Gemini Genetics, **we are proud to hold a 5* customer rating**. Our clients not only use our service to clone their cats, dogs and horses, but also to help during the grieving process. Our 5* reviews refer to our **state-of-the-art facilities, kind and compassionate service** and the comfort of preserving DNA in this way following the loss of a much loved animal companion.

★★★★★

"Gemini Genetics offers such an amazing service to those dealing with the grief of losing a pet. The team is kind and compassionate and take the time to explain the whole process. It's reassuring to know they work with world leaders in science, Viagen Pets to complete the cloning process, ensuring as big a chance of success as possible. I would absolutely recommend Gemini Genetics and their services to anyone."

★★★★★

"I would highly recommend the services of Gemini Genetics. A kind and compassionate team, with excellent facilities, and the ability to assist pet and equine owners during animal loss. The team are easy to contact and quick to respond to enquiries, and the information provided is clear and easy to follow."

★★★★★

"I would highly recommend the services of Gemini Genetics. Lucy and her team provide a five-star service to clients and are extremely compassionate and understanding of the emotional effects of losing a beloved pet. It is brilliant to have such a company present here in the UK, allowing pet & equine owners to preserve their animals' DNA for future regeneration. It is also of comfort to see that Gemini Genetics works with ViaGen Pets & Equine, who are the world leaders in animal cloning. This assures us that the very best techniques and standards are being adhered to in the preservation of pet & equine samples."

Sample Taking & Shipping For Cloning

> To clone your pet, we need a skin sample.

For the genetic preservation and cloning process to begin, we need a small sample of skin from the dog, cat, or horse you wish to recreate.

Samples can be taken when the animal is living (subject to veterinary legislation & veterinary approval), or alternatively, post-mortem.

All samples should be taken by a veterinary professional only.

Sample taking from live animal

Sample taking while your animal is alive is subject to veterinary approval. For cats and dogs, we ask for 4 x 6mm biopsy punctures of skin from the inner thigh. Two biopsy punches from the left inner thigh and two from the right inner thigh. Taken under appropriate anesthetic, by a certified veterinarian and only upon veterinary approval. For horses, it is 4 x 6mm biopsy punches from the crest of the neck under the mane.

Cat & Dog

Live Sample Taking
Veterinary Procedure Only

2 x 6mm biopsy punch of skin from right & left inner thighs on the back legs

Once taken, suspend in standard veterinary saline only & keep chilled. Ship for arrival within 5 days (full instructions, see page 16 for cats and 18 for dogs)

Scan the QR code for guidance video

Equine

Live Sample Taking
Veterinary Procedure Only

4 x 6mm skin biopsy punches from the crest of the neck under the mane + health tests

Once taken, suspend in standard veterinary saline only & keep chilled. Ship for arrival within 5 days (see page 24 for full instructions)

Scan the QR code for guidance video

Post-mortem sample taking

In post-mortem situations we need to take a few more samples as this is the only opportunity to do so. Here we would take a snip of the ear tissue (2cm x 2cm) in conjunction with the biopsy punches detailed in the live sample taking.

Full instructions on emergency post-mortem sample taking can be accessed via our website.

Cat & Dog

Equine

Why We Need Skin For Cloning

To clone an animal, we need a sample that contains the whole genetic profile of the animal to be cloned. We use skin because skin contains a high density of fibroblast cells. These cells contain the whole genetic profile of an animal, and when given the right conditions, they culture quickly and reliably. Samples such as hair, blood, urine, & saliva cannot be used for cloning.

Sample Packing

Once the skin sample is taken, it needs to be kept chilled and arrive at our centre within 5 days of sample taking / animal passing.

Skin > **Chill** > **5 Days**

Skin
We need skin samples from your pet to preserve their DNA

Chill
Keep the skin sample chilled at fridge temperature, NEVER frozen

5 Days
Send the skin sample to us within 5 days of sample taking

For UK clients, a same day courier can be requested, or the animal owner can deliver directly to our centre. For EU clients, next day transit via our international courier can be requested, subject to location. Full packing and shipping instructions can be accessed via the QR code.

Scan the QR code to find our video instructions for shipping

Our Services

GEMINIGENETICS

At Gemini Genetics, **we perform the first two stages of the pet & equine cloning process** which are time critical after an animal's passing as well as after the date of skin sample taking.

These 2 stages are genetic preservation & cell culture. Once the DNA has been preserved and cultured, it can then remain in storage at Gemini Genetics for as long as required by the sample owner.

1. Genetic Preservation

This is the first stage in the pet & equine cloning process. DNA is preserved to enable indefinite storage and future cloning.

2. Cell Culture

This is the second stage in the pet & equine cloning process. The preserved DNA is asked to replicate so that we can check that the DNA is viable for cloning and to also prepare the DNA for the cloning process.

3. Indefinite Storage

This is the intermediate stage in the pet & equine cloning process. Animal DNA and cultured cells are expertly preserved at -196 degrees Celsius to enable long term, indefinite storage of the animal genetics.

Services & Pricing

Gemini Genetics are making the cloning process accessible across the UK and Europe

Genetic Preservation
£600*

Cell Culture
£1,600*

Pet DNA Storage
£12 p/m

Cat Cloning
$50,000

Dog Cloning
$50,000

Horse Cloning
$85,000

* +VAT if UK invoicing address

When ready to clone, we safely ship the preserved and cultured DNA to ViaGen Pets & Equine, for them to complete the cloning process. The cloned pets & equines are born in the US and travel to their owners once they are weaned from their surrogate mums and have met all the necessary veterinary requirements for travel i.e. vaccinations.

Our Laboratory Standards

At Gemini Genetics, we are proud to be the **only centre in UK & Europe to offer pet & equine genetic preservation services for cloning.**

Our laboratory works to the highest standard of care and technical expertise, which combined with optimal sample submission criteria, gives a 96% chance that viable cells can be recovered from correctly submitted skin samples.

We are also proud to partner with IMT Matcher for our sample labelling and database management. IMT Matcher is world leading in database management and independent bar code witnessing, ensuring the very best storage standards for the preserved genetics.

All preserved samples are also divided between 2 storage containers, with a further option for sample division between our centre in the UK & ViaGen Pets & Equine in the US. This is the very best practice in genetic sample storage.

All storage containers are fully alarmed, with 24/7 surveillance of container temperature, and are safely stored within fireproof, high security rooms, with continuous CCTV monitoring.

Cat Cloning

> They say that one small cat can **change** coming home to an empty house, to coming home.

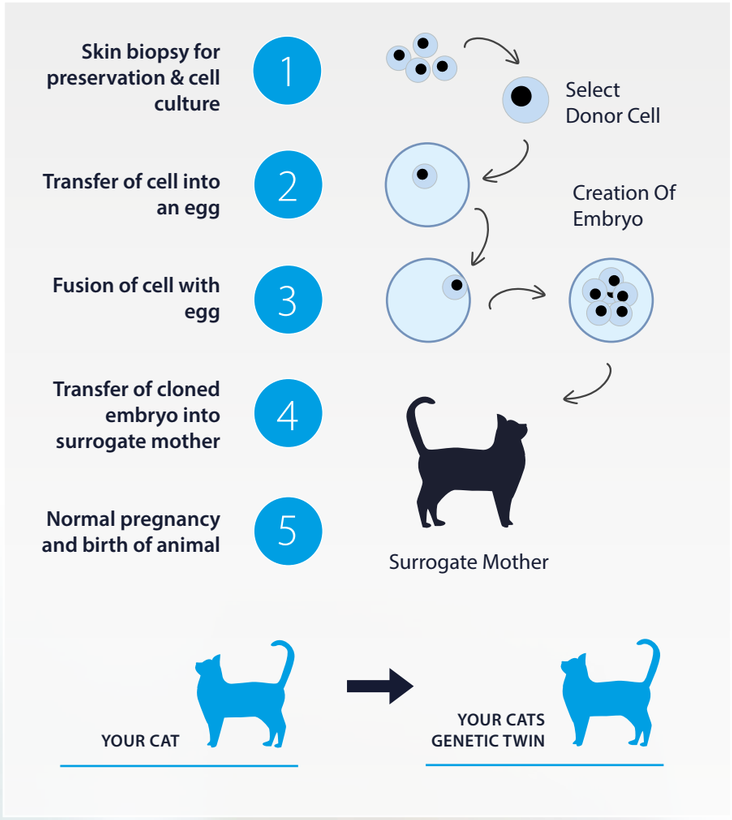
At Gemini Genetics, **we understand the importance of cats to their owners.** They become part of the family, lifelong companions that bring joy, create memories and provide invaluable companionship and love.

Cat cloning provides a way to bring back that special human- cat bond after pet passing and provide for many more years of love and happiness.

Step 1 happens here at Gemini Genetics; we take care of the time critical genetic preservation and cell culture stages. Ensuring the viability of the sample for cloning.

Your animal's DNA is then safely and securing shipped over to our partner ViaGen Pets & Equine in the US for steps 2-5 to take place.

How Does Cat Cloning Work?



Pricing

Genetic preservation at Gemini Genetics
£600 (+VAT for UK clients)

Cell culture at Gemini Genetics
£1,600 (+VAT for UK clients)

Storage at Gemini Genetics
£12 (+VAT for UK clients) per month

Cat Cloning at ViaGen Pets & Equine
$50,000

Samples Needed

To clone your cat, we need a skin sample. This can be taken while the pet is still alive, providing veterinary consent to do so, or following passing of the pet.

Taking a sample while your cat is alive

Sample taking while your animal is alive is subject to veterinary approval. For cats and dogs, we ask for 4 x 6mm biopsy punctures of skin from the inner thigh; two biopsy punches from the left inner thigh and two from the right inner thigh. Taken under appropriate anesthetic, by a certified veterinarian and only upon veterinary approval.

Taking a sample after your pet has passed away

In post-mortem situations we need to take a few more samples as this is the only opportunity to do so. Here we would take a snip of the ear tissue (2cm x 2cm) in conjunction with the biopsy punches detailed in the live sample taking.

Sample Shipping

Once the samples have been taken, they need to be kept chilled and sent to us within 5 days of sample taking / animal passing. Scan the QR code for information on sample packing.

Sample Arrival At Gemini Genetics

When the samples arrive at Gemini Genetics, we firstly work to preserve the DNA of your cat, so the genetics can be stored indefinitely. The second stage after this is the cell culture, where the DNA is asked to replicate so that we can check that the DNA is viable for cloning. This process takes 7 - 10 days to complete and once finished, any cultured cells can be stored down alongside the preserved skin, meaning there is no pressure to clone straight away. Once you are ready to clone, we arrange for the samples to be safely shipped to ViaGen Pets & Equine who complete the cloning process for you.

Skin > **Chill** > **5 Days**

We need skin samples from your pet to preserve their DNA

Keep the skin sample chilled at fridge temperature, NEVER frozen

Send the skin sample to us within 5 days of sample taking

> The **service provided by Gemini Genetics was second to none.** Their team were incredibly **helpful and compassionate** at the time of losing my pet cat Mable and have helped me preserve her genetics for the future.

Falicity Edwards, owner of Mable

Scan the QR code for **cat sample taking instructions**

Scan the QR code to see the **sample packing process**

Dog Cloning

> For many, dogs become irreplaceable **family members**, providing companionship, love and life-enriching fulfilment.

At Gemini Genetics, we understand the importance of dogs to their owners.

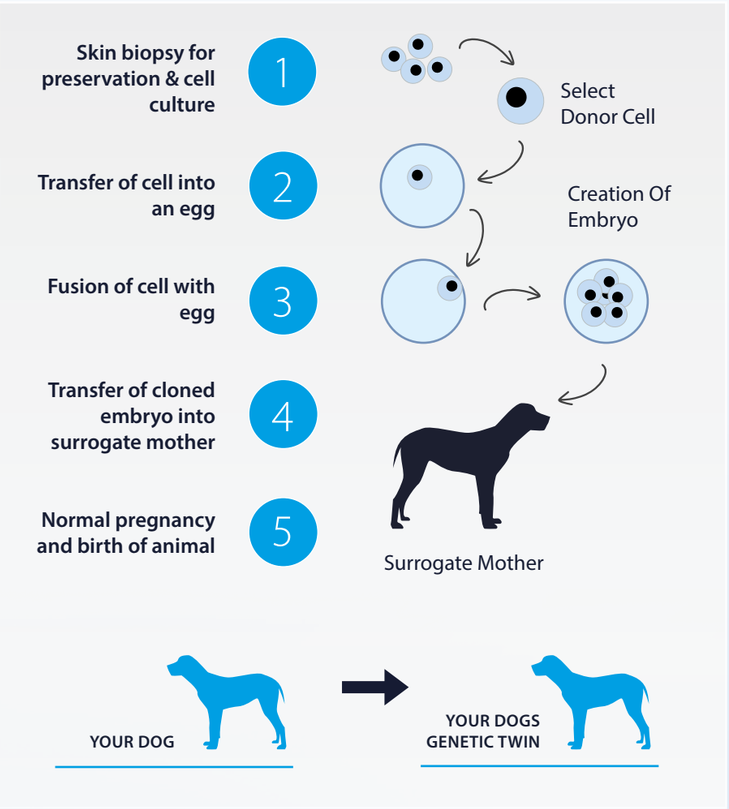
Dog cloning provides a unique opportunity to re-create and extend the unique and treasured bond between dog and owner.

Dog cloning enables us to create a full genetic twin to your original dog, providing the closest possible replica and genetically identical copy of your beloved companion.

Step 1 happens here at Gemini Genetics; we take care of the time critical genetic preservation and cell culture stages. Ensuring the viability of the sample for cloning.

Your animal's DNA is then safely and securing shipped over to our partner ViaGen Pets & Equine in the US for steps 2-5 to take place.

How Does Dog Cloning Work?



Pricing

Genetic preservation at Gemini Genetics
£600 (+VAT for UK clients)

Cell culture at Gemini Genetics
£1,600 (+VAT for UK clients)

Storage at Gemini Genetics
£12 (+VAT for UK clients) per month

Dog Cloning at ViaGen Pets & Equine
$50,000

Samples Needed

To clone your dog, we need a skin sample. This can be taken while the pet is still alive, providing veterinary consent to do so, or following passing of the pet.

Taking a sample while your dog is alive

Sample taking while your animal is alive is subject to veterinary approval. For cats and dogs, we ask for 4 x 6mm biopsy punctures of skin from the inner thigh; two biopsy punches from the left inner thigh and two from the right inner thigh. Taken under appropriate anesthetic, by a certified veterinarian and only upon veterinary approval.

Taking a sample after your pet has passed away

In post-mortem situations we need to take a few more samples as this is the only opportunity to do so. Here we would take a snip of the ear tissue (2cm x 2cm) in conjunction with the biopsy punches detailed in the live sample taking.

Sample Shipping

Once the samples have been taken, they need to be kept chilled and sent to us within 5 days of sample taking / animal passing. Scan the QR code for information on sample packing.

Sample Arrival At Gemini Genetics

When the samples arrive at Gemini Genetics, we firstly work to preserve the DNA of your cat, so the genetics can be stored indefinitely. The second stage after this is the cell culture, where the DNA is asked to replicate so that we can check that the DNA is viable for cloning. This process takes 7 - 10 days to complete and once finished, any cultured cells can be stored down alongside the preserved skin, meaning there is no pressure to clone straight away. Once you are ready to clone, we arrange for the samples to be safely shipped to ViaGen Pets & Equine who complete the cloning process for you.

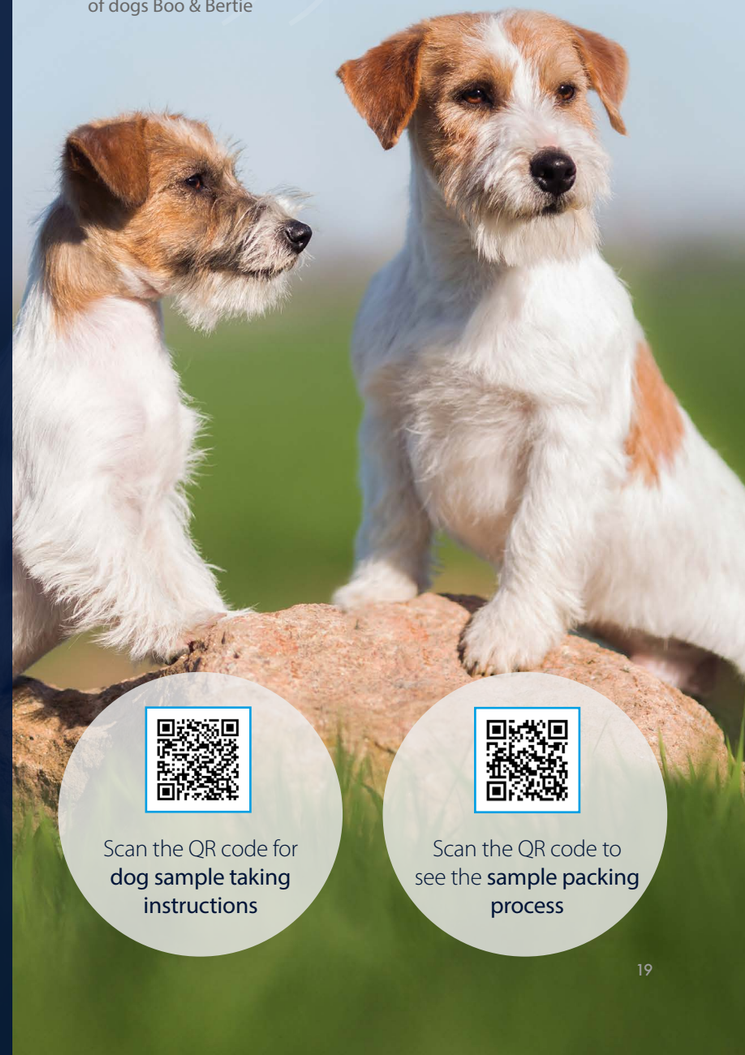
Skin > **Chill** > **5 Days**

We need skin samples from your pet to preserve their DNA

Keep the skin sample chilled at fridge temperature, NEVER frozen

Send the skin sample to us within 5 days of sample taking

> Our two pet dogs had been best friends & part of our family for their entire lives. Over 15 years together. **When they passed away, Gemini Genetics safely preserved their DNA** & we are now in the stages of sending to their partner, ViaGen Pets & Equine, to complete the cloning process.
>
> Bennett Family, owners of dogs Boo & Bertie



Scan the QR code for **dog sample taking instructions**

Scan the QR code to see the **sample packing process**

Our Cloned
Dog Gem

At Gemini Genetics, **we are very lucky to own our own cloned dog, Gem!** Gem is a beautiful cocker spaniel that started her life here at Gemini Genetics. **Gem was created from a small skin sample taken from her original after her passing in 2022**. Gem is an identical genetic twin to the original dog.

After her DNA was safely preserved & cultured here at Gemini Genetics, our US partner ViaGen Pets & Equine completed the rest of the cloning process!

About Gem

Gem is a beautiful, happy and healthy little girl, who's always full of energy and excited to see what each day brings! She belongs to Gemini Genetics company director Tullis Matson, and lives with his 4 other dogs. Gem loves playing with her doggy friends and also doing park runs with Tullis. She is also an ambassador for Gemini Genetics and regaulary visits the office to see the team and meet visitors attending the centre.

Gem has such a fantastic personality, that we wanted to share her story on social media which you can follow using the QR codes below.

She has her own Instagram and TikTok account which you can follow to learn more about her journey as a clone, but importantly, to see more of her personality and beauty as a dog in her own right.

Instagram

TikTok

Clone Kitty
Cloned Cat Influencer

Belle was successfully cloned by our partner cloning company, ViaGen Pets & Equine. Her story demonstrates the applications of pet cloning, and the value of this service to owners of much-loved animal companions.

This is why Belle and her owner Kelly Anderson have taken to social media to show the world what cloning is all about. Her platform is so incredibly important, teaching her audience the truth about cloning and debunking false stereotypes.

Belle's Story

Belle's life started as a skin sample taken from the original cat, Chai, upon her sad passing following complications after an operation to remove an ingested foreign object.

Chai's owner, Kelly, immediately contacted ViaGen upon her passing and requested a skin sample to be preserved and cultured.

Fast forward to August 2021, when an adorable blue-eyed, white-coated ragdoll kitten was born by a surrogate mother within the ViaGen labs. Belle the Clone, named after the beauty and the beast character, was introduced into the world, happy and healthy. Kelly was thrilled and by October was able to meet Chai's genetic twin, her very own Cloned Kitty. Upon their first meeting, Kelly and Belle were destined to be best friends when eight-week old kitten Belle very calmly lay on her lap.

Ever since, Kelly and Belle have taken to the internet to normalize cloning, dispel myths and shed some light on why people choose to clone their pets. Kelly has expressed that Belle's temperament is bold and sassy, the same as Chai's was. However, she does clarify that Belle is very much her own unique individual and the bond between them is not the same as the one she had with Chai but that is okay! Belle's markings are also a little different; she has less colour on her face and coat than Chai did, which would be due to environment differentiation rather than genetics. Similarly, their meows are also different as meowing is a learned behaviour, how interesting!

Belle has now become an internet sensation, capturing the hearts of cat lovers worldwide. Her story encourages discussions about cloning, genetics, and the bonds we share with our furry friends. Remember, Belle isn't just a clone; she's a unique cat with her own quirks and charm.

You can learn more about Belle and her fascinating journey on her website: Belle the Clone Kitty.

Instagram

TikTok

Pet Loss Support

At Gemini Genetics, **we know how much your beloved pet means to you**. As pet owners and animal lovers ourselves, we pride ourselves in being a kind and compassionate team dedicated to supporting you through the difficult time of losing a pet.

Whatever stage of grief you're experiencing, our team can help you through the grieving process and enable you to move on in life whilst still having that special connection with your pet.

From time to time people tell me "relax, it's just a dog" or "it's a lot of money just for a dog."

They don't understand the distance traveled, the time invested or the costs incurred by "just a dog." Some of my proudest moments happened with "just a dog."

Many hours passed being my only company "just a dog", but not for a single moment I felt despised. Some of my saddest moments were for "just a dog," and on those gray days, the gentle touch of "just a dog" gave me the comfort and reason to spend the day.

If you also think "it's just a dog," then you'll probably understand phrases like "just a friend," "just a sunrise," or "just a promise." "Only a dog" brings into my life the very essence of friendship, trust and pure and unbridled joy. "Only a dog" brings the compassion and patience that make me a better person.

For "just a dog," I'm getting up early, going for long walks and looking forward to the future. So for me, and for people like me, it is not "just a dog," but an embodiment of all the hopes and dreams of the future, the memories of the past and the absolute joy of the moment. "Only a dog" brings good in me and diverts my thoughts away from me and the daily worries.

I hope one day you can understand that it's not "just a dog", but what gives me humanity and prevents me from being "just a human". So the next time you hear the phrase "just a dog," you just smile because you "just don't understand."

"Just a Dog" - Richard Bibby

Our Accreditation & Additional Resources

Our team is **professionally trained in pet bereavement and understand the pain that comes with pet loss.** This is a time of uncertainty and disruption in your life that can be difficult to work through, especially if the pet's passing was sudden. **We are always at the end of the phone** to listen if you need us.

Methods to help you feel that you can move after your pet has passed:

- Talk to friends and family you trust about how you feel
- Take care of yourself physically
- Focus on healing, not just distracting yourself from the pain
- Practice mindfulness and breathwork to calm the body's natural stress response
- Set goals which are achievable
- Adjust to your new life slowly without putting pressure on yourself to 'be fine'

Losing a pet can cause you to become withdrawn and perhaps irritable at times. However, we recommend you are open with friends and family about how you are feeling. Talking is a great way to process difficult emotions, even if it feels hard to get talking. If you don't feel comfortable talking to those closest to you, there are people out there to lend an ear so as you are not alone. A qualified grief counsellor will be able to help, but if you aren't ready to explore this option, there are other ways you can cope.

Further resources to help you through your times of need:

- Blue Cross Pet Loss Support
- Human Animal Bond Research Institute
- Cats Protection Paws to Listen phoneline
- World Horse Welfare end of life planning

Horse Cloning

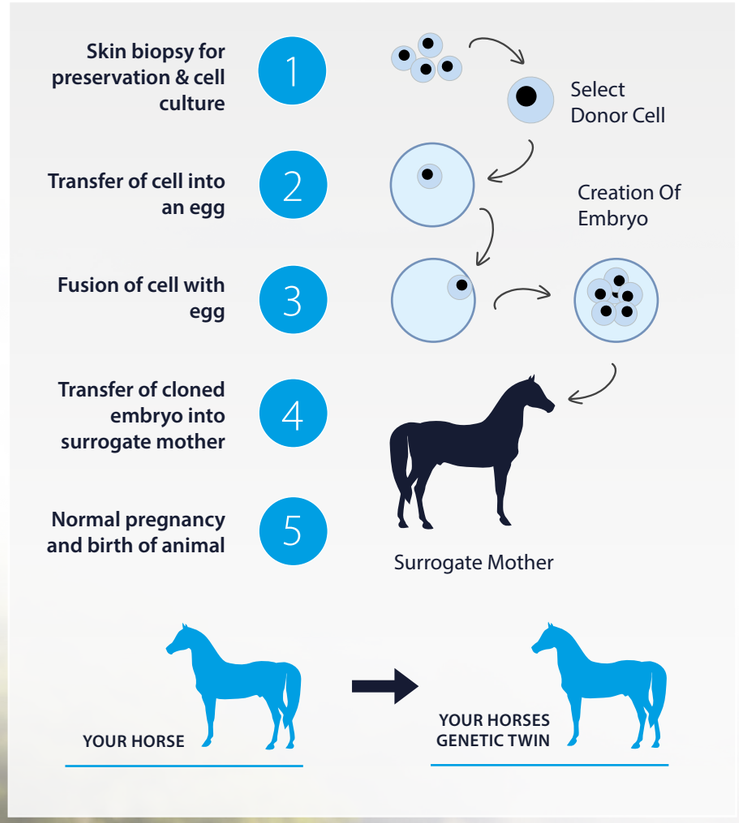
> They say a horse of a lifetime only comes around once. At Gemini Genetics, **we offer the technology to rewrite that concept.**

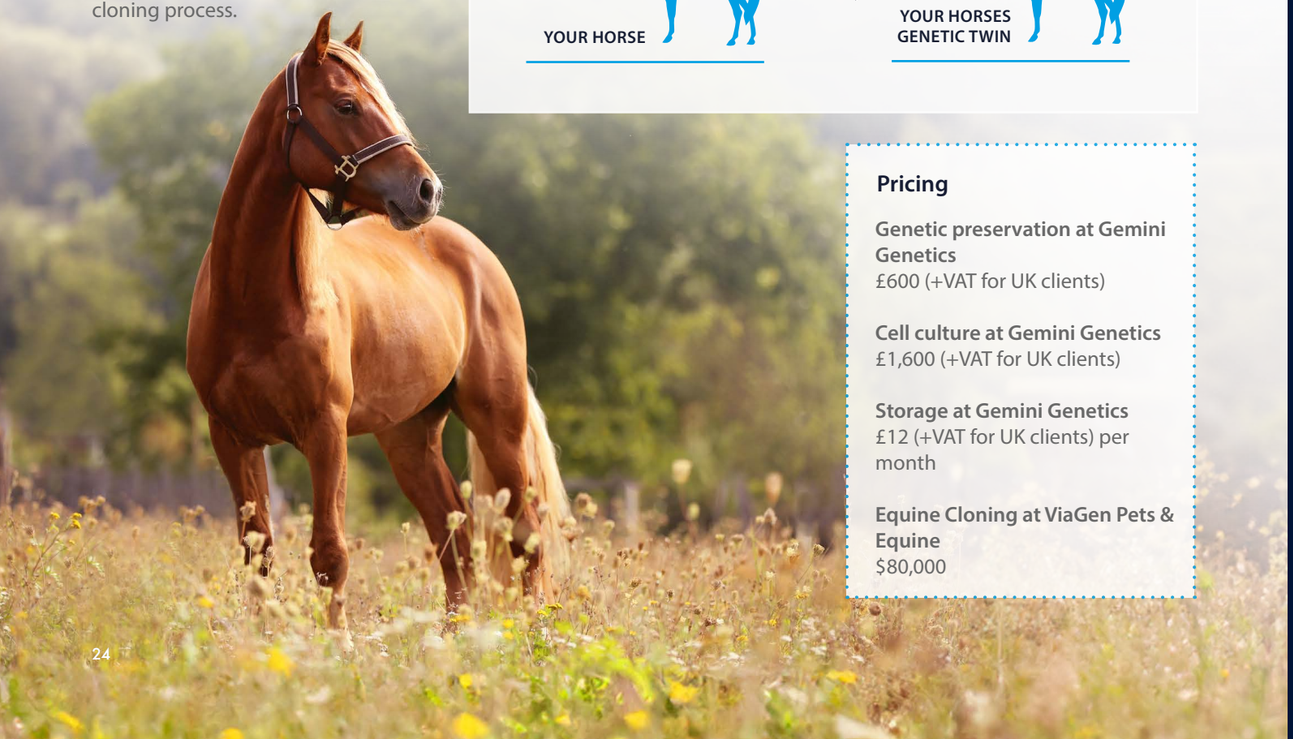
At Gemini Genetics, **we offer the technology to enable you to preserve and recreate the genetics** of a much loved and once in a lifetime equine.

Via skin sample preservation, the whole genetic profile of an elite performance horse, elite breeding equine or a much loved equine companion, can be captured and re-created via cloning. Skin sample preservation also allows for the cloning of mares and geldings, where alternative gamete freezing (egg and sperm cells) is not possible.

To clone your horse, we need a skin sample. This skin sample is then preserved and cultured at Gemini Genetics, before being safely stored at our UK facility. When ready to clone, the preserved and cultured DNA can then be safely shipped to work leading equine cloning company, ViaGen Pets & Equine, for completion of the equine cloning process.

How Does Horse Cloning Work?





Pricing

Genetic preservation at Gemini Genetics
£600 (+VAT for UK clients)

Cell culture at Gemini Genetics
£1,600 (+VAT for UK clients)

Storage at Gemini Genetics
£12 (+VAT for UK clients) per month

Equine Cloning at ViaGen Pets & Equine
$80,000

Samples Needed

To clone your horse, we need a skin sample. This can be taken while the horse is still alive, subject to veterinary consent to do so, or following passing of the equine.

Taking a sample while your horse is alive

Sample taking while your animal is alive is subject to veterinary approval. For horses, we ask for 4 x 6mm biopsy punctures of skin from the crest of the neck. Taken under appropriate anesthetic, by a certified veterinarian and only upon veterinary approval.

Taking a sample after your horse has passed away

In post-mortem situations we need to take a few more samples as this is the only opportunity to do so. Here we would take a snip of the ear tissue (2cm x 2cm) in conjunction with the biopsy punches detailed in the live sample taking.

Health Testing

For both live and post-mortem sample taking, your horse will need to have health tests taken to ensure the skin sample is export eligible to the USA when you are ready to clone. These tests include a blood test for EVA, EIA, Dourine & Glanders and genital swabs for CEM testing. Full instructions can be found via our website - https://www.geminigenetics.com/emergency-equine-protocols/.

Sample Shipping

Once the samples have been taken, they need to be kept chilled and sent to us within 5 days of sample taking / animal passing.

Sample Arrival At Gemini Genetics

When the samples arrive at Gemini Genetics, we firstly work to preserve the DNA of your horse, so the genetics can be stored indefinitely. The second stage after this is the cell culture, where the DNA is asked to replicate so that we can check that the DNA is viable for cloning. This process takes 7 - 10 days to complete and once finished, any cultured cells can be stored down alongside the preserved skin, meaning there is no pressure to clone straight away. Once you are ready to clone, we arrange for the samples to be safely shipped to ViaGen Pets & Equine who complete the cloning process for you.

Skin > **Chill** > **5 Days**

We need skin samples from your pet to preserve their DNA

Keep the skin sample chilled at fridge temperature, NEVER frozen

Send the skin sample to us within 5 days of sample taking

Scan the QR code to see the **live sample taking process**

Scan the QR code to see the **post-mortem taking process**

Scan the QR codeto see the **sample packing process**

Murka's Gem
Elite Equine Clone

Murka's Gem is a **clone of international showjumping gelding, Gem Twist**. Murka's Gem offers the modern breeder the chance to use proven thoroughbred bloodlines, previously lost in Gem Twist.

He allows breeders unique access to lost genetics. A careful and correct jumper, Murka's Gem is a strong option for breeders looking for a thoroughbred stallion.

"Murka's Gem holds an **identical genetic profile** to the legendary Gem Twist"

The Story Of Gem Twist

Gem Twist is the only horse to have won the "American Grand Prix Association Horse of the Year" three times. As well as this, he brought home two silver medals in 1988 and the "World's Best Horse" title at the 1990 Equestrian Games. He was an incredible show jumper, combining spectacular style with scope and speed. He won more than $800,000 in prize money and attracted purchase offers of $2.5 million. Gem's Twist's sire was Good Twist, ridden by Frank Chapot, when he was captain of the U.S. Equestrian Team. Good Twist was quick on the course. The only feature Gem Twist lacked was that he was a gelding, so unable to pass on his proven performance genetics via breeding. That is until his owners decided to take a skin sample and clone him, creating breeding stallion, Murka's Gem.

The Significance Of Murka's Gem

Stallion Murka's Gem holds an identical genetic profile to the legendary Gem Twist. That is he has the exact same DNA as the original and legendary showjumping gelding, Gem Twist. The power of this DNA is now coming to full fruition with Murka's Gem at an exciting point in his breeding career where his offspring are out on the competition circuit and showing the carry through of performance genetics from the original horse. He is currently standing at stud with our sister company Stallion AI Services.

Murka's Gem Fun Fact

Murka's Gem is one of 2 clones of Gem Twist!

Stallion Gemini is also a full genetic twin of Gem Twist and is 4 years older than Murka's Gem! Gemini was the first clone to be born in 2008, with Murka's Gem the 2nd clone born in 2011.

Murka's Gem Notable Progeny

Murka's Gem is a clone with an exciting breeding future

Used by some of the biggest names in the equestrian world, he has many exciting progeny to come.

Competing progeny include Blue Twist, Flipper WL, O-Rising Star, Opaline, P-Crystal Gem, O-Bold Twist, N-Paradigm Twist, O-Pleasant Twist, Lisbrogan Gemtwist, Glitter.

Other Cloned Equines

Chilli Morning - above | Quattro & Chilli Morning Tres (Chilli Morning Clones) - below

Cruising - above | Cruising Encore & Cruising Arish (Cruising Clones) - below

Chilli Morning

Chilli Morning was one of the greatest eventing stallions in the history of the sport. From his 45 international eventing starts, he finished in the top 10 no less than 23 times and is one of only two stallions to win a five-star event. Following his passing in 2020, 3 clones were announced, named Deuce, Tres and Quattro. His clones are now successfully competing in the field of eventing, following in the footsteps of the original horse.

Gemma Stevens & Chilli Morning IV on their way to winning the seven-year-old title at the young horse eventing World Championships in Le Lion.

Credit: www.agencecary.com/FEI

Cruising

Stallion Cruising is the only stallion in Ireland with a 5 star ranking for his own performance, 5* for his showjumping progeny and 5* for his eventing progeny. Winner of 18 International Grand prix's including Aachen CSI5*, Dortmund CSI5*, Lucerne CSI5*, 2nd World cup final Gothenburg 1999, 6th World equestrian games Rome 1998 and much much more! A CSI5* international showjumper, who sadly passed away in 2014 aged 29 years. One year later, in 2015, his cloning was announced, with 2 clones produced, Cruising Encore and Cruising Arish. Both clones are now active within the show jumping circuit themselves and are ranking on the World Breeding Federation of Sport Horses Top Sires Listings.

Mary McCann cloned Cruising to continue the pure Irish Sport Horse genetic line he represented, with the clones bearing much similarity in personality, conformation, performance and sire traits as the original. They were cloned not to become a top sport horse like the original, but to continue to represent his genetics for use in equine performance horse breeding.

Pacino - above | Pacino Clone - below

Tamarillo - above | Tomatillo (Tamarillo Clone) - below

Pacino

Stallion Pacino, by Diamant De Semilly , was bought as three-year-old and produced by Clem McMahon. Pacino competed at the World Breeding Championships for young horses in Lanaken as a six-year-old, and as an eight year-old was making his mark on Nations Cup teams. Clem and Pacino were on the Irish team that won the Hickstead leg of the Nations Cup in July 2012, and the following month did the same in Dublin, resulting in Ireland lifting the Aga Khan trophy. Pacino finished the year as the leading eight-year-old showjumper in the world. Ten years after his sudden passing in 2013, Clem McMahon announced a 3 year old clone of his much loved stallion. Pacino II was a cracking foal – and three years on he is a beautiful, big, scopey model that is like a carbon copy of the original, "It really is uncanny. The way he even looks at you, you have to do a double-take. They are so similar in personality. I had Pacino from when he was three which is nice, and this horse will be produced exactly the same way, so it's interesting times ahead." Pacino II will predominantly be used as a breeding stallion, to continue the legacy of the original horse.

Tamarillo

Tamarillo was one of the world's most successful eventing horses. Tamarillo's part-Arab pedigree gave him a light and extravagant movement in dressage, and speed, endurance and nimbleness in cross- country and showjumping. He has been an ambassador for both British breeding and Arabian blood. Sadly put to sleep in 2015 due to old age-related decline, Tamarillo's clone, Tomatillo, was born in 2013 and is now an established competing and breeding stallion within his own right.

"It's possible that Tomatillo has some areas where he's better than Tamarillo," he said. "His walk seems to be better; it was never Tamarillo's best point. The trot is the same – that was a special feature of Tamarillo. We hope his flying changes will be better. Tamarillo's flying changes were a problem as he wasn't taught them at an early age because they weren't in the dressage test – when it was introduced into the advanced test, he hadn't learnt it as a young horse and it was extra difficult for him."MW Guinness of Biddesden Stud, co-owner of Tomatillo.

Rare Breed Equines

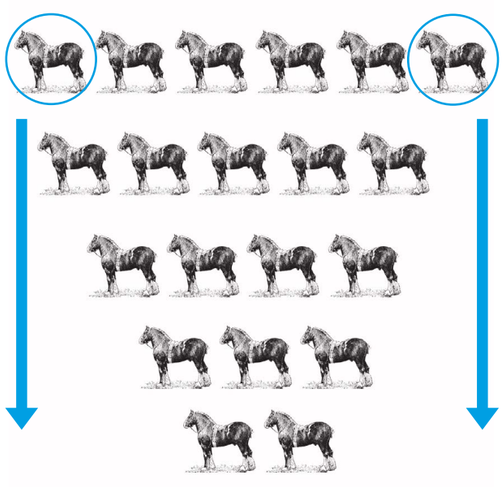
At Gemini Genetics, our equine genetic banking service is not just for performance horses. **We also offer and promote skin sample banking for rare breed equines.**

The UK has 14 native horse and pony breeds. Of these 12 are considered rare, with 5 listed as critically endangered. At Gemini Genetics, we firmly believe skin sample preservation is essential for these native pony breeds, to provide a conservation resource for the future.

Cloning For Conservation

Cloning has proven applications in animal conservation. When a breed or species goes through a genetic bottleneck, whether that be via disease, inbreeding or any other event that leads to a significant population narrowing, cloning can enable genetics of the past to be bought back, and so restore some of the lost DNA and improve the population fitness. This has already been demonstrated in wild endangered species, for example the Przewalski horse (see fact file).

A further future use of preserved skin samples is via induced pluripotent stem cell technology. Here, skin cells are reprogrammed to generate sperm and egg cells. This would allow the creation of new population individuals & new genetic sets from the preserved skin cell DNA. This technology is at present most developed in mice species but is subject to significant research and development and holds much promise for the future of animal conservation breeding.



The application of genetic replication

How The Process Works For Rare Breeds

For rare breed equines, the process of skin sample submission for genetic preservation is comparable to that of equine cloning.

Equines require both the skin sample for genetic preservation plus the accompanying health tests detailed on page 25.

Skin
We need skin samples from your pet to preserve their DNA

>

Chill
Keep the skin sample chilled at fridge temperature, NEVER frozen

>

5 Days
Send the skin sample to us within 5 days of sample taking

To assist in the conservation of these threatened equine breeds, we are able to offer a slightly reduced rate of £500 + VAT for the skin sample genetic preservation. Please contact Gemini Genetics for further information on this rate.

Further Information

For further information on the application of skin sample genetic preservation for the future of rare breed equines, please see the QR code, which links to our Rare Breed Stallion Day 2023. The link includes recorded lectures given on the day from experts in this field, and equine breeders themselves.

A copy of our equine rare breed conservation brochure can also be found via the QR code.

Scan the QR code to see our **Rare Breed Stallion Day**

Scan the QR code to see our **Rare Breed Conservation Brochure**

Przewalski's Horse Case Study

On the 6th of August 2020, ViaGen, our world leading cloning partner, announced the successful birth of the world's first cloned Przewalski's Horse – a colt named Kurt. Using skin sample genetic preservation and cloning technology, colt Kurt was cloned from a genetically important Przewalski stallion, Kuporovic, whose cells were preserved by San Diego Zoo in the 1980's. As a species, the Przewalski horse is extinct in the wild, and captive populations show signs of their historic inbreeding that resulted from their founding population being just 12 horses captured from the wild. The skin sample from Kuporovic was selected for cloning as his pedigree identified as offering significantly more genetic variation than any of his living relatives. As summarised by US based, Revive & Restore, the cloning of this Przewalski horse is a significant milestone for the species; "we've gone back at least 40 years to create genetic diversity; its as if all the inbreeding of that time can be reset" (Ryan Phelan, Co-founder, Revive & Restore). In fact, the cloning of Kuporovic was so significant, that a second clone has now been born, named Ollie, and the work of cloning in conservation continues into other US based species such as the Black Footed Ferret.

Supporting Wild & Endangered Species
Via Charity Nature's SAFE

NATURE'S SAFE
SAVING ANIMALS FROM EXTINCTION

At Gemini Genetics, **we help & support charity Nature's SAFE in its mission to Save Animals From Extinction**. Skin sample preservation not only has applications to domestic animal preservation, but also to **helping to save some of the worlds most threatened animal species**.

About Nature's SAFE

Nature's SAFE is on a mission to Save Animals From Extinction by collecting, indefinitely storing and regenerating somatic and reproductive cells and cell lines from endangered animal species.

Nature's SAFE collects reproductive samples from endangered wild animals (sperm cells & ovarian & testicular tissue), alongside skin samples taken postmortem. These materials are then preserved in a living format so they can be used to assist species recovery in the future.

Help & Support Charity Nature's SAFE

For more information on Nature's SAFE, including how you can support their conservation efforts, please visit their website, via the QR code.

Scan the QR code to **find out more about Nature's SAFE**

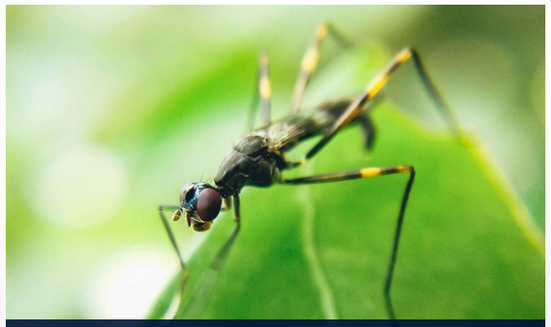
At Gemini Genetics, we assist charity Nature's SAFE in its skin sample banking. Contributing to the conservation of wild and endangered animals, as well as helping prepare the charity for future advancements of skin sample technology, for example the generation of sperm and egg from skin samples via induced pluripotent stem cell technology.

"Nature's SAFE is on a mission to **Save Animals From Extinction**"

Supporting Food Security - UK National Livestock Biobank

From our work with rare breed equines, Gemini Genetics are proud to announce **our latest development in the application of skin sample regenerative cryopreservation**.

The UK National Livestock Biobank is a farm animal gene bank, established to ensure UK livestock breed and herd preservation, and national food security. Based upon semen and skin sample cryopreservation, we aim to be the equivalent of the Millenium seed bank and other seed stores and repositories, but for our crucial livestock sector. We Exist Because Our Livestock Breeds and Food Security Are At Risk.



Our World Is Changing

Climate changes pose new and significant threats to agriculture and to our farming livestock, including a heightened risk of disease outbreaks.

75% of the world's food comes from just **12 plants** & **5 animal species**

Scan the QR code to **find out more about UK NLB**

30% of livestock breeds are at **risk of extinction**
6 livestock breeds are **lost** every month

If you are interested in genetic banking from livestock, please contact UK National Livestock Biobank for more information.

01948 668 057 / 07710 778 016 | office@livestockbiobank.com

www.livestockbiobank.com

UK National Livestock Biobank

Our Sister Company
Stallion AI Services

STALLION
AI SERVICES

Gemini Genetics shares its site with **world renowned semen collection and processing centre, Stallion AI Services**. As such, the following services are also available and are complementary to supporting breed numbers and breed preservation.

STALLION SERVICES

SEMEN FREEZING - Indefinitely preserve your stallion's breeding potential & protect against the unexpected

Semen freezing involves the freezing of sperm cells to a temperature of -196 degrees Celsius. At this temperature, the sperm cells are frozen in a static but viable state. When thawed, the semen is re- awakened to its pre-frozen form and is capable of fertilisation.

Price : Stallion livery (£56.00 per day) plus £195 + VAT per frozen semen collection fee plus £20 per dose frozen.

POST CASTRATION EPIDIDYMAL SEMEN EXTRACTION – last chance semen salvage & preservation or planned sperm banking following castration

Post castration epididymal semen extraction refers to the removal of semen from the epididymis of the testes after castration of the stallion. This can be following a planned castration but can also be used in emergency situations e.g. following stallion death or trauma that will prevent future breeding.

Price Option 1: £750 + VAT for procedure being carried out during work hours (7am-5pm) with stallion health tests being back before the castration (i.e. elective castration) plus £25 + VAT per dose frozen.

Price Option 2: £900 + VAT for out of hours processing or off-site processing due to stallion health test results not being available (i.e. sudden death of stallion and procedure required immediately) plus £25 + VAT per dose frozen.

SEMEN SEXING – the latest technology in semen processing that offers breeders the chance to control the gender balance of future generations & to create a more sustainable foundation for the future population

From the 1st of April 2019, Stallion AI Services became the 1st UK equine semen collection centre to offer sexed semen to equine breeders and on 15th of July 2020, we achieved a world first – the first ever successful breeding of a Suffolk Punch filly via sexed semen insemination! Sexed semen is currently available on a fresh semen basis to mares standing at Twemlows Hall Stud Farm and on a frozen semen basis where ICSI is used to achieve conception.

Price: Available upon request.

MARE SERVICES

OOCYTE RETRIEVAL - the extraction of egg cells from within the ovary

The eggs are then shipped to Avantea SRL in Italy where they are inseminated with semen via intra-cytoplasmic sperm injection (ICSI) and either used immediately (transferred into a carrier mare to establish a pregnancy) or frozen down as an embryo for future use. Available at several locations across the UK.

Price: from £500 - £1000 + VAT

For more information on any of these services, please contact Stallion AI Services

01948 666 295 | lab@stallionai.com
www.stallionai.co.uk

Our Sister Company
Elite Kennel Fertility

ELITE KENNEL
FERTILITY
Veterinary Practice

At Gemini Genetics, we are also proud to share our site with Elite Kennel Fertility. Elite Kennel Fertility Ltd has **over 30 years' experience in assisted reproduction techniques and canine breeding**.

Their state-of-the-art laboratory offers the very latest technology in canine reproduction and fertility.

Services offered at Elite Kennel Fertility include fresh, chilled & frozen semen processing for stud dogs, puppy vaccinations, progesterone testing for bitches and fertility supplementation. They also launched 'The Stud Dog Register' in 2024, as a central point for dog breeding choices in the UK and worldwide!

GEMINIGENETICS

Contact

For further information on our genetic preservation services, please contact us

Gemini Genetics
Chapel Field Stud
Ash Lane
Whitchurch
SY13 4BP

01948 668 057 / 07710 778 016

info@geminigenetics.com

www.geminigenetics.com