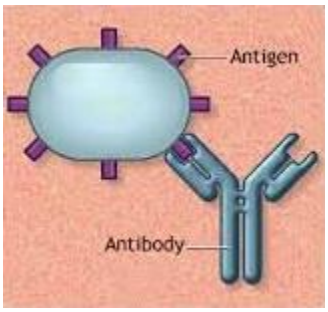
Monoclonal antibodies – our newest branch of medicine

There is a brand new branch of medicine opening up to the veterinary world, with two game changing drugs now available to us.

Monoclonal antibodies have been theorised since the early 20th century, were developed for diagnostic tests in the 1980s and in the early 2000s the first human monoclonal antibody treatments were produced.

To understand how monoclonal antibodies work you need to know a little about the immune system.

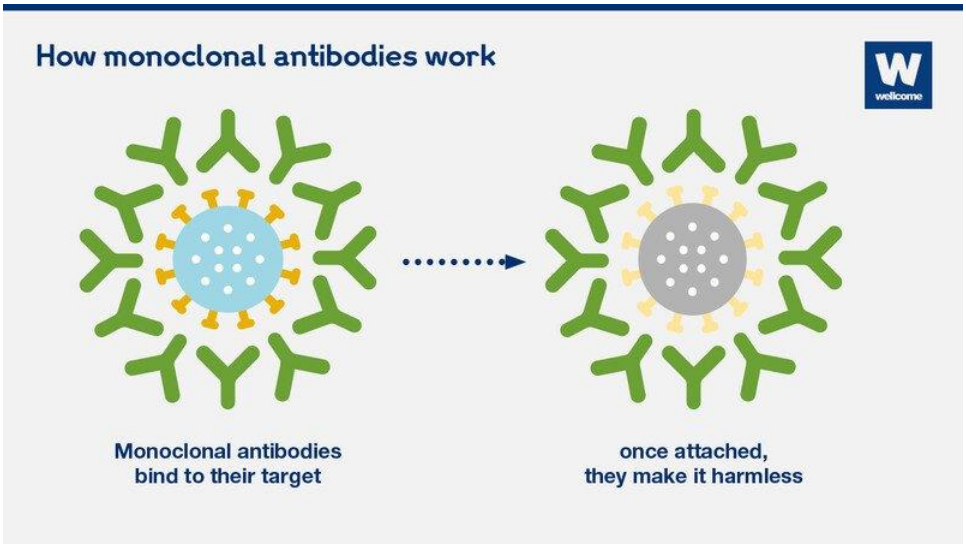


An antibody is a protein produced by a white blood cell called a lymphocyte. This antibody has a binding site that targets a specific protein called an antigen. In most cases these antigens are present on bacteria, parasites or cells infected with viruses. These antigens can also occur in cancer cells (allowing the body to recognise and attack some cancers).

When it goes wrong these antigens are in food proteins, or plant material – this is where an allergy occurs.

Each antibody is very specific and targets only 1 site. Your blood stream contains antibodies for every disease you have been exposed to, including those you have been vaccinated against.

To make a monoclonal antibody we find an antigen we don't like, and can create and grow an antibody to it. This antibody can then be used to treat this disease. In humans we have monoclonal antibodies targeted at some cancers, immune mediated diseases like rheumatoid arthritis and Crohn's disease, and some viruses.



Because the body already naturally produces antibodies there is an inbuilt pathway to remove the excess. This pathway doesn't require metabolisation by the liver or kidneys, nor does it produce toxic compounds when broken down, this makes monoclonal antibody therapy remarkably safe.

However because every species has unique antibodies these treatments are all VERY species specific, we cannot use human antibodies in dogs, dog antibodies in cats, or Vica versa

Veterinary treatments:

The first veterinary monoclonal antibody we have had available is cytopoint.

Cytopoint is a canine monoclonal antibody (for dogs) and it targets a protein called interleukin 31 (IL31).

IL31 is a chemical signal produced in the body that is a major driver for allergic skin disease in the dog, Cytopoint is a treatment for skin allergies. Cytopoint has been a game changer for many dogs, providing symptomatic relief and allowing the skin to heal.

Cytopoint is licensed as a monthly injection, however in some dogs we have had relief for much longer, even up to 3 months. Also depending on the allergy some dogs only need it during their allergy season (often summer so can have the winter off).

The second monoclonal antibody released has been Solensia.

Solensia is a feline monoclonal antibody (for cats) and targets nerve growth factor (NGF)

NGF in the fetus and very young animal is a hormone which, unsurprisingly, stimulates nerve growth, but in the adult where nerves do not grow it is repurposed as an inflammatory hormone and is one of the major driving factors in osteoarthritis.

Solensia has been available in Europe and the US for the last 18months and has been phenomenal for cats with arthritis.

Currently our products for arthritis are broadly speaking

- joint support, nutrients that stimulate cartilage regeneration, they can be given by mouth or as an injection, but have limited pain relief function
- Or pain relief, usually anti-inflammatory which work brilliantly on the arthritis but can have problematic side effects in the gut or kidneys, especially in older cats.
- With the release of solensia we now have a product that show excellent response AND is safe for older cats and their kidneys.

Vet HQ

As the technology develops more monoclonal antibody therapies are likely to be developed allowing us safe and effective treatment for diseases we have had trouble managing.

Good Health

Dr Tony