The FIV-positive Cat: Prolonging the Quality of Life

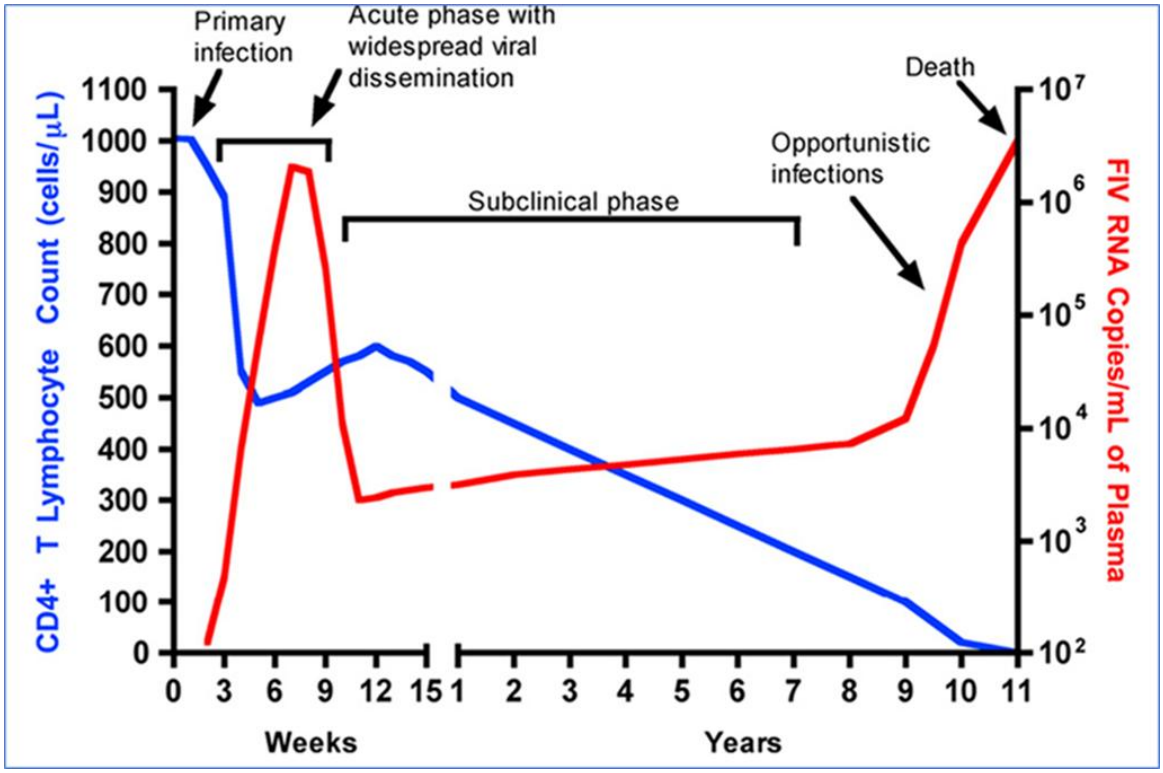
Fact: FIV Is An Insidious Disease That Is Fatal

1. FIV is an insidious disease which goes undetected for many years as FIV-positive cats appear clinically healthy for as long as 8 – 10 years.

2. Unlike FeLV, FIV is for life. Even if the immune system is functioning, the cat cannot self-eliminate the FIV virus.

3. When clinical signs appear (including cancer), it is almost certain that the cat is at the end stage of the disease *i.e.*, **the cat is terminally ill**. This is because the immune system has become so badly damaged that multiple organ failures occur. The depletion of the lymphocytes is seen in the Complete Blood Count (CBC) report. Platelet count is equally severely low or depleted. At this end-stage of the disease, the stem cells in the bone marrow are all infected with the FIV and are no more capable of generating lymphocytes and platelets.

4. The graph below by *J. Skyes (2010), Immunodeficiencies Caused by Infectious Diseases in Veterinary Clinics of North America: Small Animal Practice** succinctly describes the pathogenesis of FIV leading to death primarily because of a weakened immune system:



CD4+ T lymphocytes are called T-helper cells that stimulate a vigorous immune response to viral and bacterial infections. Measuring CD4+ T-lymphocyte in the blood is a critical tool in providing prognosis and measuring the success of anti-retroviral drugs in AIDS human patients. As FIV belongs to the

same Lentivirus family as HIV (the virus that causes AIDS in humans), measuring the CD4+ T lymphocyte is an equally good tool in providing prognosis and measuring the success of treatment for FIV-positive cats. **From the graph, it can be deduced that of the CD4+ T-lymphocyte population falls below 600 cells per micro-liter (cells/µL)** of blood or half the normal population, the prognosis is very guarded as there is total incapacitation of the blood marrow to produce anymore such cells**.

5. FIV infection starts early with kittens showing mild, transient symptoms of acute viremia. If left untreated with an antiviral therapeutic these cats will to suffer the full effect of FIV-induced immuno-suppression at an advanced age and die from the consequences of a complete breakdown of the immune system. Hence it is prudent to consider starting an early monitoring and anti-viral therapeutic program **before** their lymphocyte population starts to decrease beyond salvage.

* *Full article, https://pubmed.ncbi.nlm.nih.gov/20471525/*
** *Equivalent to around 1,500 cells per micro-liter total T-lymphocyte count*

How Can RetroMAD1® Help In Saving Lives?

RetroMAD1 is not only a broad-spectrum antiviral therapeutic, but is a true anti-retroviral agent that is capable of destroying FeLV, FIV and HIV (human AIDS virus).

1. RetroMAD1 has shown to successfully inhibit both FeLV and FIV in *in vitro* assays by Biovalence.

Feline Retrovirus	Cell Line	% Viral Reduction based on MTS assays		
		24hr *p.i.*	48hr *p.i.*	72hr *p.i.*
FeLV	CRFK	100%	100%	100%
FIV	CRFK	Not done because infected cells not treated with RetroMAD1 did not die in 48 hours of *p.i.*		91.8%

p.i.: post-infection. Cells were infected with the virus and then treated with RetroMAD1 at 100µg/mL. Cell mortality or survivability was measured at 24hr, 48hr and 72hr after being treated with RetroMAD1 and the percentage of survivability were compared with infected cells not treated with RetroMAD1. Viral reduction as a percentage of surviving cells vs. dead cells were reported.

2. RetroMAD1 has also been shown to successfully inhibit HIV as determined by the National Institute of Allergy and Infectious Diseases (NIAID), Montana, USA.

CXCR4 tropism of HIV1 was conducted in this ELISA study using p24 viral antigen, which is coded by the gag gene of HIV to construct the inner virion, thereby it is a useful antigen to determine viral replication. According to **Figure** below, there is no difference between treated and untreated PBMCs during 2 dpi. However, during 7 dpi, untreated PBMCs demonstrated significantly higher (15-fold increase) p24 copies when in comparison to treated cells. From day 2 to 7, there is no significant increase in the number of p24 in RetroMAD1-treated samples.

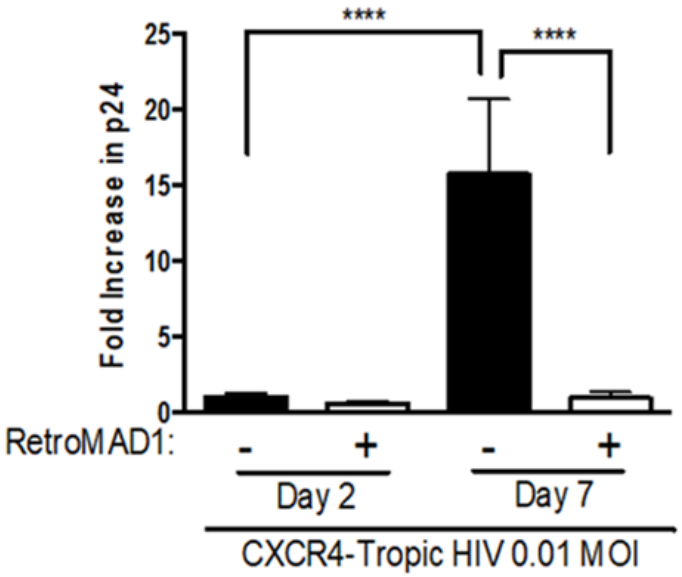
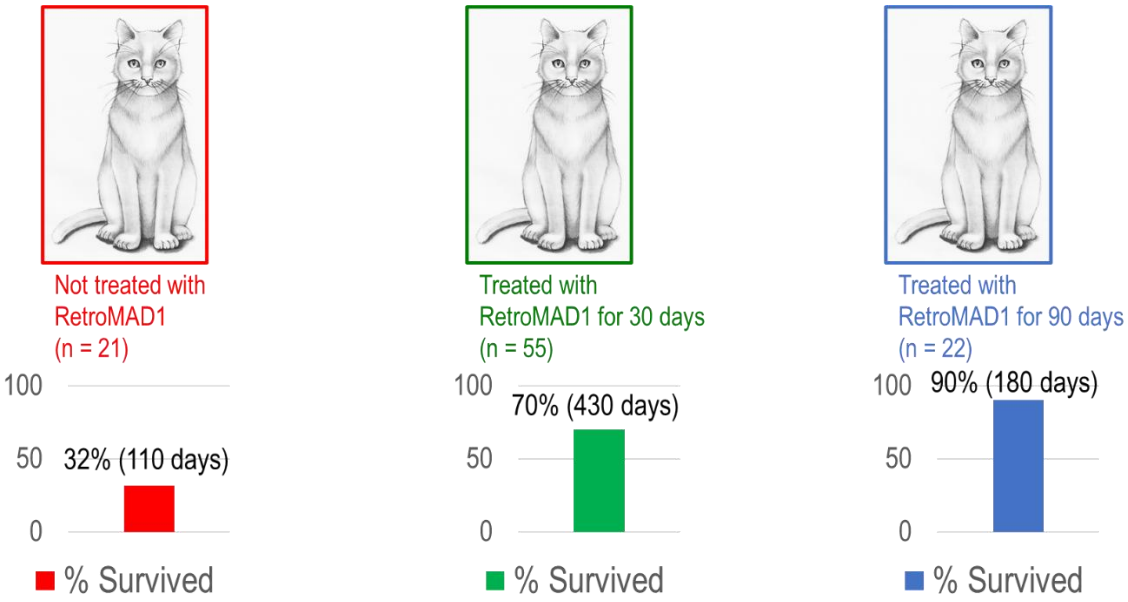


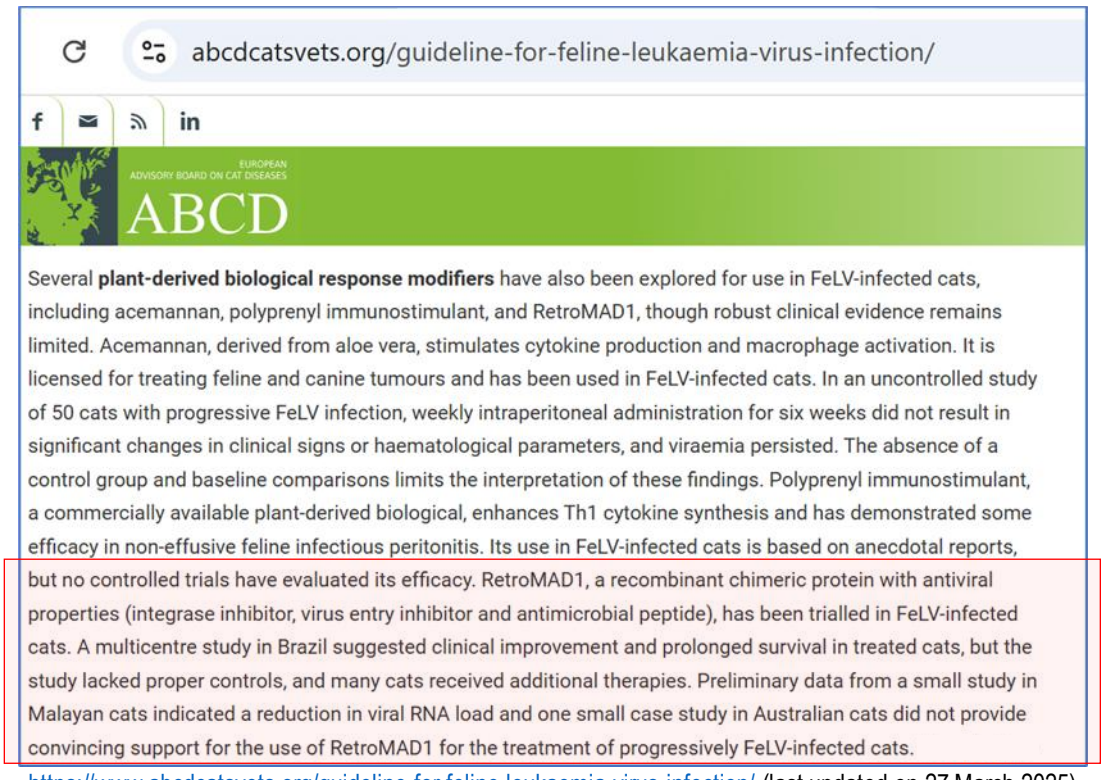
Figure: *ELISA analysis of fold increase in p24 copies versus days of post-infection (day 2 and 7) in treated and untreated PBMCs.*

PBMC: peripheral blood mononuclear cells were infected with HIV-1 and treated with RetroMAD1 at 100 ng/µL. p24 antigen is a capsid protein that is common to all retroviruses and detects active, replicating viruses.

3. RetroMAD1 has demonstrated to clinically cure FeLV cats in a trial conducted by the Federal University of Rio De Janeiro and published in the Archives of Veterinary Science and Medicine in December 2019.



4. RetroMAD1 is now a global thought leader for FeLV therapy and is mentioned as a treatment for FeLV in the European Advisory Board of Cat Diseases in March 2025.



abcdcatsvets.org/guideline-for-feline-leukaemia-virus-infection/

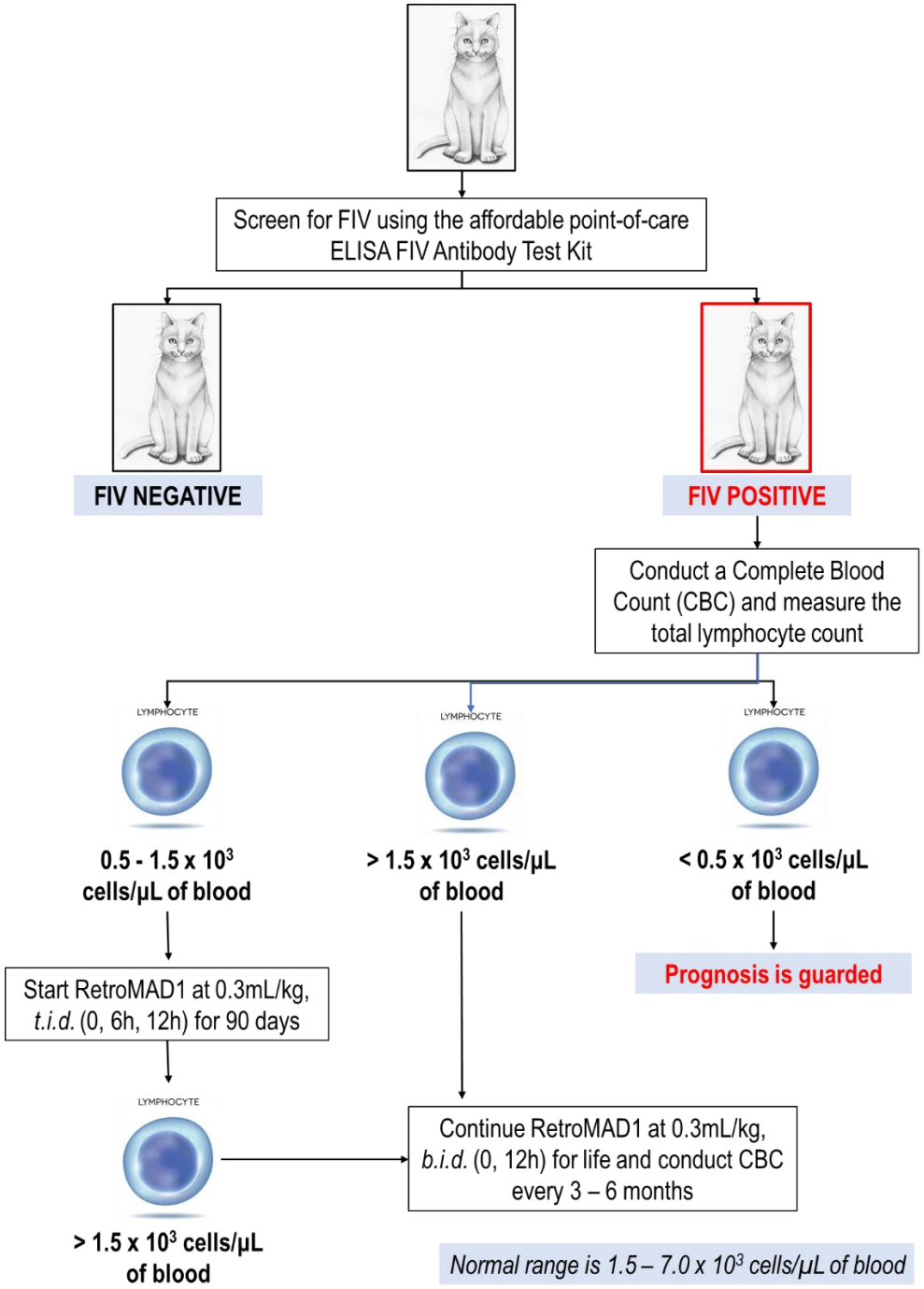
EUROPEAN ADVISORY BOARD ON CAT DISEASES
ABCD

Several **plant-derived biological response modifiers** have also been explored for use in FeLV-infected cats, including acemannan, polyprenyl immunostimulant, and RetroMAD1, though robust clinical evidence remains limited. Acemannan, derived from aloe vera, stimulates cytokine production and macrophage activation. It is licensed for treating feline and canine tumours and has been used in FeLV-infected cats. In an uncontrolled study of 50 cats with progressive FeLV infection, weekly intraperitoneal administration for six weeks did not result in significant changes in clinical signs or haematological parameters, and viraemia persisted. The absence of a control group and baseline comparisons limits the interpretation of these findings. Polyprenyl immunostimulant, a commercially available plant-derived biological, enhances Th1 cytokine synthesis and has demonstrated some efficacy in non-effusive feline infectious peritonitis. Its use in FeLV-infected cats is based on anecdotal reports, but no controlled trials have evaluated its efficacy. RetroMAD1, a recombinant chimeric protein with antiviral properties (integrase inhibitor, virus entry inhibitor and antimicrobial peptide), has been trialled in FeLV-infected cats. A multicentre study in Brazil suggested clinical improvement and prolonged survival in treated cats, but the study lacked proper controls, and many cats received additional therapies. Preliminary data from a small study in Malayan cats indicated a reduction in viral RNA load and one small case study in Australian cats did not provide convincing support for the use of RetroMAD1 for the treatment of progressively FeLV-infected cats.

https://www.abcdcatsvets.org/guideline-for-feline-leukaemia-virus-infection/ (last updated on 27 March 2025)

RetroMAD1®: Prolonging the Quality of Life of the FIV-positive Cat

The flow-chart explains RetroMAD1's critical role in prolonging the quality of life for FIV-positive cats. With RetroMAD1 as an **antiviral therapeutic of first instance**, veterinarians have all the more reason to screen every cat that comes to the clinic to determine its FIV status and start a meaningful conversation with its paw-parent to effectively manage this disease that leads to a rewarding life with the fur-baby.



RetroMAD1 – prolonging the quality of life of FIV-positive cats (2025.09.09)