BACK

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Some comments on the use of animal models to prove the HIV theory of AIDS

That animal models are problematic was appreciated in 1025 AD by the Persian polymath and physician Avicenna. Avicenna compiled a five volume *Canon of Medicine* in which he advised "Experiments should be carried out on the human body. If the experiment is carried out on the bodies of [other animals] it is possible that it might fail...The...reason is that the quality of the medicine might mean that it would affect the human body differently from the animal body...These are the rules that must be observed in finding out the potency of medicines through experimentation. Take note!".[1] In present times we can include 'pathogen' along with 'medicine'.

An animal model is "an animal sufficiently like humans in its anatomy, physiology, or response to a pathogen to be used in medical research in order to obtain results that can be extrapolated to human medicine". In this case the pathogen is HIV and although no effort has been spared, no model of HIV causing human AIDS has been forthcoming. In a 2015 review entitled "Animal models in HIV-1 protection and therapy" the authors acknowledge "the lack of a flawless HIV-1 infection and pathogenesis model" and affirm "Models that utilize simian immunodeficiency virus (SIV) infection of rhesus macaques continue to hold prominence in the literature".[2] In other words, the predominant animal model for human AIDS is experiments performed on monkeys using a monkey retrovirus. The reason for using SIV is that monkeys given material claimed to be a retrovirus HIV do not develop AIDS. The "other" model uses "humanized mice" which are mice engineered to carry functioning human genes, cells, tissues, and/or organs. These include BLT (Bone Marrow Liver Thymic) mice which carry "fully functional human immune systems and infection-fighting cells, such as T cells", T cell–only mice [ToM]) and mice devoid of human T cells (myeloid-only mice [MoM]).[3] Even if a "humanized mouse" were to develop AIDS its relevance to real humans is questionable. A more recent approach reported as "New monkey model for AIDS offers promise for medical research" involves a complex regime where "the researchers had to alter both the virus and the macaque immune system in order to induce AIDS".[2, 4, 5] Hence in applying animal models researchers either use a different virus (SIV) or alter the animal or the virus (HIV) or both. Yet none has been able to prove HIV causes human AIDS.

In what may be regarded a thought-provoking caveat, in early 20th century America Claude Lavinder used animal models in attempts to prove the vitamin deficiency disease pellagra is an infectious disease. Postulating the existence of a bacterium *Streptobacillus pellagrae*, Lavinder injected the blood, spinal fluid, and spleen pulp from pellagrins into rabbits, chickens, and guinea pigs. When these experiments failed he injected monkeys, again without success.[6]

If repeated experiments injecting material derived from the putative source (AIDS patients) do not cause the disease in animals then it must be time to consider that there is no infectious animal model and put an end to so much animal sacrifice. Indeed the only animal model bearing any resemblance to human AIDS is non-infectious, as reported by Victor Ter-Grigorov and his colleagues from Israel[7] in *Nature Medicine* in 1997. However, this model has not been pursued.

In September 2016 Dame Jane Morris Goodall, the British primatologist and environmentalist was Interviewed on ABC Radio Australia. The topic was the current state of

the world's primate population, particularly chimpanzees, whose numbers have fallen 90% from two million to 200,000 over the past 100 years. She was asked about a statement she and Sir David Attenborough made about the need to curtail the use of primates for animal experimentation. In regard to the remaining chimpanzee population she said, "it was very critical for chimpanzees, fortunately in almost all countries now the use of chimpanzees *per se* has been discontinued...partly because most of that experimentation today isn't providing useful results. They are our closest relatives but they are different and so you can't always rely on some medical procedure that is beneficial for chimps being beneficial for humans, but the statement David and I made was more about the other primates, the monkeys, mostly the poor old Rhesus monkeys, but they are still used".[8]

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