

**List of specific questions this cross-party group wish to see the
Home Affairs Select Committee put to the appropriate scientific advisers to the
Home Office.**

The following questions have been prepared by the leading scientific Board opposed to experiments on animals purely on human medical and scientific grounds, namely [Americans and Europeans for Medical Advancement](#) (AFMA/EFMA), who provide the scientific evidence for the Parliamentary-based campaign [For Life On Earth](#).

By way of introducing this Board, EFMA broke new ground when it acted as chief scientific witness for an historic [animal protection coalition](#) in 2003, which secured a ruling of international precedence on ‘[national interest...medical/scientific](#)’ grounds, defeating Cambridge University’s plans to build a new non-human primate laboratory. AFMA/EFMA have published numerous times in the [peer-reviewed scientific literature](#), and have also published five books to date on the human cost of experiments on animals, including the seminal work [Animal Models in Light of Evolution](#) (2009) Shanks PhD and Greek MD.

1. Does the government’s scientific advisor agree that in science, the burden of proof is on the claimant and that the Null hypothesis applies to claims?
2. Does the government’s scientific advisor agree that in science there is difference between evidence and anecdote?
3. Does the government’s scientific advisor agree that in science facts are more important than the personality of the person reciting the facts?
4. Does the government’s scientific advisor agree that in science the conviction with which a claim is made is irrelevant to the validity of the claim?
5. Does the government’s scientific advisor agree that in science the argument from authority carries no weight?
6. Does the government’s scientific advisor agree that if a test or practice is not accomplishing the purpose for which it is conducted that it should then be abandoned?
7. Does the government’s scientific advisor agree that an act is fraudulent when an applicant for government funding makes statements in support of the application that have no basis in science or reason?
8. What role did rabbits play during Fleming’s research on penicillin?
9. What was the role of monkeys for discovering the mechanism of entry of the poliovirus?
10. In light of Darwin’s Theory of Evolution and knowledge that has been added since the mid 19th century in the form of evo devo, gene pleiotropy, the regulation and expression of genes, gene networks, convergent evolution, alternative splicing, and the genome, proteome, transcriptome, interactome, metabolome, regulome, and epigenome and so forth, in addition to empirical evidence such as the fact that the gene that causes Sanfilippo syndrome in humans causes no disease in monkeys, why does the government’s scientific advisor believe the function of a gene in a mouse

will replicate the function of that same in humans? Please provide studies with direct comparisons so as not to cherry pick.

11. Several mutations that cause genetic diseases in humans - such as phenylketonuria and Sanfilippo syndrome - are the normal form in macaque monkeys. What does this imply for animal modeling?
12. What is pleiotropy and why is it important in the debate regarding animals in research and testing?
13. What is the general function of the *hoxbox* and why is this important for the animal model discussion?
14. What is the general function of the *Pax6* and why is this important for the animal model discussion?
15. Why do we see recapitulation in embryogenesis and why is this important for the animal model discussion?
16. What is the difference between homologous and analogous structures and why is this important for the animal model discussion?
17. How can one quantitate predictive ability in science and why is this important for the animal model discussion?
18. Would the government's scientific advisor please explain positive predictive value and negative predictive value in terms of using animal models to study human diseases and drug reactions?
19. What is the difference between a true positive concordance rate and positive predictive value and why is this important for the animal model discussion?
20. Numerous studies have been published in the scientific literature that reveal toxicity testing in animals is of no predictive value in humans. In light of this, why does the government's scientific advisor agree that such tests should be conducted?
21. Define complexity and or complex systems.
22. What is the difference between a complicated system and a complex one?
23. What is the difference between a chaotic system and a complex system?
24. What does robustness mean as applied to a complex system?
25. Compare and contrast reductionism with complexity.
26. Would the government's scientific advisor please comment on the implications for animal-based research that results from the commonly accepted fact that reductionism is inadequate for studying and predicting the behavior of intact complex systems?
27. Given the fact that animals and humans are examples of complex systems that have evolved with different trajectories, what characteristics of a complex system leads the government's scientific advisor to believe that one evolved complex system should, even in theory, be capable of predicting drugs and disease response for a second evolved complex system?
28. Would the government's scientific advisor please give ten examples of where animal models led scientists to believe drugs or diseases affected humans in a specific way whereas the effect was actually quite different and this led to harm and even death of humans?
29. Why and in what year did the government mandate animal testing?
30. Are animal tests during drug development designed to protect the first humans that take the drug or the human population in general?
31. Does the incidence and course of disease vary among ethnicities?

32. Would government's scientific advisor please explain why animal models are still viable in light of the fact that personalized medicine is now recognized as the goal for human medicine?
33. Would the government's scientific advisor please comment on the following? "The Kingdom Animalia is composed of members with different evolutionary trajectories and these members are examples of complex systems. Taken together, these two facts lead to the hypothesis that small differences between species will manifest as profound differences to perturbations such as drugs and disease. Empirical evidence confirms this hypothesis."
34. In light of the fact that only one paper out of 25,000 basic research papers published in the highest ranked science journals led to a new chemical entity (drug), would the government's scientific advisor please justify such research that uses animals?
35. Would the government's scientific advisor please explain why, if animals can be used as predictive models for humans that veterinarian students attend one school but medical students another?
36. In light of Craig Venter's statement that every higher animal could be made using the same genes, simply by varying regulation and expression, would the government's scientific advisor please explain why these differences in regulation and expression can be ignored for drug testing and disease research?
37. Name as many medical advances (as opposed to advances in science) that could not have been made without animals.
38. Would society have vaccines today without animal experiments?
39. Would society have antibacterials today without animal experiments?
40. Would society have deep brain stimulation today without animal experiments?
41. Would Dr Blaylock have been able to perform the first Blaylock-Taussig operation without first having performed the operation on dogs?
42. What is the difference between using animals as a heuristic and using them as predictive models?
43. Why did the India's *Tribune* newspaper report that 1725 people died in India during five years due to drug trials in light of the fact that animal testing was performed in all cases?