# Review of: "Is creeping abandon of human cancer defences evolutionarily favoured?"

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Potential competing interests: No potential competing interests to declare.

This paper is one of many papers proposing a mechanism of programmed aging. In this case early death by the abandonment of tumor defenses is proposed to be advantageous for humans because either (1) tumor defenses are costly, and the energy saved by abandoning tumor suppression is better used elsewhere or (2) because early death prevents excessive reproductive success and therefore increased and detrimental inbreeding by older individuals in small groups of humans.

The authors start with a wrong assumption. They state that humans have a uniquely high susceptibility to cancer, even though laboratory mice have a much higher rate of death from cancer than humans.

The authors argue that “males of high social status can attract new reproductive partners again and again until an age that has seen several generations grow, which in case of a not-so-large tribe would have considerably narrowed down its genetic pool.” If prevention of excessive male reproduction would be the purpose of aging, we should see something like a male menopause, or the cessation of sperm production. But we see the opposite, female menopause and the continuation of male sperm production and fertility until very old age. This clearly contradicts the proposal of the authors and makes it extremely unlikely that aging evolved to reduce male reproductive success. Exactly the opposite, the “patriarch hypothesis”, that male reproductive success in older age has driven the evolution of longevity in humans, has much better support.

The suggestion that abandoning tumor suppression might save energy is more promising, but the authors make little effort to argue, using previous research or other citations, in support this view. This is unfortunate and this part could benefit from making more effort to find supporting data.

Somewhat strangely, the authors cite my work, “The tumor suppression theory of aging” in a separate category of references as:

Other References

Wolf A.M. (2010), The tumor suppression theory of aging, Mechanisms of Ageing and Development 200: 111583.

Even though the work is not cited in the text itself, and the paper is from 2021, not from 2010. This should be fixed, and it is not clear why this separate category of references is created or why the paper is cited.

The authors suggest some experiments to test their theory. This is a good idea. Maybe the authors should try to do some

of these experiments themselves, as they can be done using bioinformatics and general modelling.

In conclusion, I think the authors will have a very hard time getting this theory to be considered as viable in its current form.