



Newly discovered letter: why Muller failed to cite the negative mouse mutation findings of Snell, preserving his chances to receive the Nobel Prize

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Abstract

A recently acquired letter between Hermann Muller and his wife (March 21, 1933) reveals that Muller had learned that he had been nominated for the Nobel Prize in 1932 with about 1/3 of the total votes being supportive. Muller was hopeful that over time sufficient votes would lead to receiving the award. The knowledge of Muller on this matter and its timing provide a likely explanation why Muller never cited the negative mouse mutation findings of George Snell, performed under Muller's direction during that time period. This action of Muller, along with the failure of Snell to promote his discovery, greatly reduced the chances that those findings would complicate his attempt to garner support for his LNT single-hit model and its application to hereditary and cancer risk assessment. It also helped Muller achieve the Nobel Prize, allowing him the necessary international visibility to promote his ideologically driven ionizing radiation-related LNT-based paradigm.

Keywords Hermann Muller · George Snell · Linear non-threshold · Dose–response · LNT · Mutation · Ionizing radiation

Introduction

In a recent paper in the Archives of Toxicology, Calabrese and Selby (2024) reported that George Snell, a recent PhD in mouse genetics from Harvard University (and a future Nobel Prize recipient for work on immunogenetics–1980), failed to extend Muller's findings in fruit flies to mice. As documented in the Calabrese and Selby (2024) paper, this research had been carefully planned by both Snell and Muller with Snell working under the direction of Muller in his lab at the University of Texas at Austin starting in July, 1931. In many respects, this failure of Snell to validate and extend the Muller fruit fly findings within a mammalian model was a major development, a very noteworthy finding. Yet,

Snell failed to cite the major discovery of Muller (1927) even though it was central to the nature of his research and was the study that inspired his research and brought him to the University of Texas. In addition, Muller, in a similar very incredible manner, never cited the major discovery of George Snell throughout his entire scientific career.

Newly discovered Muller letter

Within a very short period after the new paper of Calabrese and Selby (2024) was published, Calabrese obtained a new set of preserved letters of Muller, one of which provides unique insights into this bizarre situation in which neither the postdoc George Snell nor his mentor Hermann Muller cited each other. In a letter dated March 21, 1933 to his wife, Muller wrote that he had learned (i.e., Muller does not indicate how he came to know) that he had received 6 or 7 out of 21 votes to receive the Nobel Prize for Physiology or Medicine. He knew that his Ph.D. advisor Thomas Hunt Morgan had also received a similar number of votes for the Nobel Prize. Muller speculated that it was possible that Morgan and he would end up sharing the Nobel Prize. He told his wife that these votes this year would likely increase over time with sufficient votes eventually to award him the prize.

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He also told his wife to keep this information confidential. The only exception would be his best friend, confidant and colleague Edgar Altenberg, whom he knew could be trusted to keep this information confidential.¹

This newly discovered letter of Muller provides a clear motive for why Muller would never cite the negative findings of Snell for fear they would have had the effect of challenging the extrapolated significance of Muller's data with fruit flies regarding their relevance to mammalian models in general and humans in particular. While the letter did not mention the research of Snell, it is clear that it would have been in Muller's best interests regarding possibly being awarded the Nobel Prize if the Snell paper did not challenge the relevance of Muller's fruit fly data for humans. Thus, this letter pretty much removes any remaining mystery regarding why Snell never cited the stunning 1927 research paper of his mentor Hermann Muller. It does appear that the failure of both parties to cite each other was rooted in Muller's profound self-interest, that is, to acquire the Nobel Prize, something he had long desired. While Thomas Hunt Morgan would receive the Nobel Prize in 1933, Muller would have to wait another 13 years, until 1946.

This was not the last time that Muller would be involved in redirecting scientific interest from the research of a postdoc whose findings were at variance with Muller's prevailing self-interest/ideology. This was also the case with the research of Ernst Caspari during the Manhattan Project in which Caspari's findings not only failed to support the LNT model concerning radiation-induced gene mutation but actually supported the threshold model. Once again, the postdoc was permitted to publish the findings (i.e., again in the journal *Genetics*) but to have the findings greatly deemphasized in their significance (Calabrese 2011, 2019), making these important scientific findings nearly "invisible" in a practical sense. Thus, we see two major research developments for which Muller appears to have influenced decisions so as to

greatly marginalize their capacity to affect both his career and the field of radiation genetics and hereditary and cancer risk assessment. In effect, Muller placed himself and his 1927 X-ray induced genetic damage findings (we are not giving him credit for inducing point mutations—see Calabrese 2019) at the center of the twentieth century dose–response and the hereditary and cancer risk assessment vortex.

Conclusions

These recent historical discoveries are particularly important because they reveal that entire scientific fields (in this case cancer risk assessment) can be fraudulently redirected and sustained with the various series of transforming manipulations being hidden, merely by an appeal to authority as in the cases of Muller's actions. In addition, Muller understood the power of the Nobel Prize and used it and the fear of radiation due to the bombings of Hiroshima and Nagasaki to lead a similarly minded group of notable US radiation geneticists to convince the US government and, soon thereafter, the world community to switch from a threshold dose–response model for cancer risk assessment to a linear dose–response model for both ionizing radiation and chemical carcinogens. This major story, like all entities, has a beginning and a developmental process. The Snell and Muller story shows how Muller (and Snell) teamed up to protect Muller's interests and ultimately changed and redirected the field of cancer risk assessment to the present time (a major impact on society lasting almost a century thus far).

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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- Calabrese EJ (2019) The linear no-threshold (LNT) dose response model: a comprehensive assessment of its historical and scientific foundations. *Chem-Biol Interact* 301:6–25

¹ Letter from Hermann Muller to his wife Jesse – Transcript (source: Cold Spring Harbor Laboratory Archives Collection: David Muller Collection of Hermann Muller, 1900-1945 Papers): "I feel very useless and ashamed, but nevertheless feel it best to continue lying low this way till the fall. I didn't tell you before and don't want you to repeat it to anyone (but Edgar and he again must be silent), but I feel I must justify my inactivity. Hence, I will say that there is a small chance that I (jointly with Morgan) maybe given the Nobel Prize in Physiology and Medicine next October. We got 6 or 7 votes out of the 21 last Oct. but these things often run several years before there are enough votes. I feel I could be of more help to everything that we want to push forward if I had such a label looking at the matter in a purely practical way – so present sacrifices of my activity in what we consider the right direction are justified, to give a chance for that. Hence, I wish to give the talk in Scandinavia that I was invited to give. But I would not wait after this October if it all falls through then, I will not let the future chance of it stand in the way of anything I might otherwise think worth doing."

Calabrese EJ, Selby PB (2024) Muller and mutations: mouse study of George Snell (a postdoc of Muller) fails to confirm Muller's fruit fly findings, and Muller fails to cite Snell's finding. Arch Toxicol. <https://doi.org/10.1007/s00204-024-03718-1>

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