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Genes that modulate the frequency of mutation at meiosis

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If trained as a mammalian reproductive physiologist, one is not best placed to make an original contribution to the discipline of genetics. However, consideration of nuclear events in germ cells may serve as a bridge between the two fields of study.

Because most mutations are deleterious, one might anticipate that any tendency towards such expensive mistakes need to be eliminated. This remark prompts a key question that appears to have been overlooked in the established literature, viz., is the frequency of mutation in the germ cell line preserved at a minimum threshold so that a basis for natural selection is invariably present? If so, is there a gene or sequence of genes to facilitate a minimum rate of mutation? It seems improbable that such a key aberration would be left wholly to chance. To be effective, a corollary would require a means of inhibiting the occurrence of too high a mutation frequency in

the germ cell line: in other words, some form of genetic homeostasis, such as a feedback system that monitors and optimizes the incidence of mutation at meiosis. Random and DNA-guided mutations may co-exist.

As of this writing, the identity of such putative genes is a matter of speculation. However, it could become the focus of research and offer an exciting bridge between reproductive physiology and molecular genetic.

Conflict of interest

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