

CONTRIBUTION

A review on the implications of epigenetics in the evolution of sex chromosomes

Published on 30 April 2021

Aline Muyle and Gabriel Marais (LBBE) have contributed to a special issue of Philosophical Transactions of the Royal Society B on 'How does epigenetics influence the course of evolution?' edited by Alyson Ashe, Vincent Colot and Ben Oldroyd. Their review co-authored by Doris Bachtrog and James Turner focuses on how epigenetics actively affect the evolution of sex chromosomes in animals and plants. The review details how epigenetics can determine the sex of individuals in a few species that carry sex chromosomes. It also considers the potential role of epigenetics in sex lability. It then looks at how repeat accumulation causes heterochromatinization of the Y and leads to epigenetic conflict and Y toxicity. In some mammals, the sex chromosomes are epigenetically silenced during meiosis. The review details the evolutionary origin of this phenomenon and its potential underlying causes. Finally, it considers the epigenetic evolution of dosage compensation.

<https://doi.org/10.1098/rstb.2020.0124> 