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Origin and regulation of rye B chromosomes

Supernumerary B chromosomes (Bs) are dispensable components of the genome exhibiting non-Mendelian inheritance and have been widely reported on over several thousand eukaryotes, but still remain an evolutionary mystery ever since their first discovery over a century ago. Recent advances in genome analysis significantly improved our knowledge on the origin and composition of Bs. In contrast to the prevalent view that Bs do not harbour genes recent analysis revealed that Bs of sequenced species are rich in gene-derived sequences. I will summarize the latest findings on supernumerary chromosomes with a special focus on the origin (1) DNA composition (2), gene erosion process (3) and the non-Mendelian accumulation mechanism (4) of B chromosomes.