



Molecular Biotechnology Programme
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Title (English) An evolutionary simulation of linkage between duplicated genes under the theory of subfunctionalization		
Title (Swedish)		
Abstract Duplicated genes are of central interest to evolutionary genetic research and are believed to be one of the driving forces behind genetic diversification. Yet, the maintenance of duplicated genes in a genome has not been fully explained. Obviously selectional pressure should erase the copy of a gene if it did not have a function of its own. The theory of subfunctionalization explains this by differential promotor mutations that make the two loci dependent on each other and hence obliged to remain. This explanation implies no fitness reduction, even though it uses only deleterious mutation. To understand more about subfunctionalization and maybe to be able to identify it in physical experiments, a model was compiled that simulates how linkage disequilibrium is affected by this theory. When the alleles in two loci are dependent on each other and go together this should leave an imprint in linkage, a disequilibrium. The model starts from a situation with two identical, perfectly duplicated genes and can be used for various experiments under different conditions in an evolutionary context.		
Keywords Duplicated genes, subfunctionalization, linkage disequilibrium, evolution		
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