

Noncoding DNAs and Origin of Sex

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ABSTRACT The data that probably sex and sexual reproduction of eukaryotic organisms are the result of the long evolution of noncoding DNAs (ncDNAs), which led to the origin of mitotic chromosome, mitosis, meiosis, sex determination and differentiation mechanisms, is presented. It is supposed that sex and sexual reproduction were a direct consequence of the origin of unicellular eukaryote, but not a result of emergence of some specific structural genes determining the sex development. Genes pertaining to sex appeared later, but again not for determination and differentiation of sex, but for development of the secondary sexual characters with the help of hormones. The possibilities of experimental check of certain stages of the sex origin are discussed.