Techniques of amniocytes cultures and karyotyping in dog female

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Abstract

The purpose of the study is to sample the amniotic liquid, to cultivate the amniocytes and to realize the karyotype in dog females using new and original techniques of staining, reading and realizing of the karyogram. To fulfil the proposed goal we used the classical visualization techniques of the chromosomes in amniocytes. The amniocytes were introduced into Ham F10 or Amniochrome media for growth. The chromosomes were processed using classical techniques. We analyzed both metaphases in Giemsa staining and also the chromosomes in G banding. In the study, there were used modern methods of chromosomes karyotyping, consisting of a light microscope and a camera which enables to capture the metaphase and to process the chromosomes. The microscope was a motorized Zeiss Axioscop 2 microscope having a capture camera connected with a computer with specialized software for the chromosomes karyotyping, called MetaSystem Ikaros. The software is normally used to karyotype the human chromosomes, but it was adapted by us to karyotype the chromosomes in dogs. The size, shape and number of the chromosomes are different and characteristic to each species, so this feature is very important for the studying of the chromosomes in order to find out the genetic status of the individual. Compared to the classical karyotyping methods, utilisation of this software is very facile and, for this reason, we recommend it to be used to realize the karyotype in animals with increased biological value. The amniocytes karyotyping is a precocious diagnosis techniques which is very successful in human medicine and we consider that this technique can also be applied in veterinary medicine, with an increased importance especially for the individuals of major biological importance.

Key words: amniocytes, chromosomes, cytogenetics, karyotype, female dogs.

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