

Use of Umbilical Cord Serum in Chromosomal Studies

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ABSTRACT The precise role of serum in the culture medium is still not fully understood. But, it is evident that without it or an appropriate substitute cells do not thrive in culture. It is clear that certain types of sera perform better than others and that certain lot is more conducive to growth than others. In chromosomal studies, apart from animal sera, human sera were used for a long time. The commercial sera available are costly (FBS, FCS, NBCS). Animal sera (goat, sheep) may not give consistent results. Human blood is preferred for life saving demands. Of the various groups from the human sera, AB+ve gives a good mitotic index. The aim was to find out an alternate, of human origin, cost effective, easily available serum that could be used in cytogenetic laboratories which is better / equivalent to human AB +ve serum. The umbilical cord blood is discarded in almost all the maternity homes. There is a lot of potential to explore the possibilities to use umbilical cord serum in genetic laboratories with the permission from unregistered expected mothers and the authorities. A good quality chromosome preparation is necessary to detect the chromosomal rearrangements for diagnosis purpose. In the present study, adequate number of metaphases and well spread / well -banded chromosomes were obtained with umbilical cord serum. Any literature pertaining to the use of umbilical cord serum for chromosomal studies was not available. Probably, this study may be the first study to find out the use of umbilical cord serum for chromosomal studies as well as to compare with other sera.