Abstract

Karyotyping has an important role in identifying genetic disorders due to structural changes in chromosomes. Multiplex fluorescence in-situ hybridization (M-FISH) technique provides more precise karyotyping. The new classification method, proposed in this paper, automates karyotyping, based on Fuzzy c-means (FCM) algorithm combined with a labeling chart. Classification results show that the proposed method improves accuracy and running time. It is also observed that the accuracy of classification can further be improved, using a new Reclassification algorithm which reduces the chance of wrongly classified chromosome pixels.

References

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**Index Terms**

- Computer Science
- Image Processing

**Keywords**

- Karyotyping
- Multiplex fluorescence in-situ hybridization (M-FISH)
- Fuzzy c-means
- Labeling
- chart
- Reclassification