VideoTesT-CGH

CGH Analysis

Comparative genomic hybridization (CGH) is a molecular cytogenetic method for the detection of chromosomal imbalances. CGH allows a comprehensive analysis of multiple DNA gains and losses in entire genome within a single experiment.

VideoTesT-CGH system designed for automatic CGH analysis includes fluorescence microscope with DAPI, FITC and TRITC filters, black & white digital image acquisition system, and software.

What is CGH method:

The method is based on comparison of the tested and control DNA samples which are mixed 1:1, labeled with different fluorochromes and simultaneously hybridized in situ to normal metaphase spreads.

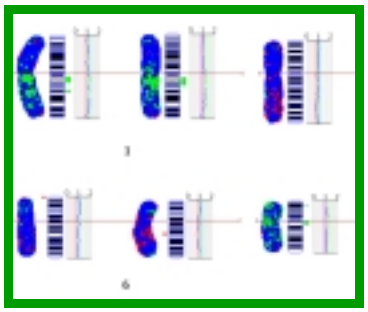
The metaphase spreads are studied under fluorescence microscope with DAPI, FITC, and TRITC filters. The series of images of the same field of view are captured. The signal intensities of the different fluorochromes are quantitated and the intensity ratio is measured. By comparing the fluorescence intensity of test and control DNA, changes in signal intensities caused by imbalances of the test DNA can be identified.

The CGH method is very significant for diagnostic applications. It is used in clinical cytogenetics for identification of the deletions and amplifications in the tumor cells and cells of the patients having different chromosome imbalances.

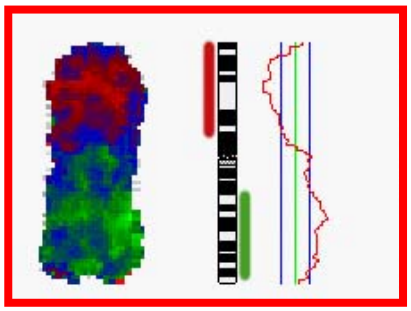
VideoTesT-CGH main functions:

- Capture chromosome spread images with hybridized DNAs (DAPI, FITC, and TRITC filters),
- Calculate the fluorescence coefficient which reflects the fluorescence signal intensity ratio (test DNA to control DNA) and create the false color image by the calculated ratio,
- Automatically create karyogram and display standard chromosome ideograms,
- Visualize the areas with DNA deletions and amplifications on the chromosomes,
- Build fluorescence signal ratio profiles for each chromosome,
- Average data for one or several metaphase spreads,
- Print out the CGH analysis results, the print report template can be created by the user,
- Save source and result images and data in the built-in image database.

CGH image



Karyogram (fragment)



Deletion and amplification areas

VideoTesT

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