



VideoTest-CGH

CGH Analysis

Comparative genomic hybridization (CGH) is a molecular cytogenetic method for detection of chromosomal imbalances. CGH allows to perform 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 VideoTest-CGH software.



What is CGH method:

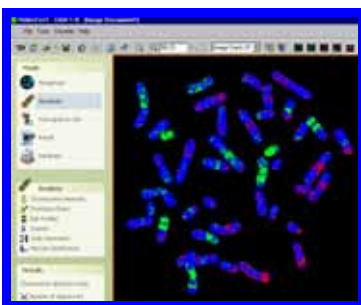
The method is based on comparison of tested and standard DNA samples which are mixed 1:1, labeled with different fluorochromes and simultaneously hybridized in situ to normal metaphase spreads.

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

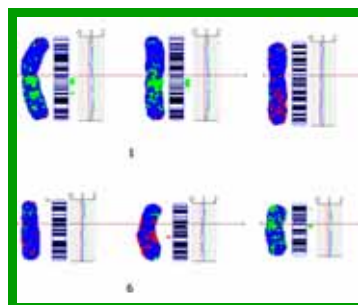
The CGH method is very important for diagnostic applications. It is used in clinical cytogenetics for identification of the deletions and amplifications in tumor cells and cells of patients having different chromosome imbalances.

VideoTest-CGH main functions:

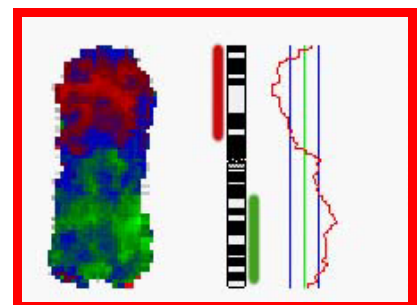
- Capturing of chromosome spread images with hybridized DNAs (DAPI, FITC, and TRITC filters),
- Calculating of the fluorescence coefficient which reflects the fluorescence signal intensity ratio (test DNA to control DNA) and creating of the false color image based on the calculated ratio
- Automatic creating of karyograms and displaying standard chromosome ideograms
- Visualizing the areas with DNA deletions and amplifications on chromosomes
- Building of the fluorescence signal ratio profiles for each chromosome
- Averaging of the data for one or several metaphase spreads
- Printing out the CGH analysis results, creating of the report templates
- Saving the source and resultant images and data in the built-in image database.



CGH image



Karyogram (fragment)



Deletion and amplification areas