

Bio-GENE

> The advanced answer for 1D-lane data-basing

- **Matrix / dendrogram**

This module calculates a matrix or dendrogram. The matrix is a triangular comparison with data in rows and columns, containing comparison data for all the extracted lanes from the database. The dendrogram groups and classifies the extracted lanes according to their similarity (homology).

- **Rectangular matrix**

This module allows the calculation of a rectangular matrix (comparison of one group of lanes with a different group of lanes).

- **Spot characterization**

A full set of values is calculated to characterize the spots. These include the MW, the pI, the gravity, the volume, the area, the perimeter, the compacity and the eccentricity. The spots can be sorted out and eliminated according to several criteria. Each spot is numbered and can be directly connected to its analytical data.

- **Multiprobe analysis**

Multiprobe analysis allows translation of results (given in base pairs, Da, or RF values) into files for presence/absence of bands with reference to a master lane. This allows to compare the results obtained with several reference markers. A matrix and a dendrogram can then be calculated by addition of these presence/absence files.

- **Lane identification**

This function allows the comparison of newly analysed lanes with previously stored samples. Users can also calculate the percentage of similarity of the selected lane from the analysed image with selected lanes from the database.

- **Molecular weights calculation**

This function allows the comparison of newly analysed lanes with previously stored samples. Users can also calculate the percentage of similarity of the selected lane from the analysed image with selected lanes from the database.

- **Database management**

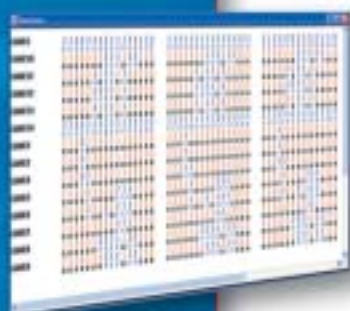
The flexible database has a very intuitive interface and can store an unlimited number of samples. The database stores each lane with its band's MW, RF or fragment sizes data.

- **Image enhancement**

The image enhancement module prepares your image for analysis or publication. The large choice of filters or manipulations optimises your image according to your own requirements.

- **Print-Designer**

Print-Designer is the powerful desktop publishing tool of Bio-1D. All your analytical data can be exported in a graphical format for print-out or archiving. The published report can be saved as a template and re-used as for further publishing. Thanks to its highly intuitive interface, Print Designer is very user-friendly and do not require any specific training to get a professional report.



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Specifications

Matrix / Dendrogram

- Define a confidence interval for the band matching
- Gather the clusters to be displayed
- Display the list of patterns
- Select one dendrogram calculation method from the following: UPGMA, single linkage, complete linkage, average linkage, centroid, median or ward.
- Define a similarity coefficient (Nei and Li or Jaccard)
- Select the reference for data calculation (homology or distance)
- Display the results either in dendrogram or matrix format
- Use a similarity threshold

Rectangular matrix

- Create a group of lanes
- Define a confidence interval for band matching
- Define a similarity coefficient (Nei and Li or Jaccard)
- Select the reference for data calculation (homology or distance)
- Display the results in a matrix format

Lane identification

- Select the reference lane
- Select the lanes to be compared
- Define a confidence interval for the band matching
- Define a similarity coefficient (Nei and Li or Jaccard)

Multiprobe analysis

- Extract lanes from a specific database
- Select lanes to compare
- Select a reference lane
- Create a binary file
- Set a confidence interval for the matching
- Export your data to an Excell™ compatible file
- Display the matching

Database management

- Organise the database with up to 10 directory levels and 999 levels of sub-directories
- Store unlimited number of samples
- Store each lane with its band M.W., R.F. or fragment size values
- Identify each sample with a specific name and a reference for the initial image
- Protect your data with a password for each user
- Select the lanes to include in the database
- Create or edit a master lane

Molecular weight calculation (electrophoretic distance)

- Detect automatically bands on a gel
- Control the detection parameters or manually adjust the detection
- Correct the band and front distortion (smiling effect)
- Correct the band position in the case of a gel with several similar marker lanes
- Visualize the lane's profile
- Load or edit molecular weight marker lanes
- Correct the marker's value assignment using the marker migration curve
- Calculate the molecular weight, the pH or the RF values
- Sort the results to display identical values using a percentage of tolerance
- Calculate and display dendrogram using Nei and Li (Dice) or Jaccard similarity coefficients
- Select the dendrogram calculation method from 7 approaches
- Display matching matrix using a confidence interval
- Subtract the background
- Calculate band volume, height, area
- Recalculate the volume using a master or a calibration curve
- Export your results to an Excell™ compatible file

Image enhancement and management

- Cut, copy and paste inside the original image or the new one
- Modify the image format to TIFF, BMP, GIF, MAC, PICT, WPG, PCX, TGA, or JPEG
- Print on the default desktop printer
- Zoom in or out with pixels recalculation
- Add comments or symbols
- Rotate the image using a manually defined angle
- Reverse the image according to an horizontal or vertical axis of symmetry (as seen in a mirror)
- Invert the image to obtain a negative or a positive display
- Enhance the image display by selecting the gray values to be displayed
- Replace gray levels by pseudo-colours

Print designer

- Create a customisable publishing template
- Insert text or symbols
- Annotate your image or your results
- Insert the analysed image, the result matrix or the result graphs
- Draw lines and geometric shapes (rectangles, ellipses, ...)
- Cut Copy Paste in a very user-friendly interface

Bio-1D++

> The complete package for 1D gel

Bio-1D++ = Bio-1D + Bio-Gene

Bio-1D++ combines all the features of Bio-1D and Bio-Gene. This integrated software package offers the very best of 1-D gel analysis. The quantitative results are based on state of the art algorithms easily controlled through and intuitive interface. For complete specifications, please refer to Bio-1D and Bio-Gene pages.

Bio-1D++ can be used for any 1-D fluorescent or chemiluminescent sample.