

Easy operation and yet performs all processes from array making to data analysis!

● 3-D Bio-Strand® Microarray

Handy Bio-Strand® is a personal use microarray kit using Bio-Strand® microarray technology. A thread (Bio-Strand®) with immobilized probe DNAs is wound onto a core pin and inserted into a disposable tip (Bio-Strand® Tip). Target DNAs are hybridized in this tip.

● Handy Bio-Strand® Software, Hy-Soft, analyzing up to 384 spots simultaneously

The fluorescence intensity from the hybridized target is measured by the Handy Bio-Strand® Scanner. 384 spots*¹ can be analyzed by one Bio-Strand® Tip.

*¹ Target DNA spots are less than 384 due to spots used for markers and positive controls.

● Cost and Space Saving

Compared to conventional fully automated systems, Handy Bio-Strand® has greatly reduced introduction costs, and requires less space.

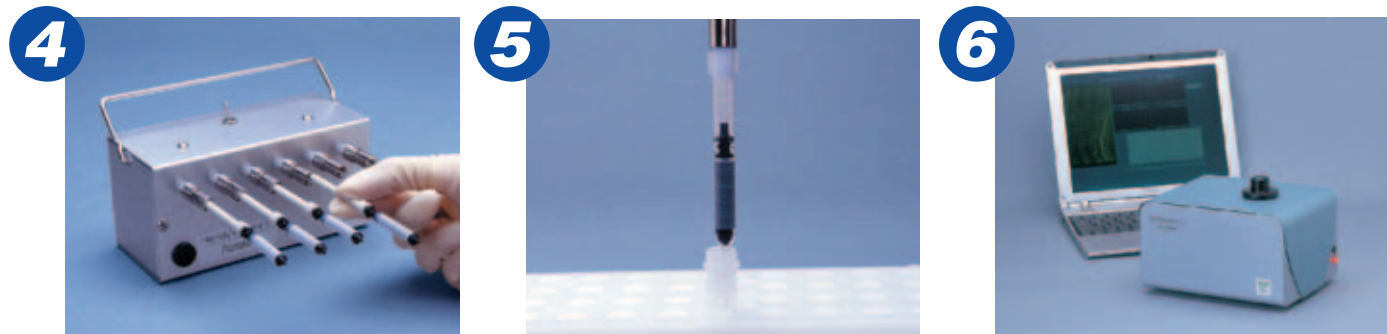
Make Microarrays and analyze data quickly with simple procedures!



1 Dispense samples into a 384 well microtiter plate. Kenzan can pick up 96 samples at a time.

2 Set the Kenzan and the Cassette on the Stamper and push down the Kenzan holder to spot samples onto Bio-Strand®. Reload the Kenzan after reversing its direction to spot another 96 samples. Place the Cassette upside down, and repeat on the reverse side of the Cassette allowing 384*¹ samples to be spotted on the entire Bio-Strand® wound over the Cassette.

3 Load the Cassette onto the Spinner and turn the knob to wind the spotted Bio-Strand® onto the Core-pin. Grooves allow the Bio-Strand® to wind smoothly, precisely and evenly spaced onto the Core-pin.



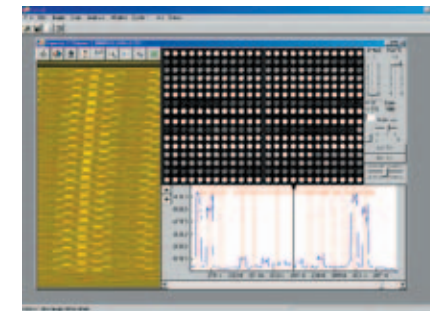
4 Attach the Core-pins to the Rotator and place it under the UV lamp for crosslinking. Rotation of the Core-pins exposes the target material uniformly to the UV irradiation.

5 Insert the UV-irradiated the Core-pin into the cylindrical Tip to make a Bio-Strand® Tip. Because The Tip is designed to be loaded into a commercially available 1.0 ml micropipettor, so you can perform operations such as hybridization and/or cleaning can be accomplished easily by simply aspirating or dispensing the solutions in/from the Bio-Strand® Tip.

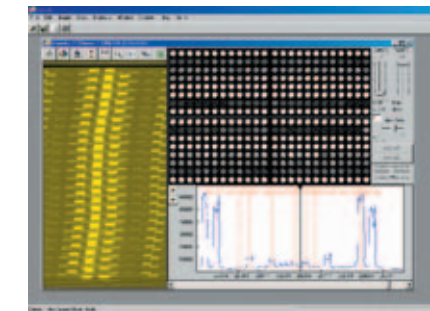
6 Measure the fluorescence intensity of the Bio-Strand® Tip with the Scanner, then, analyze data using Hy-Soft to identify the target material.

Simple and Efficient Hy-Soft!

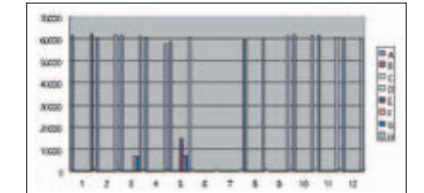
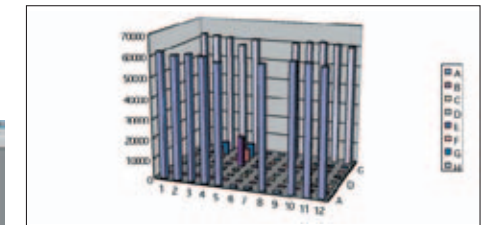
- Special Features**
- Automatic scanning
 - Instant results output
 - Automatic typing of SNPs



Press the scan button to calculate the signal intensities of each position and display a 384 gray scale spot spread sheet.



Evaluate the details of the results and correct them if errors are observed. Corrected results are reflected real time in Hy-Soft.



Results of the analysis are displayed in several figures; averages and standard deviations are calculated for replicated spots. Hy-Soft also includes reporting functions.

Typical Performance Data

● Spotting Reproducibility

Chart 1) 384 Spots of 1 μ M oligonucleotide (25mer) were prepared on a Bio-Strand® in a Bio-Strand® Cassette and immobilized on the Strand by UV-irradiation. This was then hybridized with 10 nM of complementary Cy5*³-labeled oligonucleotide and the fluorescence intensity measured with NIAGALA Bio-Station SDx.

	1	2	3
Mean Fluorescence Intensity* ²	4755.9	4252.2	4839.3
SD	590.6	616.5	645.0
CV (%)	12.4	14.5	13.3

*² Average fluorescence intensity for 384 spots

*³ Cy5 is a registered trademark of Amersham Biosciences.

● Correlation between Spot Concentration and Fluorescence Intensity

Chart 2) Spots of 25mer oligonucleotide on a Bio-Strand® in a Bio-Strand® Cassette at various concentrations (0.125, 0.25, 0.5, 1 and 2 μ M) were prepared and immobilized to the Strand by UV-irradiation. This was then hybridized with 10 nM of complementary Cy5-labeled oligonucleotide and the fluorescence intensity measured with a Handy Bio-Strand® Scanner.

Probe DNA Concentration (μ M)	Mean Fluorescent Intensity* ⁴	SD	CV (%)
0.125	928.7	218.3	23.5
0.25	1632.9	326.4	20.0
0.5	2385.5	515.2	21.6
1.0	5484.1	1185.7	21.6
2.0	9359.6	1457.6	15.6

*⁴ Measured average fluorescence intensity of 48 different concentration of oligonucleotide which were spotted on the same Bio-Strand®, and hybridized with complementary Cy5 labeled oligonucleotide.

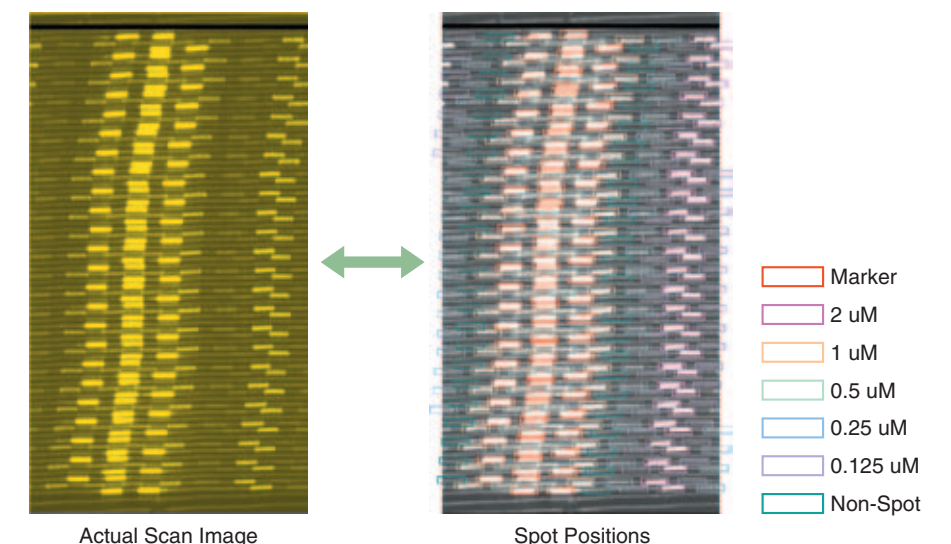


Fig.) Scan images from the correlation study between spot concentration and fluorescence intensity.