

718286-AA July 2001

CEQ[™]2000XL DNA Analysis System

Beckman Coulter AFLP Dominant Scoring Software

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Beckman Coulter AFLP Dominant Scoring Software

The AFLP Dominant Scoring module has been developed as "freeware" software to allow you to rapidly score your AFLP fingerprints with output as a text format which is compatible with most statistical and pattern matching software. We recommend the use of Microsoft Excel to review the output of this software and to further manipulate and parse the data. As this software was developed as freeware its support will be limited to e-mail with a dedicated address at ceqhelp@beckmancoulter.com. All questions on the installation and operation of this product should be addressed to the CEQHELP e-mail address.

This software module generates a cluster analysis of your data to bin either the presence or absence of a fragment of a given size per sample. This is represented as either a 1 or 0 at a given size. An example of the output is shown below:

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2		55	- -	3	0	0		0		0	0	0	0	0	0	0
3		57	N 3	3	0	0		0		0	0	0	0	0	0	0
4		62	K 3	3	0	0		0		0	0	0	0	0	0	0
5		76	3	3	0	1		0		0	1	0	0	1	0	0
6		81	3	3	0	0		0		0	0	0	0	0	0	0
7		82	3	3	0	0		0		0	0	0	0	0	0	0
8		92		3	0	1		0		0	1	0	0	1	0	0
9		93		3	0	1		0		0	1	0	0	0	0	0
10		98		3	0	0		0		0	0	0	0	0	0	0
11	1	22	3	3	0	0		0		0	0	0	0	0	0	0
12	1	23		3	0	1		0		0	1	0	0	1	0	0
13	1	53		3	0	1		0		0	1	0	0	1	0	0
14	1	57		3	0	0		0		0	0	0	0	0	0	0
15	1	60		3	0	1		0		0	1	0	0	1	0	0
16	1	75		3	0	1		0		0	1	0	0	1	0	0
17	1	96		3	0	0		0		0	0	0	0	0	0	0
18	1	97		3	0	0		0		0	0	0	0	0	0	0
19	1	99		3	0	0		0		0	0	0	0	0	0	0
20	2	01	3	3	0	1		0		0	1	0	0	1	0	0
21	2	29		3	0	1		0		0	1	0	0	1	0	0
22	2	43		3	0	0		0		0	0	0	0	0	0	0
23	2	44	2	3	0	1		0		0	1	0	0	1	0	0
24	2	51		3	0	0		0		0	0	0	0	0	0	0
25	2	63	3	3	0	1		0		0	1	0	0	1	0	0
26	2	69	3	3	0	0		0		0	0	0	0	0	0	0
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An example of Result

Installation – AFLP Dominant Scoring Software

In order to install CEQTM AFLP Dominant Scoring Software onto your CEQ 2000XL system, the *CEQ.ini* file has to be edited as follows:

1. Open the Ceq.ini file in the Beckman Instruments\CEQ 2000\Bin directory for editing



2. Add a line with the text "BatchReportEnabled=1" immediately after the line that says "[FragmentAnalysisApp]"; Save and close the *Ceq.ini* file.



AFLP Dominant Scoring Software is designed to operate on Fragment Analysis results that have been stored in Batch Analysis Report files created as a result of running *Batch Analysis*.

From the Fragment Analysis Module of the CEQ 2000XL software, select the Batch Analysis option from the Analysis menu. Choose the data to be analyzed, select the Analysis Parameters, and perform Batch Analysis.



A Batch Analysis Report (with a .csv extension) will be generated and stored in the Reports directory under Beckman Instruments\CEQ 2000. Create Batch Analysis Reports for the data to be analyzed by the AFLP Dominant Scoring Software.

Using NT Explorer, Navigate to the Beckman Instruments\CEQ 2000\Bin directory and double-click on the **AFLP Dominant Scoring.exe** icon:

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📃 🗄 🛅 Xms 🦷 🤇	AFLP Dominant Scoring.exe	68KB	Application	6/19/01 7:09 PM	
🖻 🚌 Beckman Coulter (D:)	🔊 AllelelD.dll	104KB	Application Extension	3/7/01 4:08 PM	
🗄 💼 32Karat	🔊 AParamEdit.dll	217KB	Application Extension	3/7/01 4:05 PM	
🖻 📋 Beckman Instruments	🔊 AParamExport.dll	129KB	Application Extension	3/7/01 4:03 PM	
🖻 🛄 CEQ 2000	Network AParamImport.dll	97KB	Application Extension	3/7/01 4:04 PM	
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⊡ Dbase	🔊 Basedb.dll	65KB	Application Extension	3/7/01 3:12 PM	
Export	🔊 Binner.dll	76KB	Application Extension	6/19/01 7:08 PM	
	🔊 bla2012d.dll	312KB	Application Extension	3/7/01 3:02 PM	
	🔊 CeDibAPI.dll	32KB	Application Extension	3/7/01 3:15 PM	
	🐻 Ceq.ini	9KB	Configuration Settings	6/26/01 6:40 PM	
	🔄 🖾 CE qAnalysis.exe	1,069KB	Application	3/7/01 3:27 PM	
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Use the File/Select menu option to choose the BatchAnalysisReport you wish to include:

Je ClusterAnalysis - AFLP Dominant Scoring	
Ready	

The *BatchAnalysisReport* is found in the Beckman Instruments\CEQ2000\Reports directory:



Open			? ×
Look in: 🔁	Reports	- 🗧 🔁	💣 🎟 •
BatchAnal	ysisReport_010622144W.csv		
BatchAnal	ysisReport_0106260921.csv		
BatchAnal	ysisReport_0106260953.csv		
BatchAnal	ysisReport_01062715NF.csv		
File name:			Open
Files of type:	Batch Analysis Reports (*.csv		Cancel

Set the Preferences (in the File menu) for the analysis:

The Maximum Bin Width from 0.4 to 10.0 nt. can be set in the Default Analysis Parameters- the default value is 1.0 nt. The Y threshold can be set between 0 and 10,000 to exclude bins below the set threshold.

Preferences ×
Default Analysis Parameters OK
Maximum Bin Width: 1.0 Int Cancel
Filtering
YThreshold: 0
Dyes: 🔲 1 🔽 2 💌 3 💌 4
Exclude fully representative bins
Exclude samples not in any bins
Export File Format
O Samples in Rows 🔲 Alleles as separate columns
Samples in Columns
- Include
Bin Labels Dye Labels
☑ Bin Min/Max ☑ Bin Means/Variance
🗹 Bin Sample Membership Count

The "fully representative bins" and/or "samples not in any bins" can also be excluded from the report by checking the appropriate boxes in the Preference. Select the appropriate dyes to be exported.

Click **OK** to accept the setting and perform the analysis.

Use the Analyze option to perform the clustering operation

💤 ClusterAnalysis - AFLP Dominant Scoring	_ 🗆 ×
File Analyze View Help	
Sample result DATS 103-D3.A06_01062214BN loaded, 1159 fragments.	
Sample result DATS 103-D2.A04_01062214BR loaded, 1190 fragments.	
Sample result DA15 102-04.H01_010622146W loaded, 1241 tragments.	
Sample result DATS 102-05-00-002214C4 loaded, 1200 rraginents.	
Sample result DATS 101-D4.G01 01062214C8 loaded, 1338 fragments.	
Sample result DATS 101-D3.G05_01062214CC loaded, 1359 fragments.	
Sample result DATS 101-D2.G03_01062214CG loaded, 1387 fragments.	
Sample result DATS 100-D4.F01_01062214CK loaded, 1441 fragments.	
Sample result DATS 100-D3.FU5_01062214C0 loaded, 1463 tragments.	
Janipie result DATS 100-02, r02,1102211425 loaded, 1495 tragments.	
Loaded 1 files (48 sample results) Total sample results loaded = 48	

When Analysis is completed the following information is displayed:

💑 ClusterAnalysis - AFLP Dominant Scoring	
File Analyze View Help	
File Analyze View Help Sample result DATS 102-D2.H03_01062214C4 loaded, 1294 fragments. Sample result DATS 101-D4.G01_01062214CC loaded, 1339 fragments. Sample result DATS 101-D3.G05_01062214CC loaded, 1387 fragments. Sample result DATS 100-D4.F01_01062214CC loaded, 1463 fragments. Sample result DATS 100-D4.F01_01062214CC loaded, 1463 fragments. Sample result DATS 100-D4.F01_01062214CC loaded, 1463 fragments. Sample result DATS 100-D4.F01_01062214CS loaded, 1495 fragments. Sample results 1045 100-D4.F01_01062214CS loaded, 1445 fragments. Loaded 1 files (48 sample results) Total sample results loaded = 48 Analysis of 48 sample results (289 fragments, 289 used) in dye 1 completed. Clustered into 13 bins Analysis of 15 sample results (289 fragments, 310 used) in dye 2 completed. Clustered into 32 bins Analysis of 15 sample results (682 fragments, 680 used) in dye 4 completed. Clustered into 32 bins Analysis of 15 sample results (682 fragments, 680 used) in dye 4 completed. Clustered into 91 bins	-
Ready	

Export the results (File/Export) as a .txt file, which can be pasted in MS Excel



Microsoft Excel - run3.txt													
	<u>File</u> dit	<u>∨</u> iew <u>I</u> ns	ert	F <u>o</u> rmat <u>T</u> ool:	s <u>D</u> ata <u>W</u> in	dow <u>H</u> elp							_ B ×
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2		72	2	12	71.85	72.05	71.922	6839.083	0.002385	0	0	1	0
3		79	2	1	78.85	78.85	78.85	1440	0	0	0	0	0
4		83 📐	2	9	82.89	83.09	82.936	3110.222	0.003158	0	0	1	0
5		86 ~~~	2	9	85.51	85.71	85.582	7277.556	0.00364	0	0	1	0
6		91	2	1	91.03	91.03	91.03	8807	0	0	0	0	0
7		95	2	6	94.96	95.16	95.067	15922.17	0.006322	0	0	1	0
8		96	2	14	95.9	96.84	96.381	24378.48	0.10859	0	0	1	0
9	1	02	2	1	102.22	102.22	102.22	4632	0	0	0	0	0
10	1	05	2	1	104.9	104.9	104.9	3777	0	0	0	0	0
11	1	06	2	8	105.83	105.96	105.895	5712.5	0.00155	0	0	0	0
12	1	14	2	14	113.78	114.03	113.911	6695.714	0.005241	0	0	1	0
13	1	26	2	3	126.21	126.32	126.27	2900	0.002067	0	0	0	0
14	1	61	2	8	161.24	161.37	161.306	6805.75	0.002273	0	0	1	0
15	1	92	2	1	192.15	192.15	192.15	2189	0	0	0	0	0
16	2	31	2	1	230.5	230.5	230.5	19630	0	0	0	0	0
17	2	33	2	6	232.53	232.6	232.57	3699.167	0.0008	0	0	1	0
18	2	34	2	14	233.53	233.67	233.626	12856.43	0.00131	0	0	1	0
19	2	46	2	2	245.83	245.87	245.85	7678	0.0004	0	0	0	0
20	4	41	2	1	440.84	440.84	440.84	16689	0	0	0	0	0
21	4	56	2	2	456.31	456.33	456.32	2700	0.0001	0	0	1	0
22	6	00	2	1	599.69	599.69	599.69	1946	0	0	0	0	0
23		55	3	1	55.25	55.25	55.25	57152	0	0	0	0	0
24		57	3	1	57.21	57.21	57.21	6415	0	0	0	0	0
25		62	3	1	62.2	62.2	62.2	6272	0	0	0	0	0
26		76	3	13	75.67	75.84	75.715	23970.62	0.003025	0	1	0	0
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Open MS Excel and select appropriate file - the *Result Output* is displayed:

Notes:

- If the results are not in the desired format, the *Preferences* selection can be modified and results re-exported.
- The Reset option under the File menu can be used to clear the results to allow for a new analysis.
- If Bins are created that contain only very small peaks, they can be filtered out using the Bin Y-Threshold setting in the Preference- It will be necessary to redo the analysis.