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TeSeE™ Analysis Module

Instruction Manual

Catalog #170-9530

For technical service, call your local Bio-Rad office, or in the US, call 1-800-4BIORAD (1-800-424-6723)



PN. 400-0201 Rev A

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Purpose

This set of files provides official Bio-Rad TSE Protocols and Templates to be installed and used together with Microplate Manager™ PC software (version 5.2 and above), so TSE testing can be performed and reported easily and securely.

Explanation of the Files

Two sets of files are provided here:

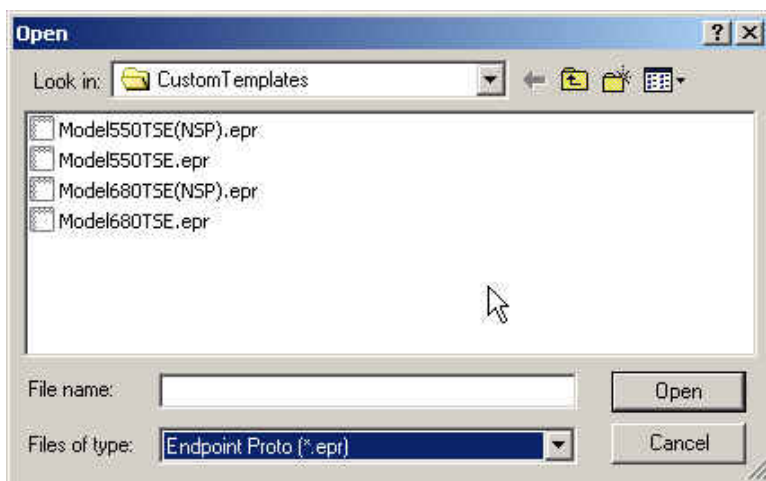
- Four MPM Protocols files:
 1. Model550TSE.epr: should be used to read plates in Microplate Manager PC software when using Model 550 reader, and for manually purified samples (non-NSP)
 2. Model550TSE(NSP).epr: should be used to read plates in Microplate Manager PC software when using Model 550 reader together with the NSP system
 3. Model680TSE.epr: should be used to read plates in Microplate Manager PC software when using Model 680 reader, and for manually purified samples (non-NSP)
 4. Model680TSE(NSP).epr: should be used to read plates in Microplate Manager PC software when using Model 680 reader together with the NSP system
- Two Excel Template files:
 5. TSE.xlt: this is a Microsoft Excel template file that is constructed to report TSE testing (for manually purified samples [non-NSP])
 6. TSE (NSP).xlt: this is a Microsoft Excel template file that is constructed to report TSE testing done with the NSP system

Reading of a TSE Detection (ELISA) Microplate

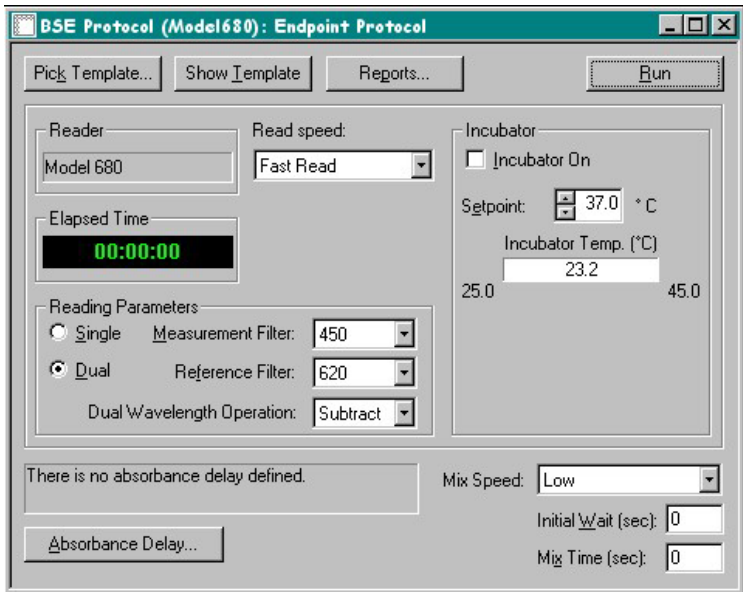
Place your detection plate when it is ready into your Bio-Rad microplate reader (Model 550 or Model 680 reader):

Opening the TSE Protocol

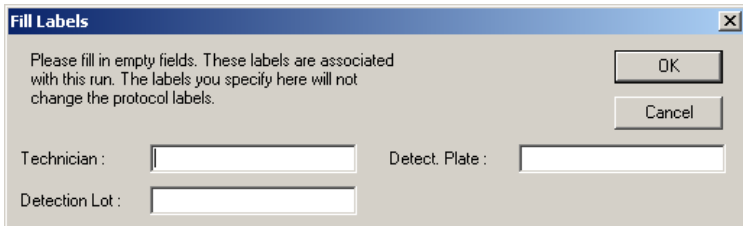
Open Microplate Manager application, select *File > Open* (or click on the Open button). Change *Files of Type* to *Endpoint Protocol (*.epr)* at the bottom of the window. Browse to the Custom Template folder under Microplate Manager directory



Select the correct protocol file according to the reader type (Model 550 or Model 680) and whether this test was processed on the NSP system. Open this selected file.



Click on the Run button, fill in Technician name, Detection Plate ID, and Detection Lot information, then click on the OK button to read the plate.



Once the plate is read, raw data will be shown in Microplate Manager software, and the Excel program will be open. The reading result will be automatically filled into the Excel file, with the appropriate customized template.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	BIO-RAD TSE Screening Report (TeSeE)													
2	TSE (ET-660-03)													
3	Read Date: 12/26/2003 9:23:34 PM													
4	Data File: C:\Program Files\Bio-Rad\Microplate Manager\Examples\RA\w\DATA122603.mpm						Reader: Model 550							
5	Meas. Wavelength: 450 nm													
6	NSP DB File: C:\Program Files\Bio-Rad\Microplate Manager\NSP for BSE\BSEData.mdb													
7	Ref. Wavelength: 620 nm													
8	Sample Plate: P02000004907				Purification Plate: P020000005182				Detection Plate:					
9					Purification Lot: 8B17IU				Detection Lot:					
10					Technician: NICO				Technician:					
11	Control Validation													
12	Negative Controls													
13	Criteria #1: Valid(NC) >= 3						Criteria #2: Valid(NC) >= 2							
14	NC1 < 0.15						NC1 < 1.4 * NC							
15							NC1 < 0.0189							
16	Results: Valid(NC) = 4						Results: Valid(NC) = 4							
17	NC1: 0.013 < 0.150			Valid			NC1: 0.013 < 0.0189			Valid				
18	NC2: 0.015 < 0.150			Valid			NC2: 0.015 < 0.0189			Valid				
19	NC3: 0.012 < 0.150			Valid			NC3: 0.012 < 0.0189			Valid				
20	NC4: 0.014 < 0.150			Valid			NC4: 0.014 < 0.0189			Valid				
22	Positive Controls													
23	Criteria: Mean(PC) >= 1.000													
24														
25	Results: Mean(PC) = 1.3710													
26	PC1: 1.338			Valid										
27	PC2: 2.004			Valid										
28	Cutoff Criteria													
29	POS POS Cutoff = (NC * 0.21) * 1						POS Cutoff >= 0.224							
30	NEG NEG Cutoff = (NC * 0.21) * 0.9						NEG Cutoff < 0.201							
31	Cutoff [FOS Cutoff, NEG Cutoff]						Mean(NC) = 0.0135							
33		1	2	3	4	5	6	7	8	9	10	11	12	
34		0.013	0.015	0.017	0.016	0.015	0.014	0.015	0.018	0.015	0.017	0.014	0.015	
35	A	NC1	!Error!	!Error!	!Error!	!Error!	NEG	NEG	NEG	NEG	NEG	NEG	NEG	
36		C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	
37		0.015	0.018	0.017	0.017	0.020	0.019	0.020	0.019	0.015	0.020	0.019	0.022	
38	B	NC2	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	
39		C020000024	C020000022	C020000022	C020000022	C020000022	C020000022	C020000022	C020000022	C020000022	C020000022	C020000022	C020000022	
40		0.012	0.016	0.017	0.019	0.016	0.018	0.019	0.019	0.017	0.019	0.017	0.019	
41	C	NC3	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	
42		C020000022	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	C020000028	
43		0.014	0.018	0.016	0.018	0.022	0.013	0.020	0.018	0.019	2.203	0.019	0.021	
44	D	NC4	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	
45														

Inputting sample IDs

Use Sample Information worksheet to provide Sample ID information for the report. Both NSP and Manual Sample Information entering are described below:

- From NSP database:

In Sample Information worksheet, make sure database selection is correct, click on “Update list” button to refresh list content, select correct Purification Plate ID from the list, then click on Retrieve Sample IDs button. Sample IDs will be automatically filled in the Sample Information Sheet as well as on the Report Sheet.¹

¹ Up to 6 NSP databases can be memorized in the database pull-down list. Purification plate ID has to be 13 characters in length. Up to 250 purification plate ID can be viewed in the purification plat ID pull-down list. The last plate performed by the NSP system is displayed on top of the list.

Procedure for Retrieving Sample IDs from NSP Database

Step 1: Enter database file. If already entered proceed to step 2.

Step 2: Select or enter purification plate ID.

Step 3: Click "Retrieve Sample IDs" to retrieve sample IDs for the selected purification plate.

Options

Option 1: Click "Clear Sample IDs" to clear previously retrieved sample IDs.

Option 2: Click "Export Results" to save results to a file in a portable text file format.

- Manual Input:
In Sample Information worksheet, type in sample ID for each sample in Sample ID column, or Copy from a different worksheet and paste into the Sample ID column in this worksheet. The Sample ID information will be automatically shown on Report sheet.

Reporting Test Results

Once sample ID information is inputted in the Sample Information worksheet, this information will be displayed on the Report worksheet.

- Any sample ID in the Sample Information worksheet associated with a well will be displayed in the Report worksheet under the result for each sample well location

- Any well in the Report worksheet with no associated sample ID in the Sample Information worksheet will not have any OD value, result, or ID information displayed (unless sample IDs are cleared for the entire plate)
- For sample with a processing error from the NSP system, an **!Error!** will be indicated in the corresponding well position, together with its OD value and sample ID
- If control validation (for positive or negative controls) failed for the plate, only the OD value and sample ID will be shown for each sample and no result will be shown on the report

Exporting Test Results

In Sample Information worksheet, an optional step is available if exporting of TSE screening results is desired, by clicking on the Export Results ... button in step Option 2.

TSE export data format

The results can be exported in two text formats, Text (tab delimited) or CSV (comma delimited). The text (tab delimited) format is fairly straightforward; each column is delimited with a <TAB> and each row delimited with a <CR><LF>. The CSV (comma delimited) format is similar to the tab-delimited format but each column is delimited with the regional settings <list separator>, a <COMMA> for USA and <SEMI COLON> for most of Europe, and each row is delimited with a <CR><LF>. In addition:

1. Any cell containing a <list separator> must be bracketed by <QUOTES>.
2. Any cell containing a <QUOTE> must be bracketed by <QUOTES> and the <QUOTE> must be replaced with <DOUBLE QUOTES>.

The export file format is fixed. The number of rows and columns don't change based on the presence or absence of data. Note that the decimal character used for the floating point number is based on the regional number settings. This is commonly a period for the US and a comma for European countries. The file layout is as follows:

<Major Version #>
 <Minor Version#>
 <Report Template>
 <Read Date>
 <PathFilename MPM Data File>
 <Reader Model>
 <Measurement Wavelength>
 <Reference Wavelength>
 <Path Filename NSP Database>
 <Sample Plate>
 <Purification Plate>
 <Purification Lot>
 <Purification Technician>
 <Detection Plate>
 <Detection Lot>
 <Detection Technician>
 <Detection Protocol>
 <k1>
 <k2>
 <k3>
 <k4>
 <Assay Valid>
 <POS Cutoff>
 <NEG Cutoff>
 <Well Label> <Well Type> <Well Reading OD> <Well Smp ID> <Well Result> <Well Valid>
 A1
 B1
 - - - - - -
 - - - - - -
 G12
 H12

The following table provides the description and format for each field.

Field	Field description / Format
<EXPORT FORMAT STR>	As the 1 st entry in the file, this string constant, "TSE_EXPORT_FILE", identifies the files as a TSE export file
<MAJOR VERSION #>	The export file format major version number. Example: 1
<MINOR VERSION #>	The export file format major version number. Example: 0
<REPORT TEMPLATE>	A string identifying the report template that generated the results Example: TSE (ET-860-01)
<READ DATE>	String containing the date and time (local time) the detection plate was read. Example: 3/23/2003 9:20:02 AM
<PATHFILENAME MPM DATA FILE>	Full path and filename to the Microplate Manager data file used as the data source. Left blank when TSE report is generated prior to saving Microplate Manager data file. Example: C:\MyData\DP30027.mpm
<READER MODEL>	Reader model used when the plate was read. Example: Model 680
<MEASUREMENT WAVELENGTH>	Measurement wavelength used when the plate was read. Example: 450 nm
<REFERENCE WAVELENGTH>	Reference wavelength used when the plate was read. Example: 620 nm
<PATHFILENAME NSP DBASE>	Full path and filename to the location of the NSP database file used to retrieve sample IDs, sample status, and plate information (sample plate ID, purification plate ID, purification lot, and purification technician). Left blank when this information has not been retrieved or for non-NSP users. Example: C:\DBDirectory\DP30027.mpm

Field	Field description / Format
<SAMPLE PLATE ID>	The ID of the sample plate used to generate the purification plate. This information is retrieved from the NSP database. Example: P020000010833
<PURIFICATION PLATE ID>	The ID of the purification plate used to generate the detection plate. The purification plate ID is specified by the user when producing these results. Example: P020000010833
<PURIFICATION LOT>	The lot of purification kit used to generate the purification plate. This information is retrieved from the NSP database. Example: 3K0002
<PURIFICATION TECHNICIAN>	The name of the technician who handled the purification process. This information is retrieved from the NSP database. Example: GIGI
<DETECTION PLATE>	The ID of the detection plate. The technician enters this information from Microplate Manager just prior to reading the plate. Example: DP02004567
<DETECTION LOT>	The lot of the detection kit used to generate the detection plate. The technician enters this information from Microplate Manager just prior to reading the plate. Example: 4J0099
<DETECTION TECHNICIAN>	The name of the technician who handled the detection plate process. The technician enters this information from Microplate Manager just prior to reading the plate. Example: NICO
<DETECTION PROTOCOL>	The name of the detection protocol used to produce the TSE screen results. Examples: TeSeE Platelia TeSeE CWD
<k1>	One of the floating-point constants used to calculate the positive cutoff. Positive cutoff equation: $POS\ cutoff = (NC+k1)*k2$ Example: 0.210

Field	Field description / Format
<k2>	The other floating-point constant used to calculate the positive cutoff. Positive cutoff equation: POS Cutoff = (NC+k1)*k2 Example: 1.0
<k3>	One of the floating-point constants used to calculate the negative cutoff. Negative cutoff equation: NEG Cutoff = (NC+k4)*k3 Example: 0.9
<k4>	The other floating-point constant used to calculate the negative cutoff. Negative cutoff equation: NEG Cutoff = (NC+k4)*k3 Example: 0.210
<ASSAY VALID>	Set to 1 when all validation criteria are met. Otherwise set to 0.
<POS CUTOFF>	The OD cutoff value used to tag positive samples. This is a floating-point value. Left blank when assay is not valid. Example: 0.245
<NEG CUTOFF>	The OD cutoff value used to tag negative samples. This is a floating-point value. Left blank when assay is not valid. Example: 0.221
<WELL LABEL>	String that identifies the well location. Examples: A1 H12
<WELL TYPE>	String that identifies the well type. 0 – negative control 1 – positive control 2 – sample Examples: 0 1 2
<WELL READING OD>	The well's OD reading. This field is left blank when a reading hasn't been taken, is set to *.* when the reading exceeds the reader's OD range, and otherwise is the floating-point OD value. Examples: *.* 0.124

Field	Field description / Format
<WELL SMP ID>	<p>The sample ID specified for the well. Left blank for controls and wells that don't have specified sample ID.</p> <p>Example: s030402-101</p>
<WELL RESULT>	<p>The calculated well result.</p> <p>-3 – For wells:</p> <ul style="list-style-type: none"> • Not read (well reading <blank> for this case) • Invalid assay (<Assay Valid> set to 0) • NSP sample error (<Well Valid> set to 0 and well reading not <blank>) <p>-2 – For positive control wells</p> <p>-1 – For negative controls wells</p> <p>0 – For wells identified as negative</p> <p>1 – For wells falling within the gray zone (indeterminate)</p> <p>2 – For wells identified as positive</p>
<WELL VALID>	<p>Well validation flag.</p> <p>For controls:</p> <p>0 – Control didn't pass validation criteria</p> <p>1 – Control passed validation criteria</p> <p>For samples:</p> <p>0 – Well not read or NSP sample error</p> <p>1 – All other samples</p>

The following table contains the contents of a TSE screening results exported in Text (Tab delimited) and CSV (Comma delimited) formats.

TEXT (TAB DELIMITED)	CSV (COMMA DELIMITED)
TSE_EXPORT_FILE 1 0 TSE (ET-860-01- BETA-07) 3/23/2001 9:20:02 AM C:\Bio-Rad Microplate Manager\dp020034.mpm Model 680 450 620 D:\MasterDbs\BSEData\mdb P020000004504 P020000004509 3K0002 Celine Dp020034 Q0410 Djt TeSeE 0.210 1.000	TSE_EXPORT_FILE 1 0 TSE (ET-860-01- BETA-07) 3/23/2001 9:20:02 AM C:\Bio-Rad Microplate Manager\dp020034.mpm Model 680 450 620 D:\MasterDbs\BSEData\mdb P020000004504 P020000004509 3K0002 Celine Dp020034 Q0410 Djt TeSeE 0.210 1.000

TEXT (TAB DELIMITED)						CSV (COMMA DELIMITED)
0.900						0.900
0.210						0.210
1						1
0.245						0.245
0.221						0.221
A1	0	0.030		-1	1	A1,0,0.030,,-1,1
B1	0	0.037		-1	1	B1,0,0.037,,-1,1
C1	0	0.038		-1	1	C1,0,0.038,,-1,1
D1	0	0.058		-1	0	D1,0,0.058,,-1,0
E1	1	2.279		-2	1	E1,1,2.279,,-2,1
F1	1	2.199		-2	1	F1,1,2.199,,-2,1
G1	2	0.077	123456	0	1	G1,2,0.077,123456,0,1
H1	2	0.043	123457	0	1	H1,2,0.043,123457,0,1
A2	2	0.041	123458	-1	0	A2,2,0.041,123458,-1,0
B2	2	0.107	123459	0	1	B2,2,0.107,123459,0,1
C2	2	0.118	123460	0	1	C2,2,0.118,123460,0,1
D2	2	0.092	123461	0	1	D2,2,0.092,123461,0,1
E2	2	0.054	123462	0	1	E2,2,0.054,123462,0,1
F2	2	0.083	123463	0	1	F2,2,0.083,123463,0,1
G2	2	0.090	123464	0	1	G2,2,0.090,123464,0,1
H2	2	0.122	123465	0	1	H2,2,0.122,123465,0,1
A3	2	0.112	123466	0	1	A3,2,0.112,123466,0,1
B3	2	0.122	123467	0	1	B3,2,0.122,123467,0,1
C3	2	0.104	123468	0	1	C3,2,0.104,123468,0,1

TEXT (TAB DELIMITED)						CSV (COMMA DELIMITED)
D3	2	0.087	123469	0	1	D3,2,0.087,123469,0,1
E3	2	0.125	123470	0	1	E3,2,0.125,123470,0,1
F3	2	0.036	123471	0	1	F3,2,0.036,123471,0,1
G3	2	0.121	123472	0	1	G3,2,0.121,123472,0,1
H3	2	0.087	123473	0	1	H3,2,0.087,123473,0,1
A4	2	0.070	123474	0	1	A4,2,0.070,123474,0,1
B4	2	0.077	123475	0	1	B4,2,0.077,123475,0,1
C4	2	0.086	123476	0	1	C4,2,0.086,123476,0,1
D4	2	0.100	123477	0	1	D4,2,0.100,123477,0,1
E4	2	0.058	123478	0	1	E4,2,0.058,123478,0,1
F4	2	0.046	123479	0	1	F4,2,0.046,123479,0,1
G4	2	0.048	123480	0	1	G4,2,0.048,123480,0,1
H4	2	0.123	123481	0	1	H4,2,0.123,123481,0,1
A5	2	0.070	123482	0	1	A5,2,0.070,123482,0,1
B5	2	0.081	123483	-1	0	B5,2,0.081,123483,-1,0
C5	2	0.090	123484	0	1	C5,2,0.090,123484,0,1
D5	2	0.075	123485	0	1	D5,2,0.075,123485,0,1
E5	2	0.090	123486	0	1	E5,2,0.090,123486,0,1
F5	2	0.073	123487	0	1	F5,2,0.073,123487,0,1
G5	2	0.068	123488	0	1	G5,2,0.068,123488,0,1
H5	2	0.057	123489	0	1	H5,2,0.057,123489,0,1
A6	2	0.023	123490	0	1	A6,2,0.023,123490,0,1
B6	2	0.025	123491	0	1	B6,2,0.025,123491,0,1
C6	2	0.039	123492	0	1	C6,2,0.039,123492,0,1

TEXT (TAB DELIMITED)						CSV (COMMA DELIMITED)
D6	2	0.038	123493	0	1	D6,2,0.038,123493,0,1
E6	2	0.080	123494	0	1	E6,2,0.080,123494,0,1
F6	2	0.032	123495	0	1	F6,2,0.032,123495,0,1
G6	2	0.082	123496	0	1	G6,2,0.082,123496,0,1
H6	2	0.044	123497	0	1	H6,2,0.044,123497,0,1
A7	2	0.079	123498	0	1	A7,2,0.079,123498,0,1
B7	2	0.124	123499	0	1	B7,2,0.124,123499,0,1
C7	2	0.060	123500	0	1	C7,2,0.060,123500,0,1
D7	2	0.040	123501	0	1	D7,2,0.040,123501,0,1
E7	2	0.057	123502	0	1	E7,2,0.057,123502,0,1
F7	2	0.040	123503	0	1	F7,2,0.040,123503,0,1
G7	2	0.074	123504	0	1	G7,2,0.074,123504,0,1
H7	2	0.047	123505	0	1	H7,2,0.047,123505,0,1
A8	2	0.048	123506	0	1	A8,2,0.048,123506,0,1
B8	2	0.068	123507	0	1	B8,2,0.068,123507,0,1
C8	2	0.065	123508	0	1	C8,2,0.065,123508,0,1
D8	2	0.058	123509	0	1	D8,2,0.058,123509,0,1
E8	2	0.064	123510	0	1	E8,2,0.064,123510,0,1
F8	2	0.065	123511	0	1	F8,2,0.065,123511,0,1
G8	2	0.068	123512	0	1	G8,2,0.068,123512,0,1
H8	2	0.081	123513	0	1	H8,2,0.081,123513,0,1
A9	2	0.116	123514	0	1	A9,2,0.116,123514,0,1
B9	2	0.080	123515	0	1	B9,2,0.080,123515,0,1
C9	2	0.088	123516	0	1	C9,2,0.088,123516,0,1

TEXT (TAB DELIMITED)						CSV (COMMA DELIMITED)					
D9	2	0.070	123517	0	1	D9,2,0.070,123517,0,1					
E9	2	0.095	123518	0	1	E9,2,0.095,123518,0,1					
F9	2	0.070	123519	0	1	F9,2,0.070,123519,0,1					
G9	2	0.057	123520	0	1	G9,2,0.057,123520,0,1					
H9	2	0.065	123521	0	1	H9,2,0.065,123521,0,1					
A10	2	0.082	123522	0	1	A10,2,0.082,123522,0,1					
B10	2	0.090	123523	0	1	B10,2,0.090,123523,0,1					
C10	2	0.074	123524	0	1	C10,2,0.074,123524,0,1					
D10	2	0.094	123525	0	1	D10,2,0.094,123525,0,1					
E10	2	0.057	123526	0	1	E10,2,0.057,123526,0,1					
F10	2	0.030	123527	0	1	F10,2,0.030,123527,0,1					
G10	2	0.036	123528	0	1	G10,2,0.036,123528,0,1					
H10	2	0.046	123529	0	1	H10,2,0.046,123529,0,1					
A11	2	0.056	123530	0	1	A11,2,0.056,123530,0,1					
B11	2	0.034	123531	0	1	B11,2,0.034,123531,0,1					
C11	2	0.038	123532	0	1	C11,2,0.038,123532,0,1					
D11	2	0.040	123533	0	1	D11,2,0.040,123533,0,1					
E11	2	0.039	123534	0	1	E11,2,0.039,123534,0,1					
F11	2	0.048	123535	0	1	F11,2,0.048,123535,0,1					
G11	2	0.066	123536	0	1	G11,2,0.066,123536,0,1					
H11	2	0.041	123537	0	1	H11,2,0.041,123537,0,1					
A12	2	0.096	123538	0	1	A12,2,0.096,123538,0,1					
B12	2	0.066	123539	0	1	B12,2,0.066,123539,0,1					
C12	2	0.045	123540	0	1	C12,2,0.045,123540,0,1					

TEXT (TAB DELIMITED)						CSV (COMMA DELIMITED)
D12	2	0.056	123541	0	1	D12,2,0.056,123541,0,1
E12	2	0.074	123542	0	1	E12,2,0.074,123542,0,1
F12	2	0.047	123543	0	1	F12,2,0.047,123543,0,1
G12	2	0.055	123544	0	1	G12,2,0.055,123544,0,1
H12	2	0.086	,123545	0	1	H12,2,0.086,123545,0,1



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