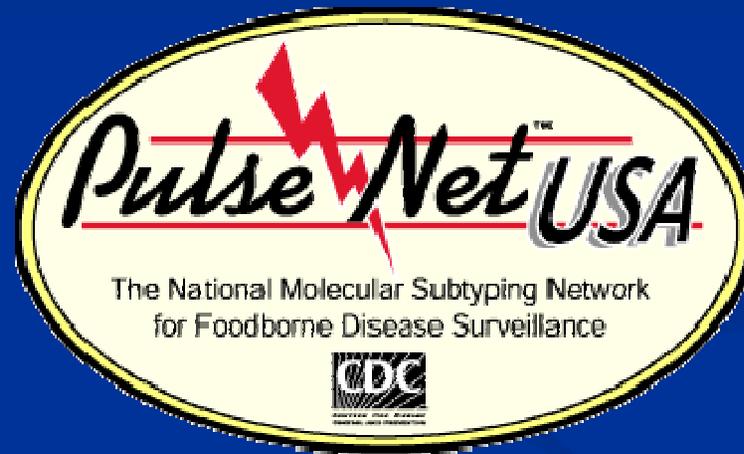


Analyzing a TIFF, Linking Lanes, and Entering Data



Beth McGlinchey
April 2011

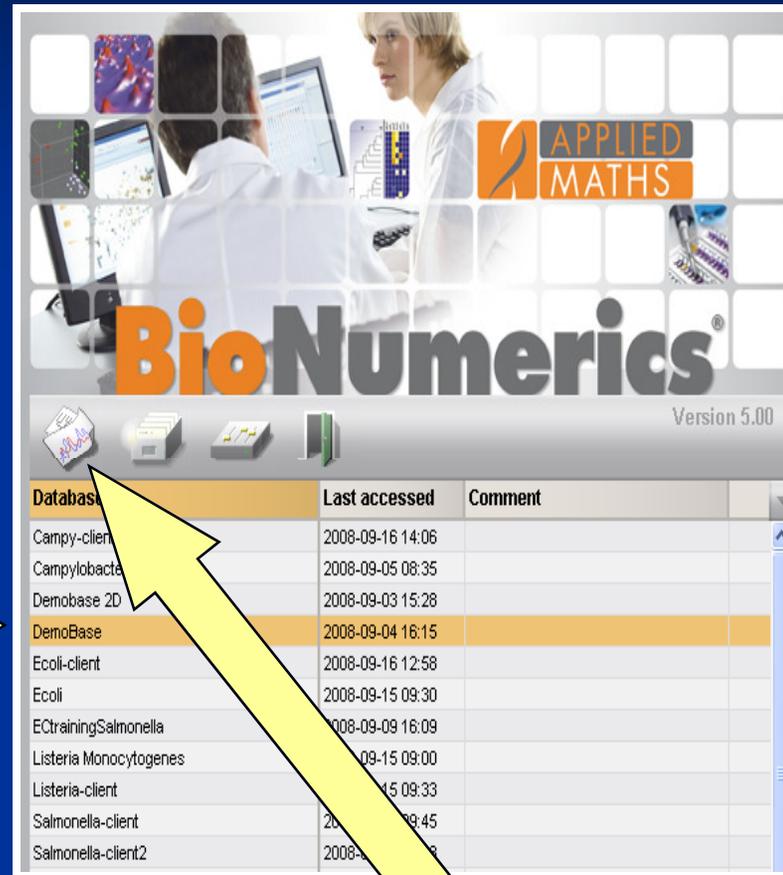


Overview

- Copy a TIFF to the Database
- Analyze a TIFF
 - Convert a TIFF to Gel Strips
 - Define Curves
 - Normalize
 - Mark Bands
- Link Lanes to Database Entries
- Add Demographic Information for Isolates

Open the Database

Highlight the
database of
interest



APPLIED MATHS

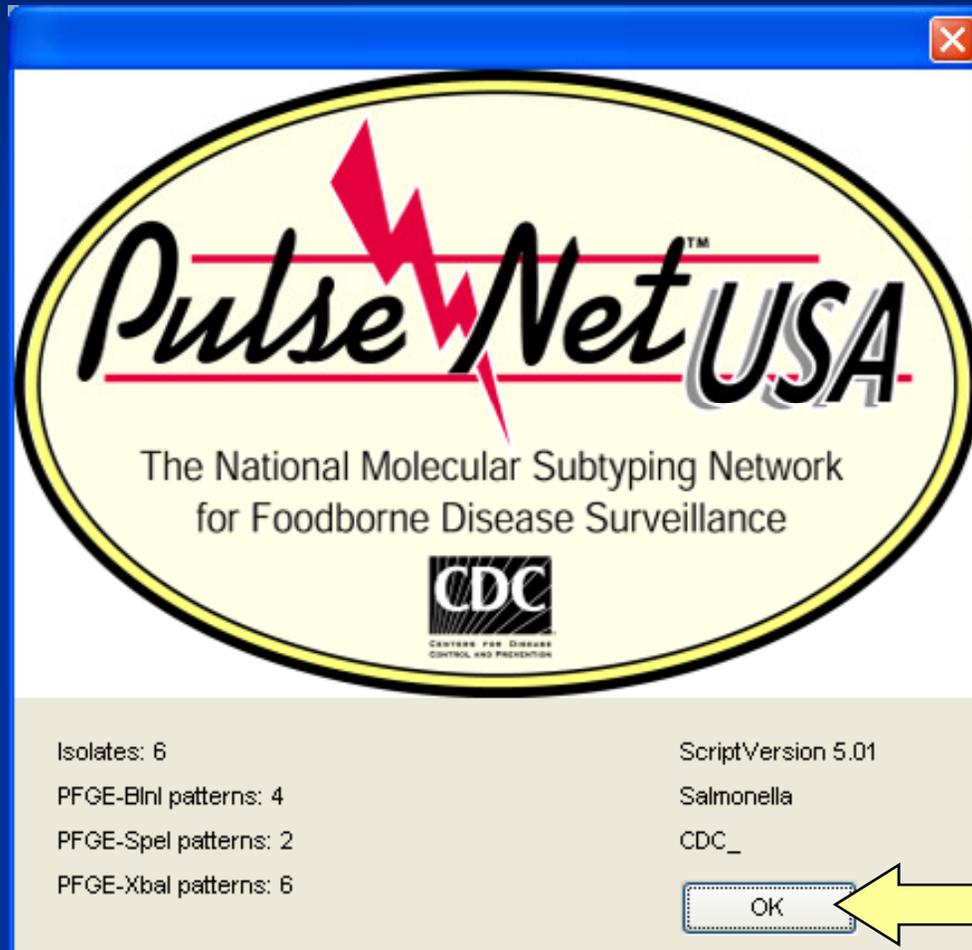
BioNumerics[®]

Version 5.00

Database	Last accessed	Comment
Campy-client	2008-09-16 14:06	
Campylobacte	2008-09-05 08:35	
Demobase 2D	2008-09-03 15:28	
DemoBase	2008-09-04 16:15	
Ecoli-client	2008-09-16 12:58	
Ecoli	2008-09-15 09:30	
EctrainingSalmonella	2008-09-09 16:09	
Listeria Monocytogenes	2008-09-15 09:00	
Listeria-client	2008-09-15 09:33	
Salmonella-client	2008-09-15 09:45	
Salmonella-client2	2008-09-15 09:45	

Click "Analyze"

Open the Database

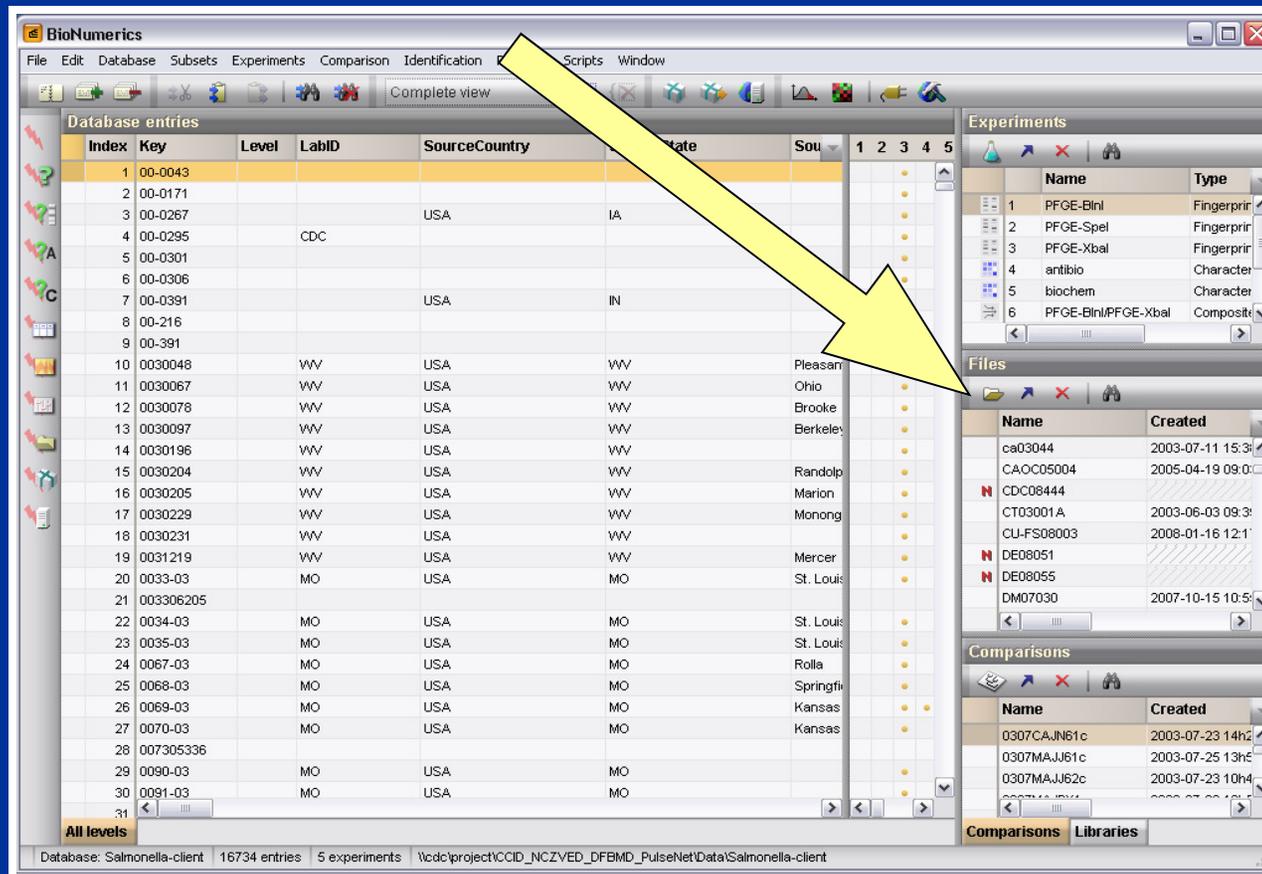


Click "OK"

Copy a TIFF to the Database

Click on “Add new experiment file” 

TIFFs should be named according to PulseNet protocol: LabID *Two Digit Year* Three digit number (ex. **GA10001**)

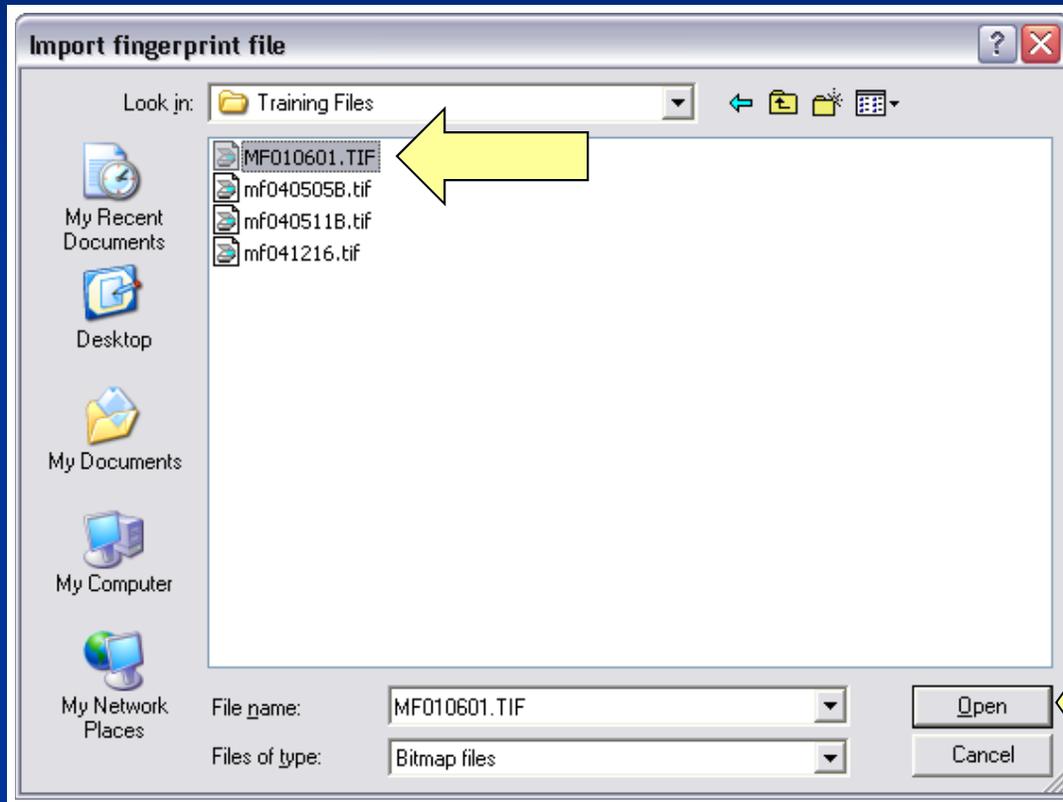


The screenshot displays the BioNumerics software interface. The main window shows a table of database entries for Salmonella. A yellow arrow points from the 'Add new experiment file' button in the top-left callout to the 'Add new experiment file' button in the software's 'Experiments' panel.

Index	Key	Level	LabID	SourceCountry	State	Sou	1	2	3	4	5
1	00-0043										
2	00-0171										
3	00-0267			USA	IA						
4	00-0295		CDC								
5	00-0301										
6	00-0306										
7	00-0391			USA	IN						
8	00-216										
9	00-391										
10	0030048	WV		USA	WV	Pleasant					
11	0030067	WV		USA	WV	Ohio					
12	0030078	WV		USA	WV	Brooke					
13	0030097	WV		USA	WV	Berkeley					
14	0030196	WV		USA	WV						
15	0030204	WV		USA	WV	Randolph					
16	0030205	WV		USA	WV	Marion					
17	0030229	WV		USA	WV	Monong					
18	0030231	WV		USA	WV						
19	0031219	WV		USA	WV	Mercer					
20	0033-03	MO		USA	MO	St. Louis					
21	003306205										
22	0034-03	MO		USA	MO	St. Louis					
23	0035-03	MO		USA	MO	St. Louis					
24	0067-03	MO		USA	MO	Rolla					
25	0068-03	MO		USA	MO	Springfield					
26	0069-03	MO		USA	MO	Kansas					
27	0070-03	MO		USA	MO	Kansas					
28	007305336										
29	0090-03	MO		USA	MO						
30	0091-03	MO		USA	MO						
31											

Database: Salmonella-client 16734 entries 5 experiments \\\cdd\project\CCID_NCZVED_DFBMD_PulseNet\Data\Salmonella-client

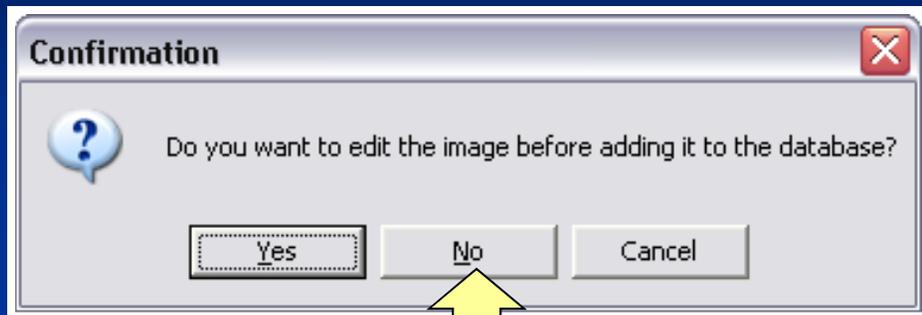
Copy a TIFF to the Database



Navigate to the desired TIFF, select it and click "Open"

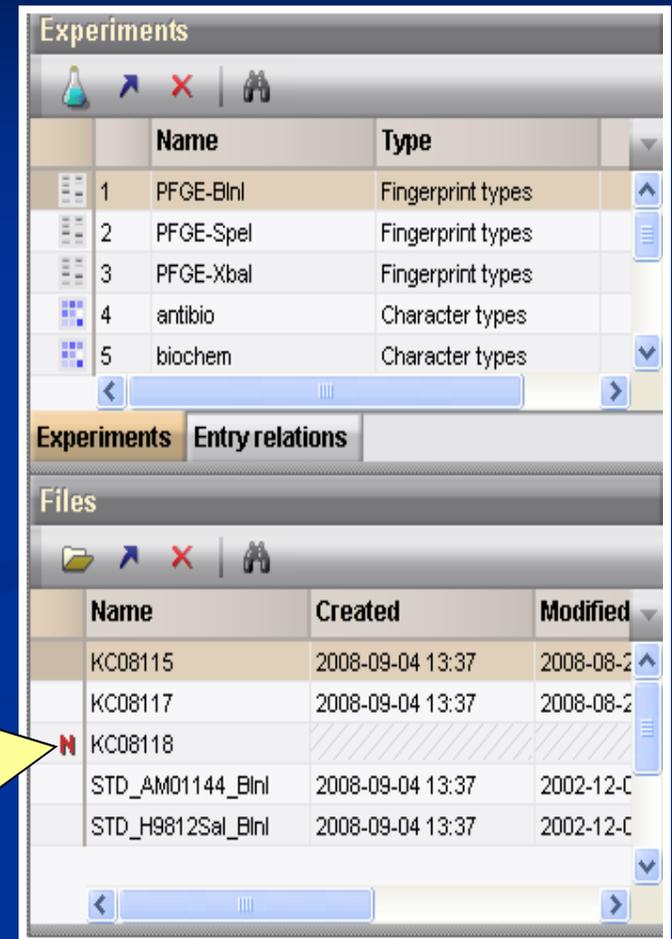
NOTE: the TIFF can also be saved to the images folder located on your computer

Copy a TIFF to the database



Choose "No" to analyze TIFF

TIFF appears with Red "N" to denote that it is new



The screenshot shows two tables from a database interface. The top table is "Experiments" and the bottom table is "Files".

	Name	Type
1	PFGE-BlnI	Fingerprint types
2	PFGE-Spel	Fingerprint types
3	PFGE-Xbal	Fingerprint types
4	antibio	Character types
5	biochem	Character types

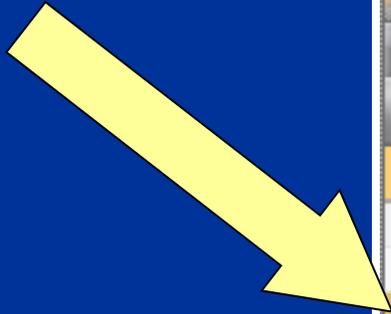
	Name	Created	Modified
	KC08115	2008-09-04 13:37	2008-08-2
	KC08117	2008-09-04 13:37	2008-08-2
N	KC08118		
	STD_AM01144_BlnI	2008-09-04 13:37	2002-12-C
	STD_H9812Sal_BlnI	2008-09-04 13:37	2002-12-C

TIFF Size

- High resolution: file becomes 3 times larger (~1.2MB)
- Low resolution: fewer pixels, which makes the image and file smaller...requires less space to save (~300Kb)
- Refer to the “Image Acquisition” document:
 - **CDC Team:** CDC PulseNet » Image Acquisition » GelDoc XR Image Acquisition Instructions Amended

Analyze a TIFF

Highlight the TIFF



Experiments

	Name	Type
1	PFGE-BlnI	Fingerprint types
2	PFGE-Spel	Fingerprint types
3	PFGE-Xbal	Fingerprint types
4	antibio	Character types
5	biochem	Character types

Files

Name	Created
KC08115	2008-09-04 13:37
KC08117	2008-09-04 13:37
KC08118	
STD_AM01144_BlnI	2008-09-04 13:37
STD_H9812Sal_BlnI	2008-09-04 13:37

Click the arrow to open or double-click on TIFF

Analyze a TIFF

Click “Edit Fingerprint Data”
to analyze TIFF

A screenshot of a software application window titled "Fingerprint file 'CDC08444'". The window has a menu bar with "File", "Database", "PulseNet", and "Window". Below the menu bar is a toolbar with various icons. The main area is divided into two panes: "Fingerprint information" on the left and "Entry information" on the right. The "Entry information" pane contains a table with the following columns: "Nr.", "Experiment", "Index", "Key", "Level", "LabID", "SourceCountry", and "SourceState". The table is currently empty. At the bottom of the window, there is a section for "Fingerprint file information" which displays the location and file name: "Location: \\cdc\project\CCID_NCZVED_DFBMD_PulseNet\Data\Salmonella-client" and "File name: CDC08444". The status bar at the very bottom indicates "0 entries".

Fingerprint information		Entry information					
Nr.	Experiment	Index	Key	Level	LabID	SourceCountry	SourceState
0 entries							

Analyze a TIFF

Select enzyme
used on gel



Fingerprint type [X]

Select a fingerprint type:

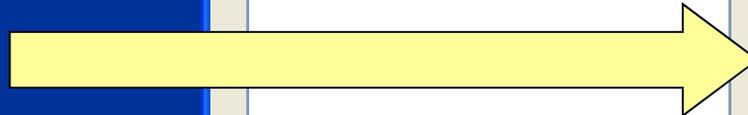
- PFGE-BlnI
- PFGE-Spel
- PFGE-XbaI**

Create new...

OK

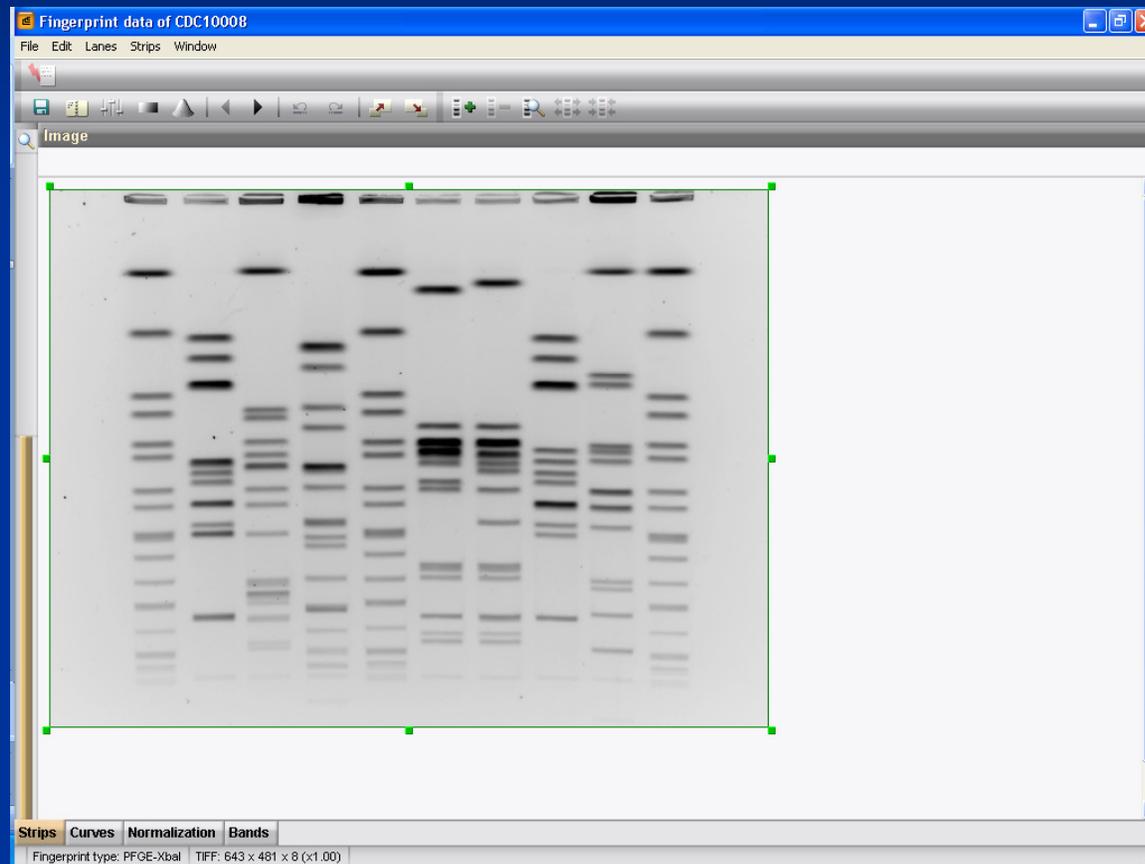
Cancel

Click "OK"



Analysis Step 1: Strips

The “Fingerprint Data” window opens

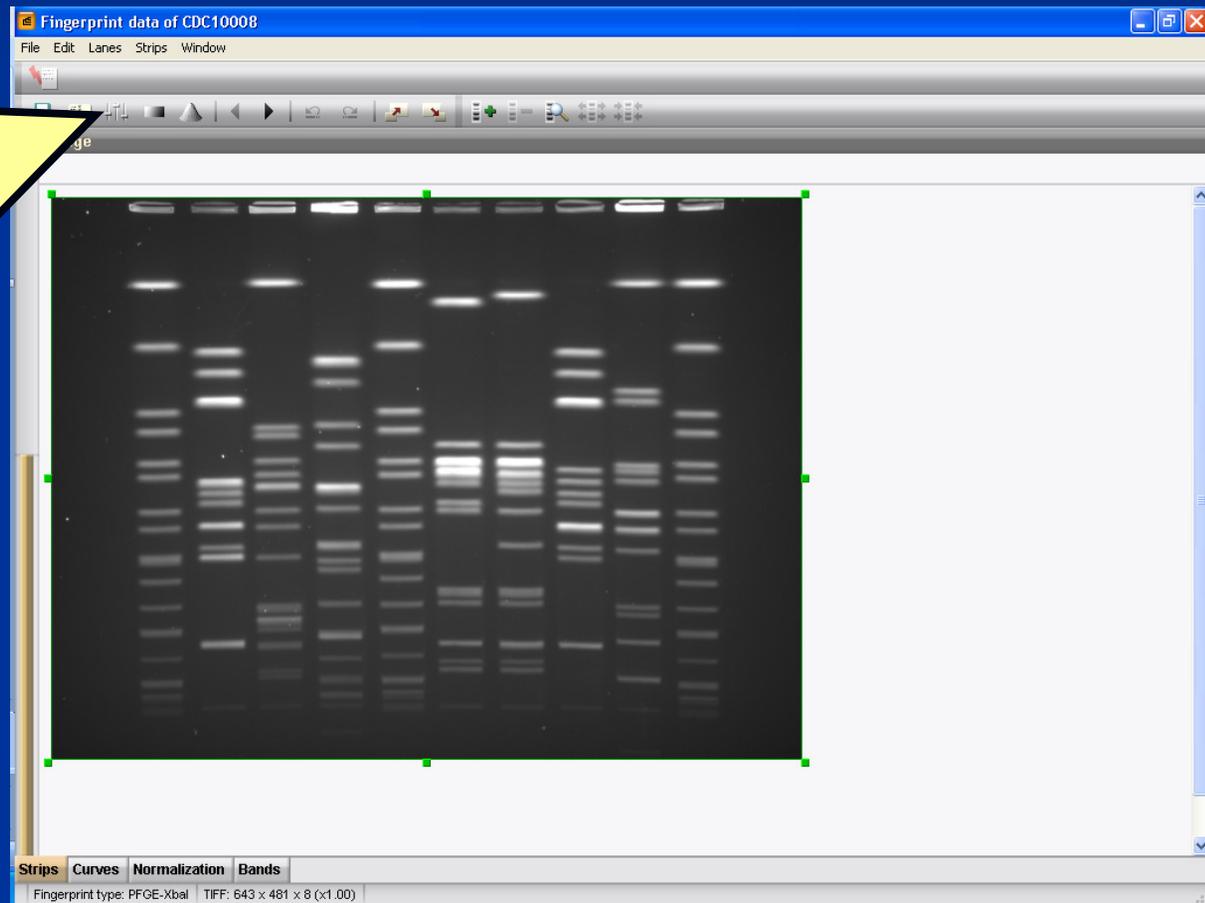
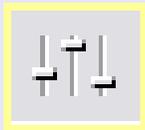


NOTE: the TIFF should be gray with black bands

Analysis Step 1: Strips

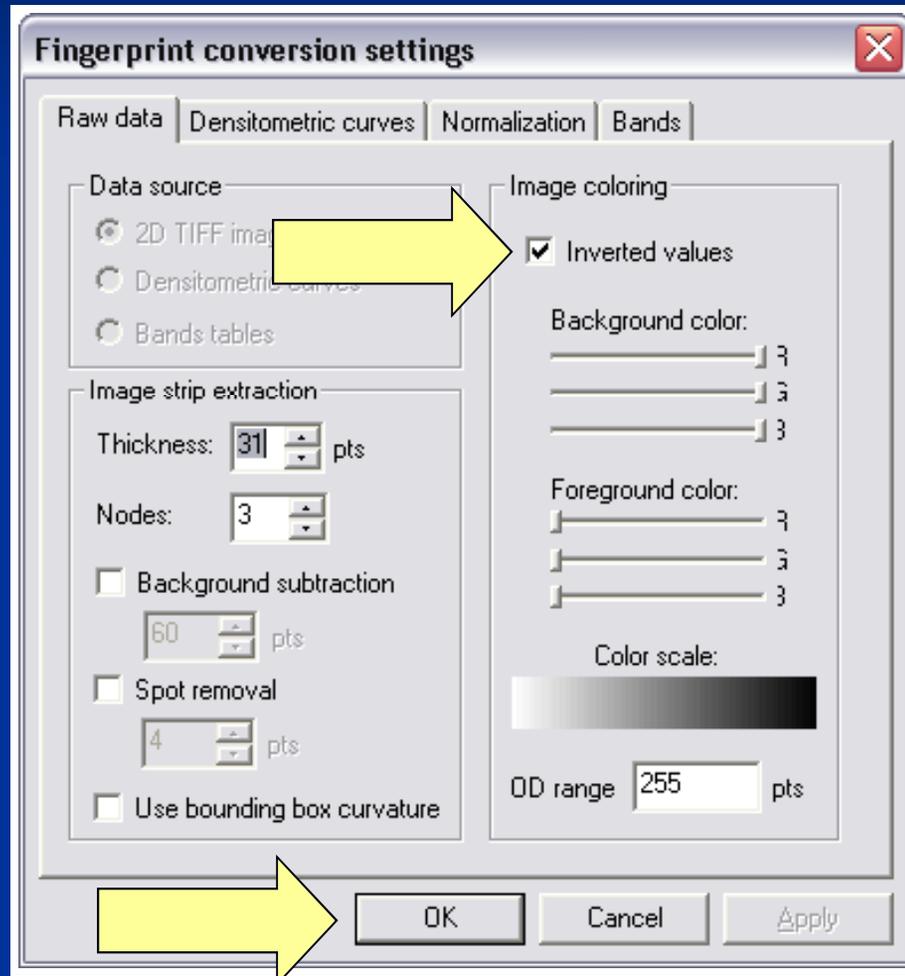
What if your TIFF is black with white bands?

Click the
Settings button
to correct

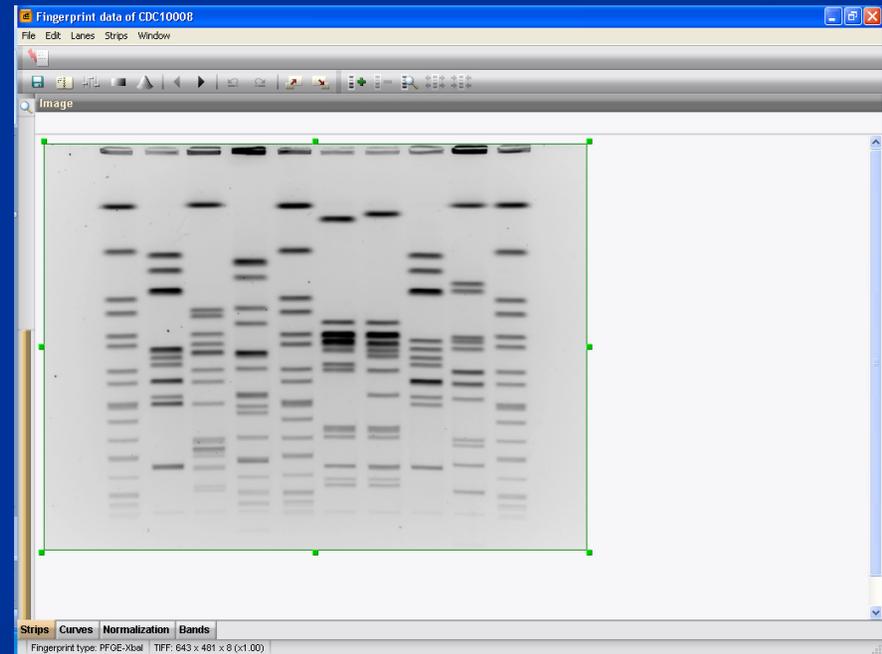
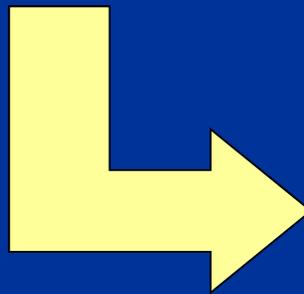


Analysis Step 1: Strips

Check the
“Inverted values”
box and click
“OK”



Analysis Step 1: Strips

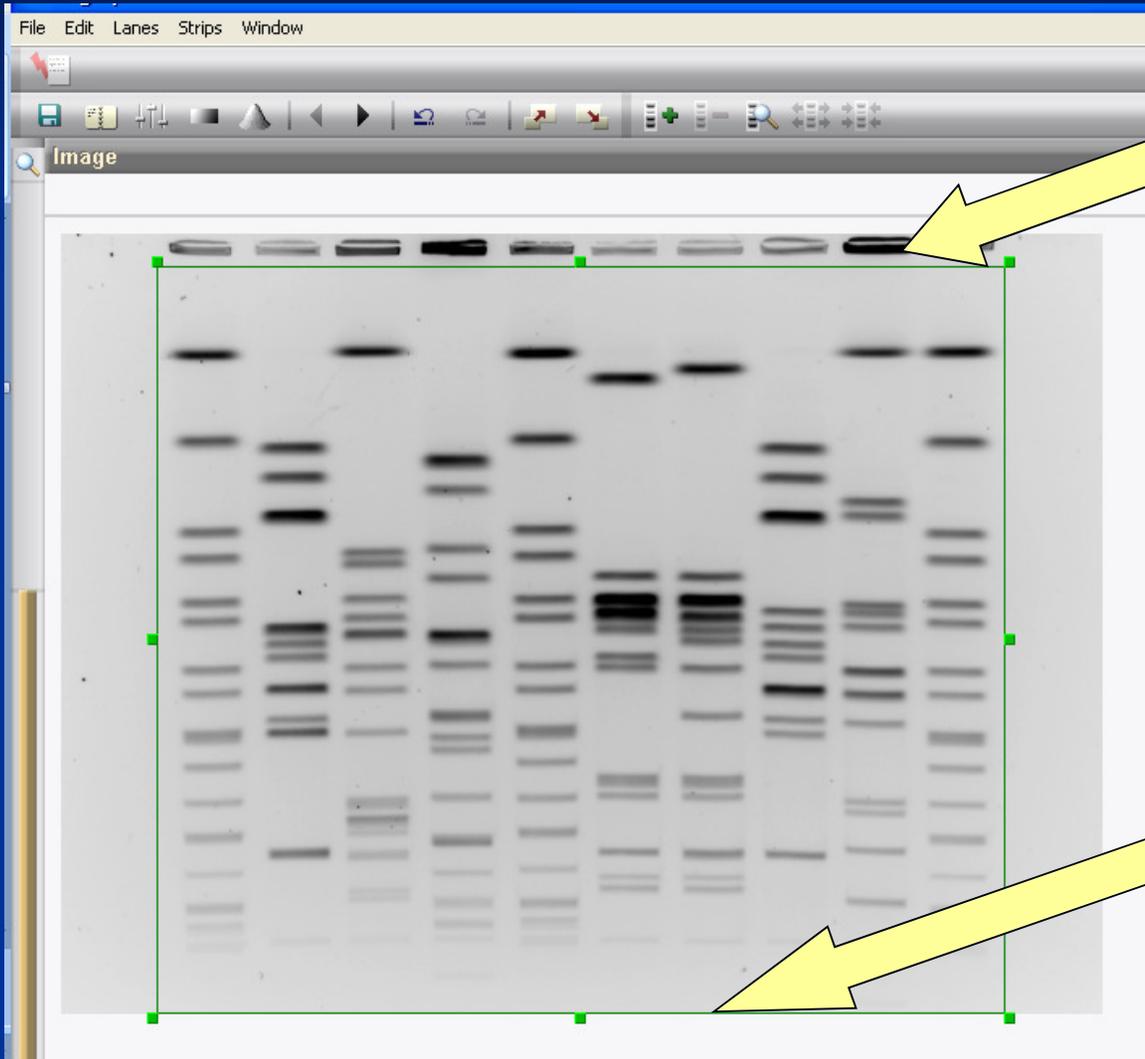


Analysis Step 1: Strips



Use the green nodes to fit the green frame tightly around the lanes

Analysis Step 1: Strips

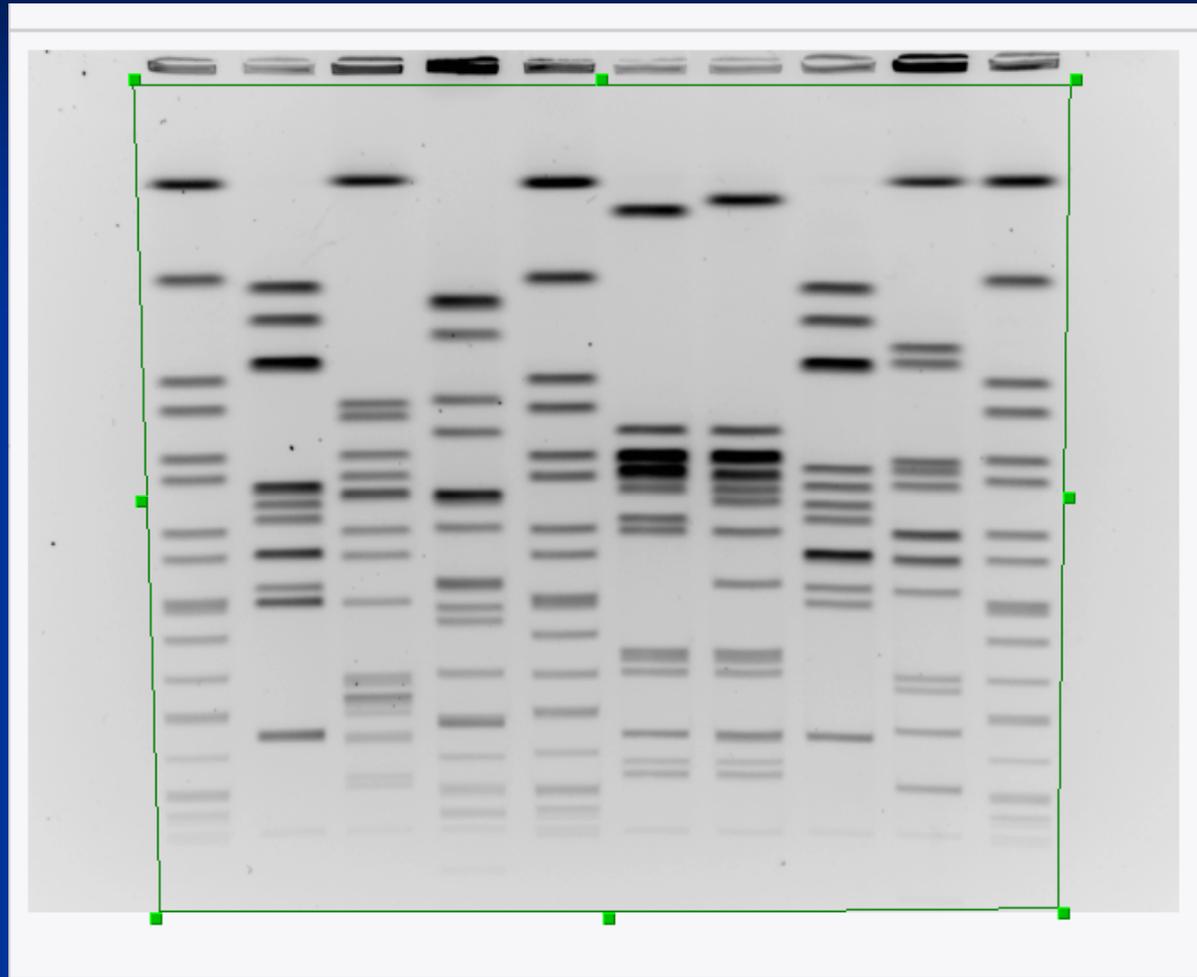


Place the top of the frame just below the wells

Make sure bottom line includes all bands and is placed at the bottom of the TIFF

TIFF will not normalize correctly otherwise

Analysis Step 1: Strips



If your TIFF has slanted lanes, hold down the SHIFT key as you adjust the green box

Analysis Step 1: Strips



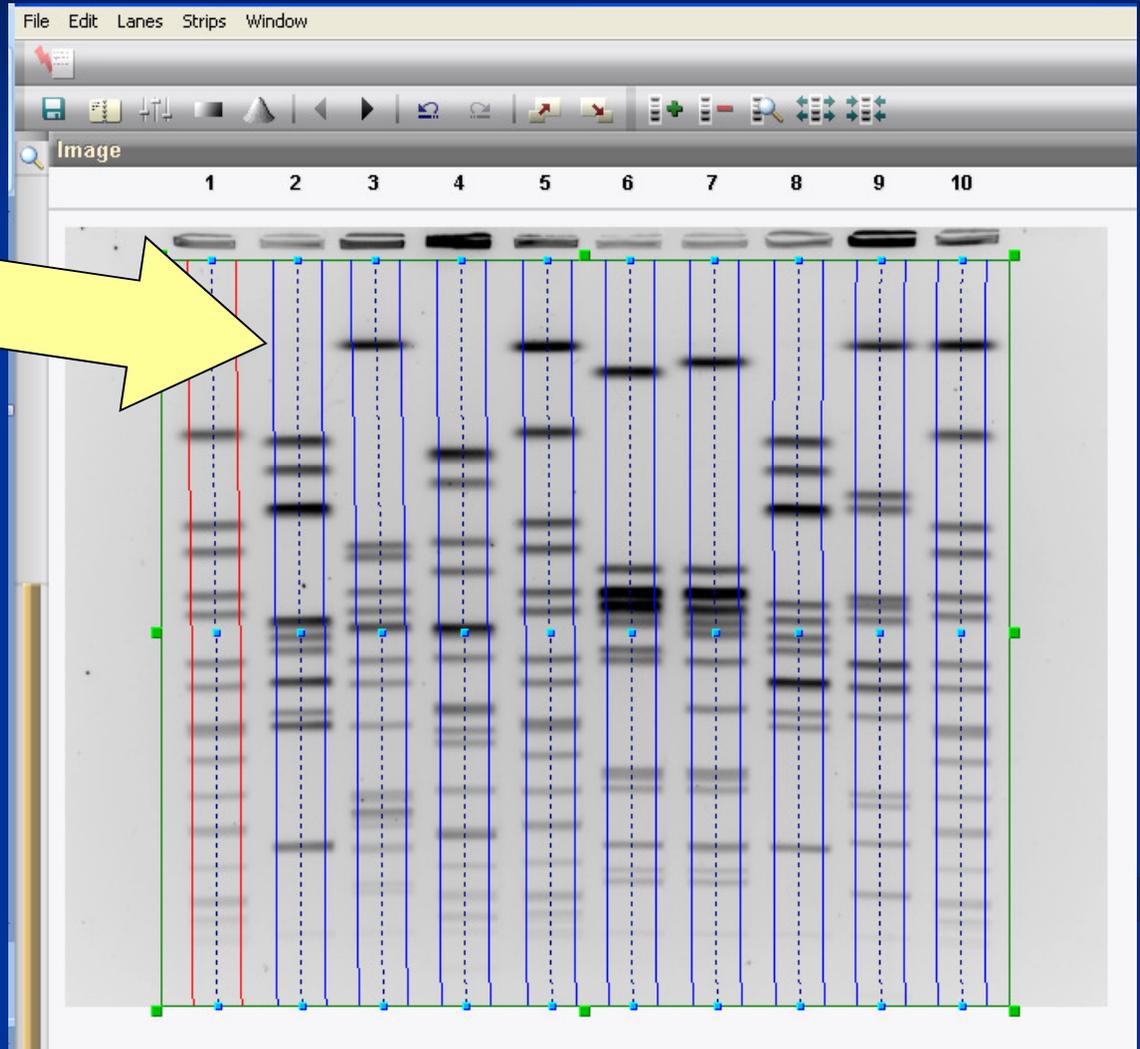
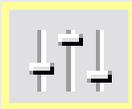
To define lane strips, click “Auto Search Lanes” 

Enter the number of lanes on the TIFF and click “OK”

Analysis Step 1: Strips

The strips should surround the bands

To adjust width of all lanes, click “Edit Settings”



Analysis Step 1: Strips

Click on "Raw Data"

Adjust Thickness until strips are wide enough

Click "OK"

Fingerprint conversion settings

Raw data | Densitometric curves | Normalization | Bands

Data source

- 2D TIFF image
- Densitometric curves
- Bands tables

Image strip extraction

Thickness: 41 pts

Nodes: 3

Background subtraction
20 pts

Spot removal
4 pts

Use bounding box curvature

Image coloring

Inverted values

Background color:

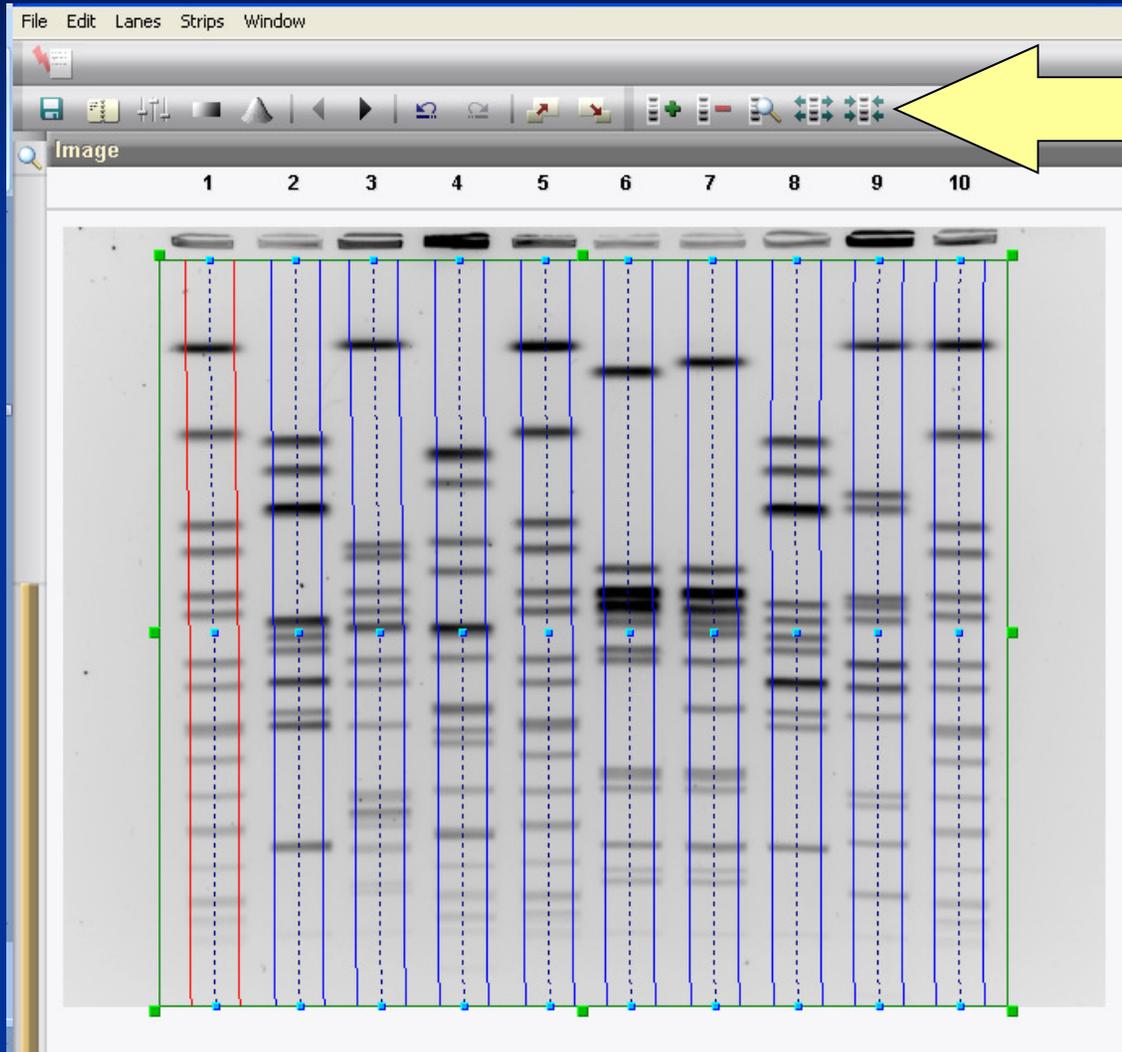
Foreground color:

Color scale:

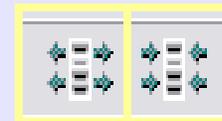
OD range 255 pts

OK Cancel Apply

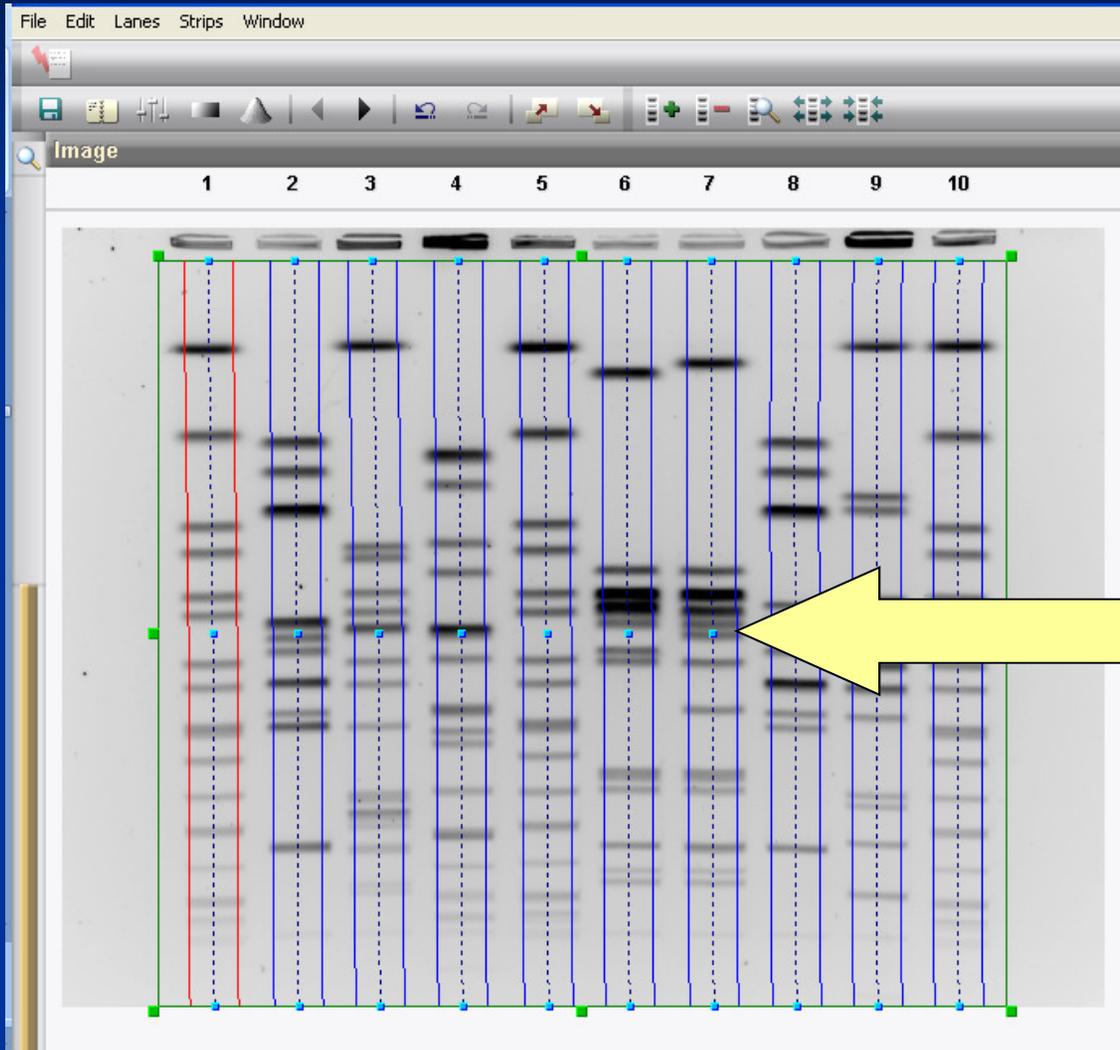
Analysis Step 1: Strips



To adjust individual strip width, click on “Make strip larger” or “Make strip smaller”



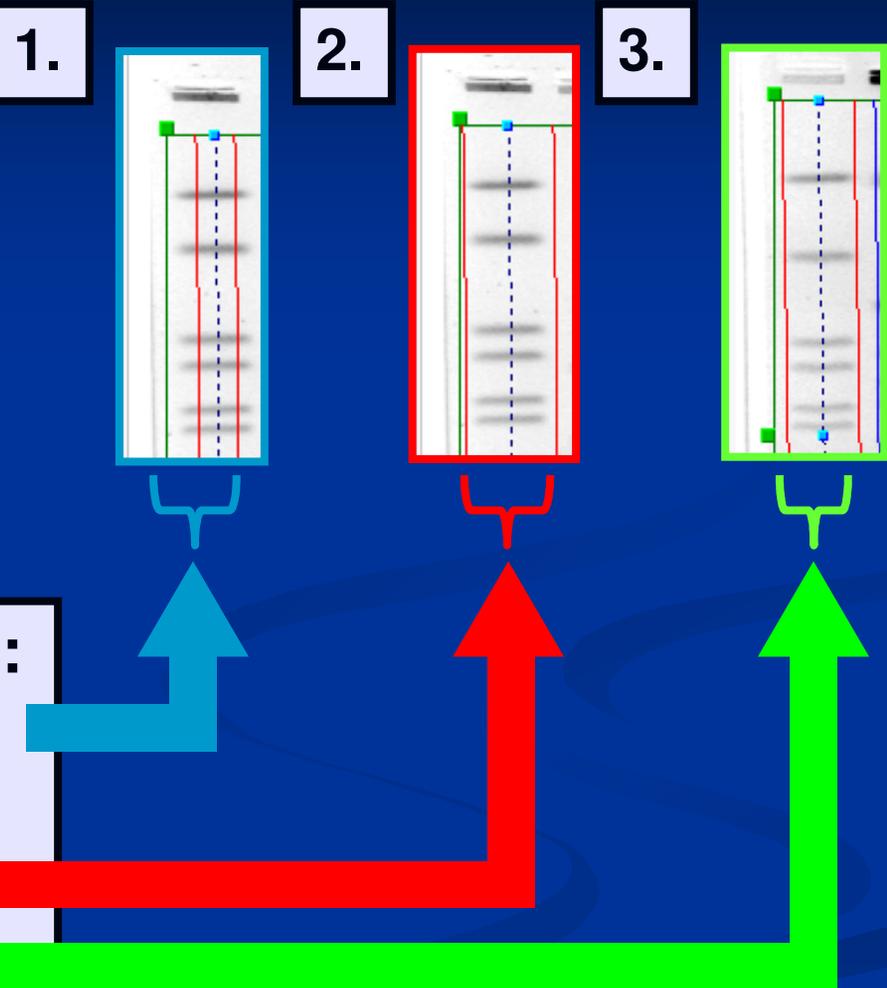
Analysis Step 1: Strips



The strips can be moved by clicking a blue node and dragging the mouse. If the lane is crooked press the SHIFT key while dragging the node to move a portion of the strip.

Analysis Step 1: Strips

NOTE: This is an important step to help determine doublet or triplet resolution during band marking



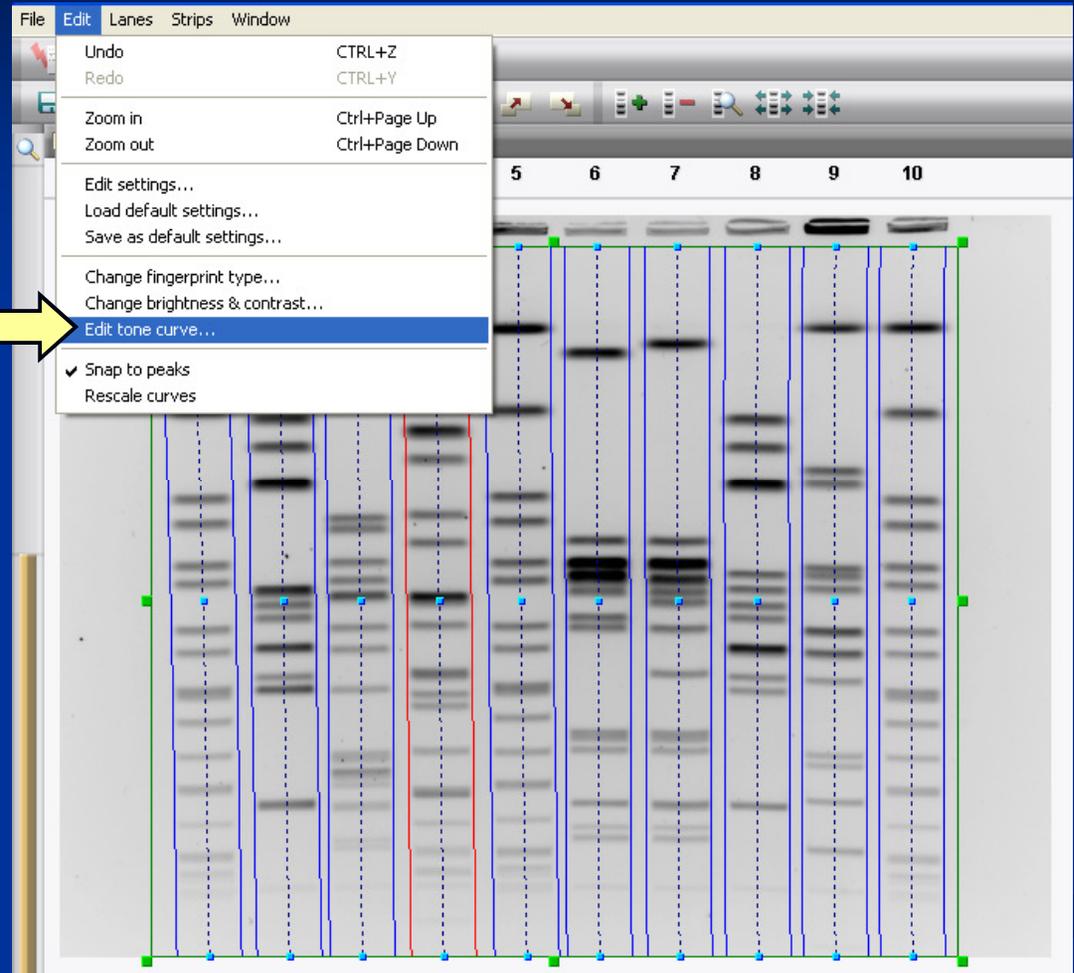
Make sure the strip does not:

1. cut off the edges of the lane,
2. include too much space,
3. but instead the strip should include all of the lane

Analysis Step 1: Strips

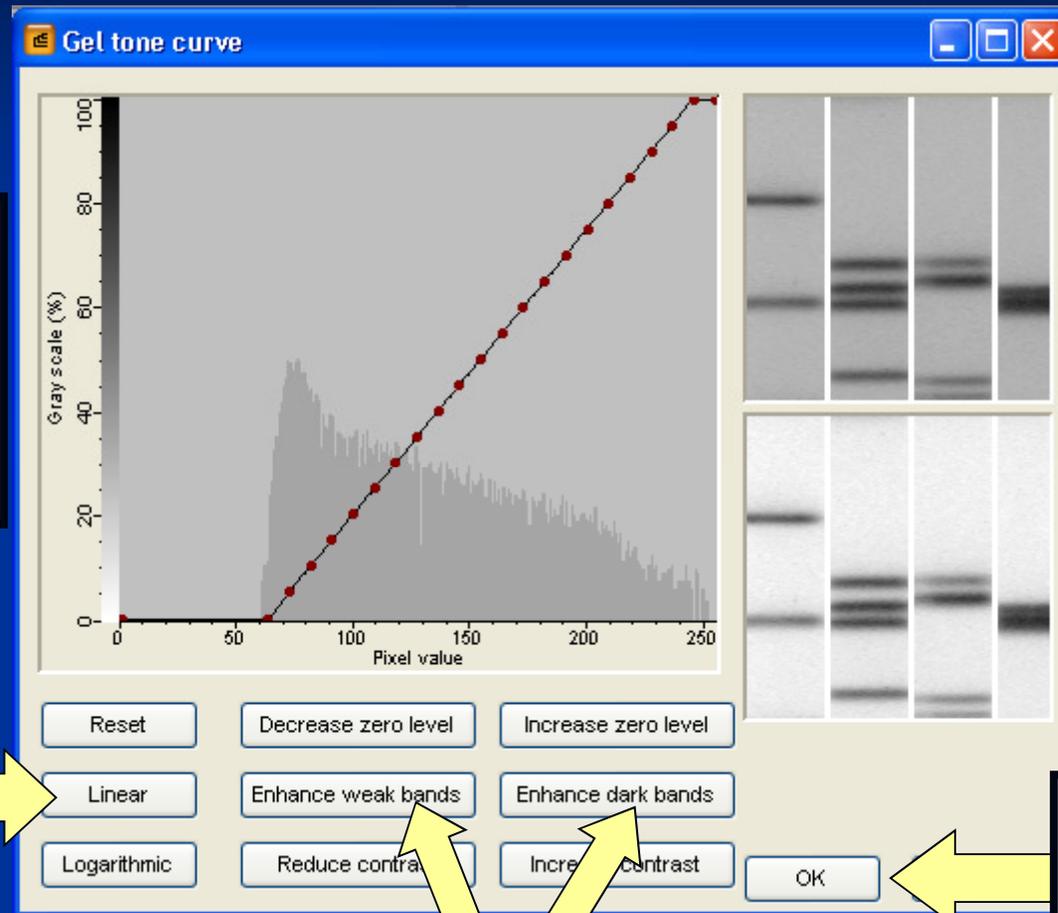
To adjust the brightness of the TIFF, select **Edit** → “Edit tone curve”

This step increases the contrast between the bands and the background



Analysis Step 1: Strips

Click
“Linear” to
begin
optimization



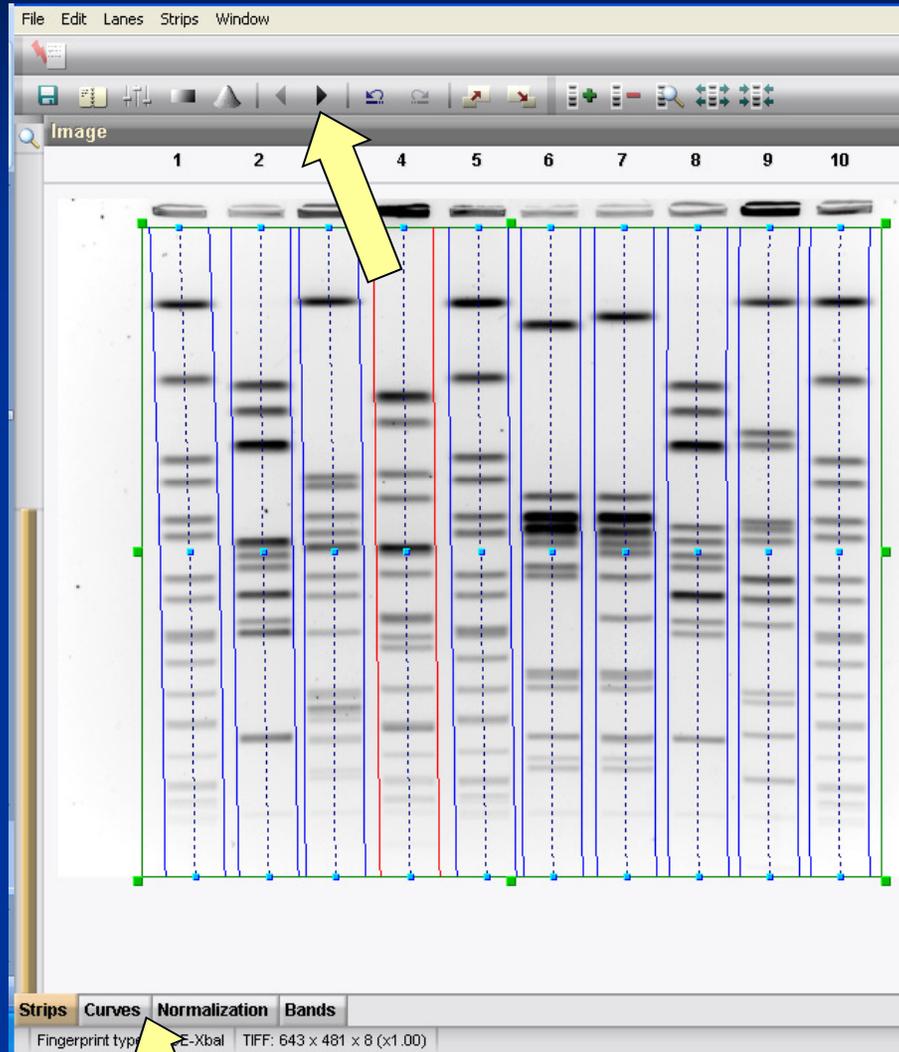
Before

After

Click “OK”
when done

Click “Enhance weak bands” and/or “Enhance dark bands” to further optimize gel

Analysis Step 1: Strips

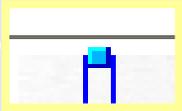


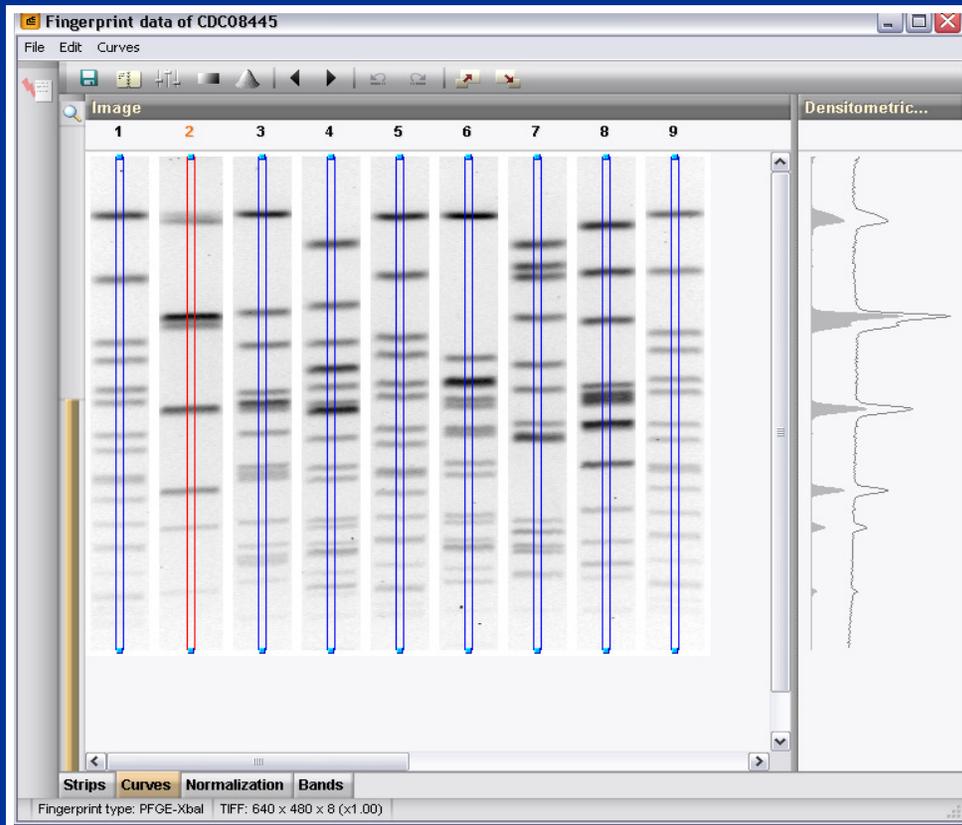
Save work 

then click “Next”
arrow  or the

tab at the bottom
of the screen

Analysis Step 2: Curves

Use blue node  to drag strip to best area of each lane. Avoid artifacts, specks, etc.



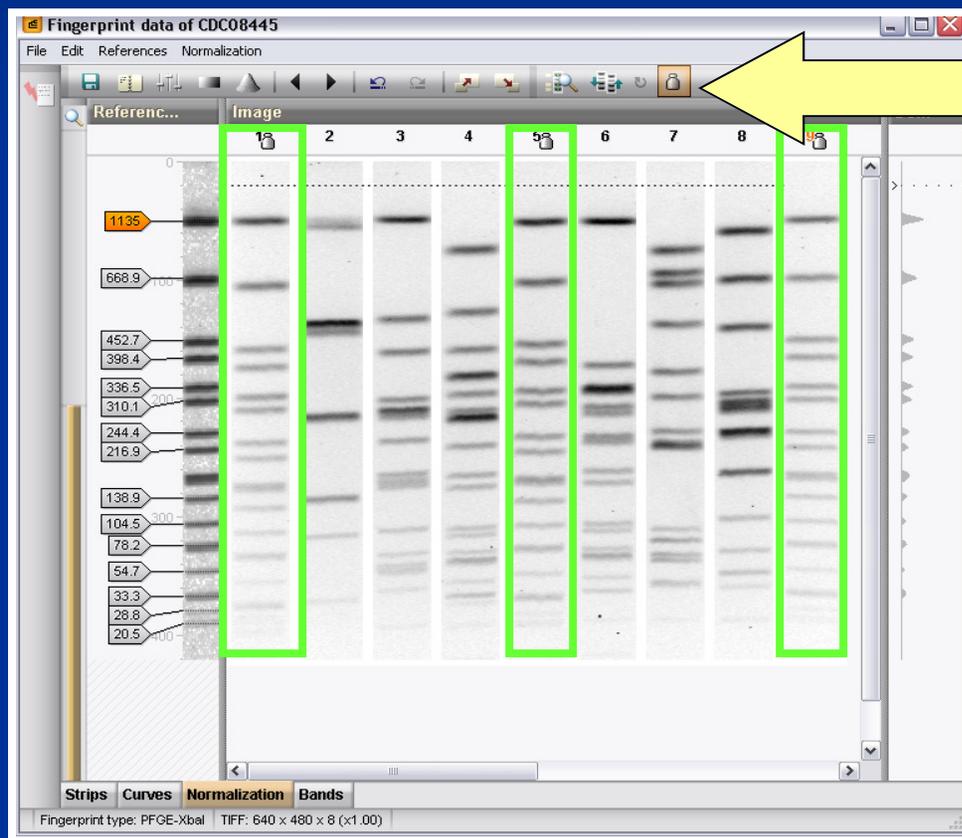
Click “Next”
arrow 

Densitometric
curve*

*Peaks correspond with band intensity in gel lanes

Analysis Step 3: Normalization

1. Click on standard lane



2. Click on the weight to designate standard lane



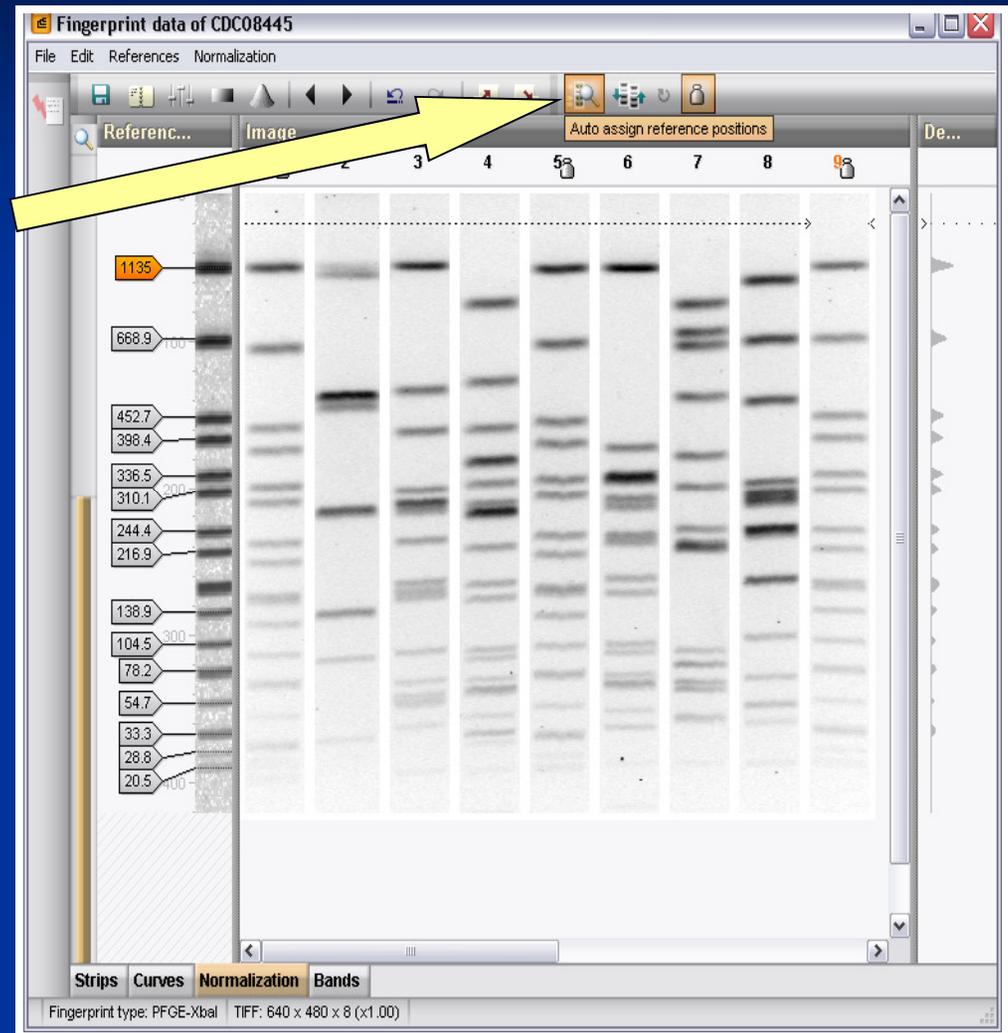
NOTE: For proper normalization, the 1st, last, and every 4th or 5th lane should have a standard

Analysis Step 3: Normalization

Click “Auto assign reference positions” to assign bands in standard lanes



NOTE: Only use this tool if gel has minimal artifacts and ghost bands. If ghost bands and artifacts are present manually assign bands.



Analysis Step 3: Normalization

If bands were marked before auto assignment, check the “Keep existing assignments” box

Auto assign reference bands

Search method

Using bands

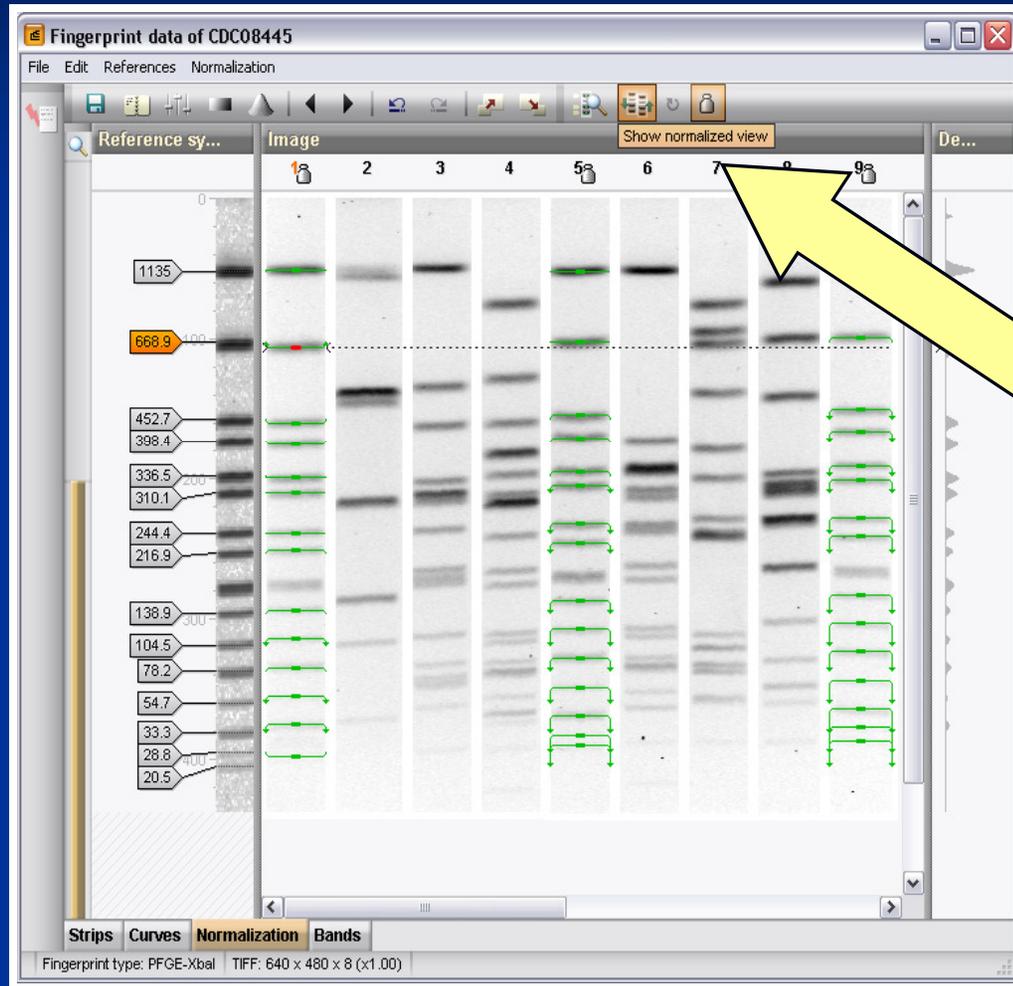
Using densitometric curve (requires standard)

Keep existing assignments

Alignment settings... OK Cancel

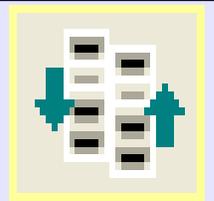
Click “OK”

Analysis Step 3: Normalization



NOTE: Not all visible bands in standard lanes will be marked

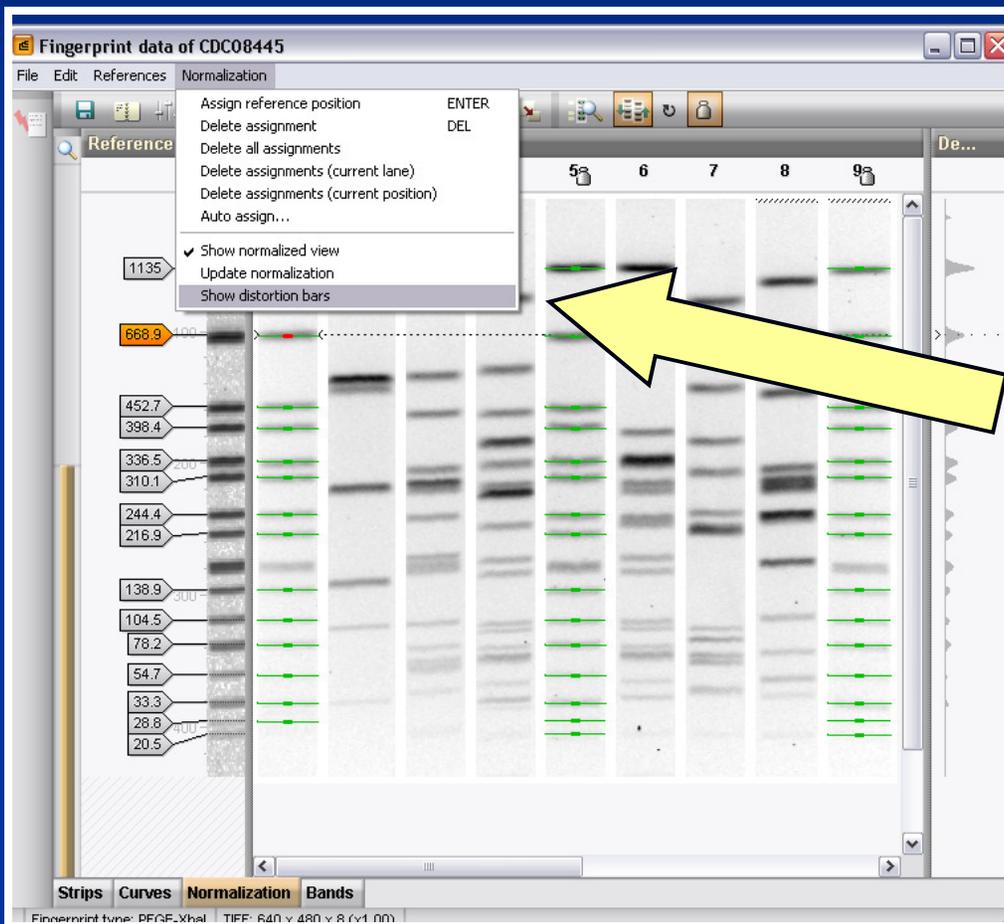
Toggle the button



“Show normalized view”

Analysis Step 3: Normalization

Verify band assignments and good normalization



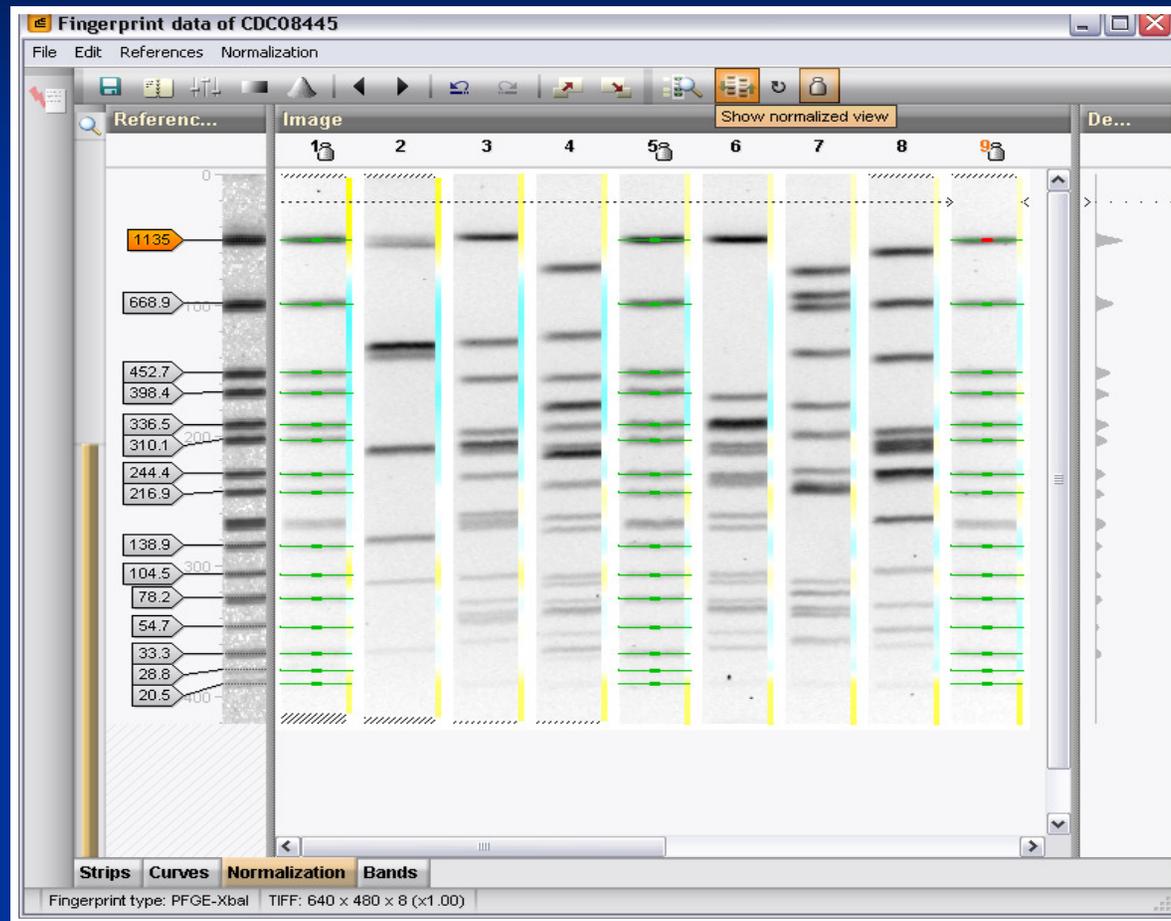
Click
Normalization → “Show
distortion bars” to check
normalization

Normalization

Assign reference position	ENTER
Delete assignment	DEL
Delete all assignments	
Delete assignments (current lane)	
Delete assignments (current position)	
Auto assign	

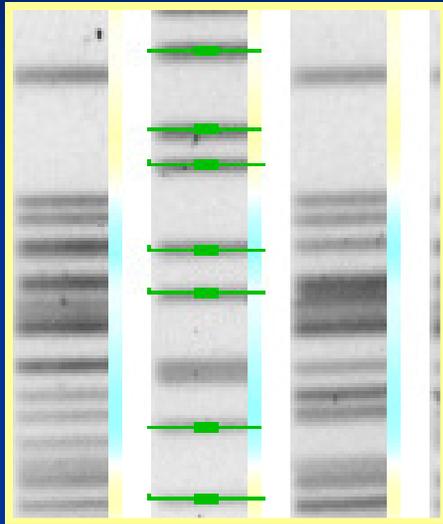
- ✓ Show normalized view
- Update normalization
- ✓ Show distortion bars

Analysis Step 3: Normalization

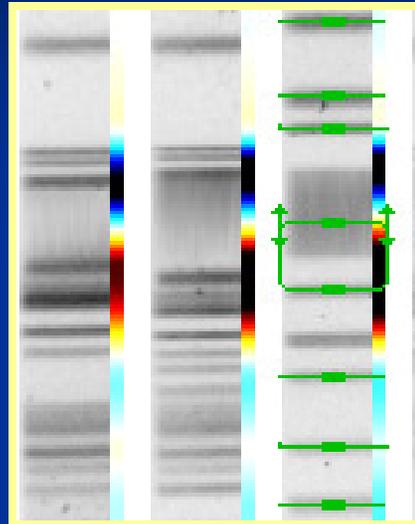


Results after proper normalization

Analysis Step 3: Normalization



Light colors indicate good normalization



Dark colors, especially in one part of the gel indicate poor normalization, possibly due to an incorrect band assignment

Band assigned to wrong reference position

Save work



then click "Next" arrow



Demo



PFGE Patterns of *E. coli* O157:H7

Fragment Sizes
(in kilobases)

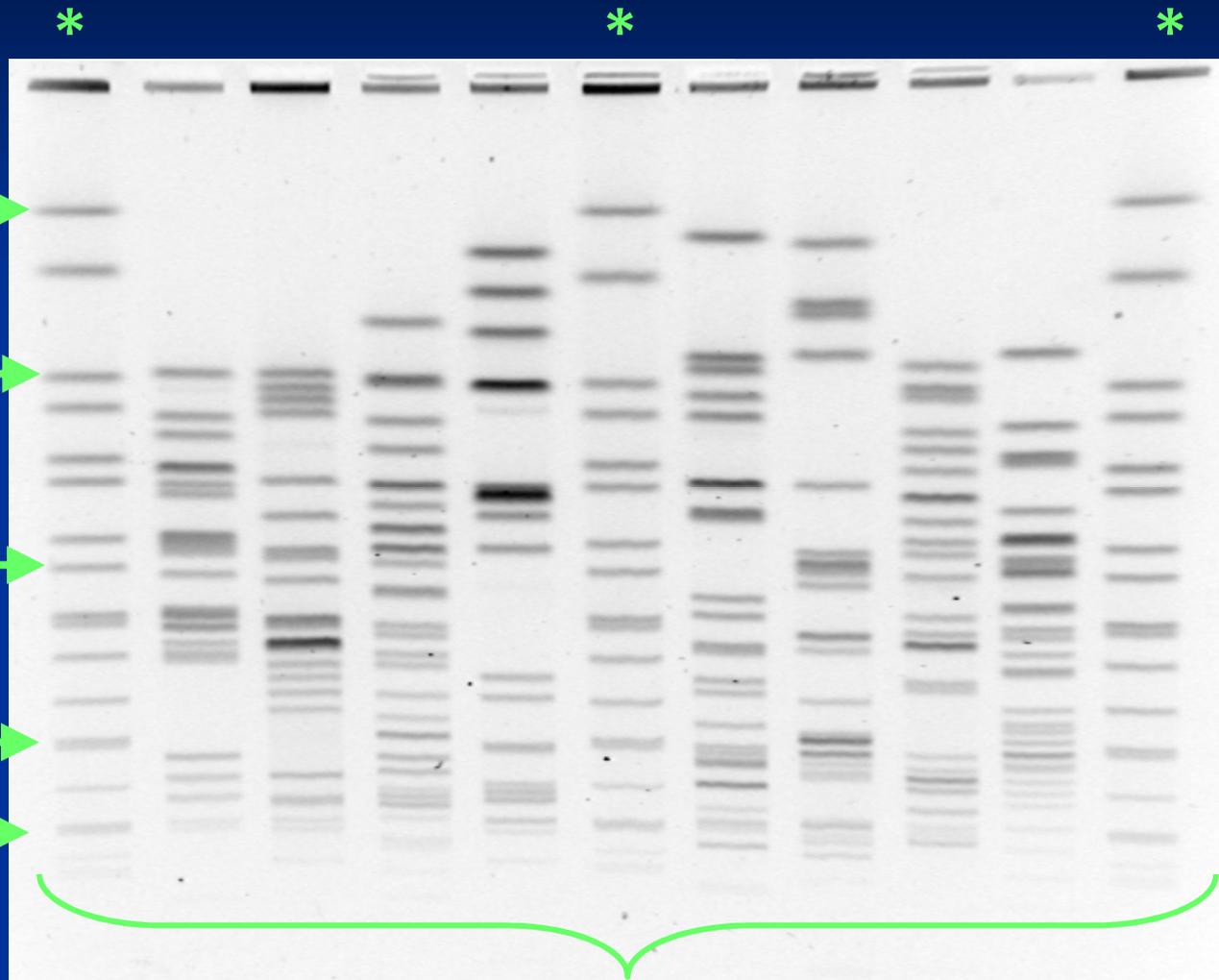
1135 Kb

452.7 Kb

216.9 Kb

76.8 Kb

33.3 Kb

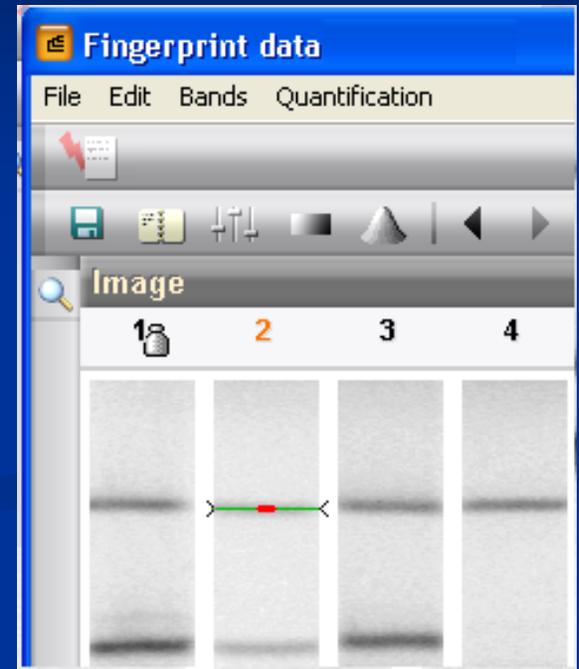
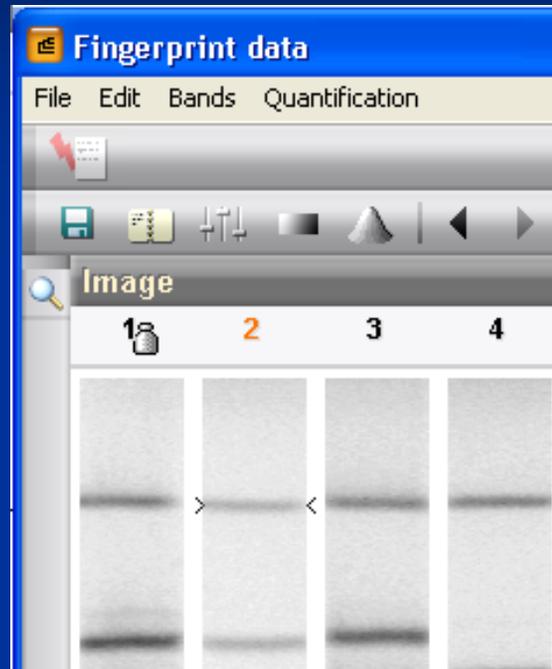


DNA “fingerprints”

*Global Reference Standard

Analysis Step 4: Bands

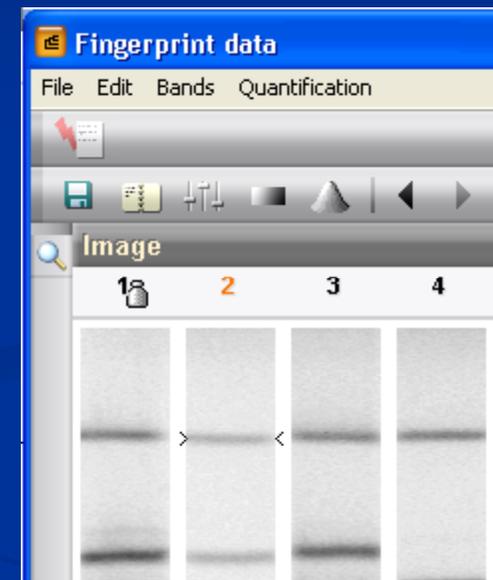
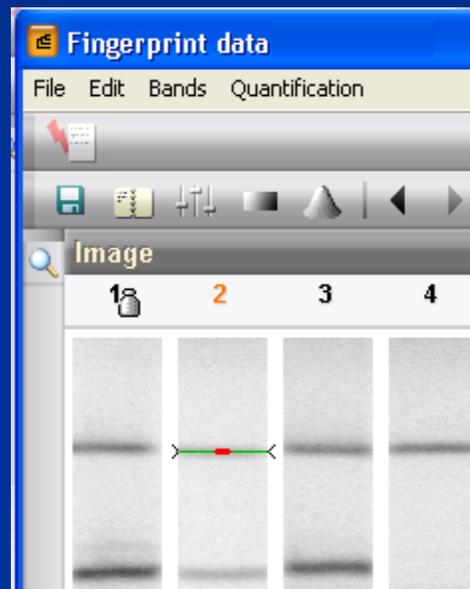
To add a new band assignment, select the band and then press the ENTER key



Hold down the TAB key while dragging the mouse to get better control of band placement or de-select "Snap to peaks" under the "Edit" menu

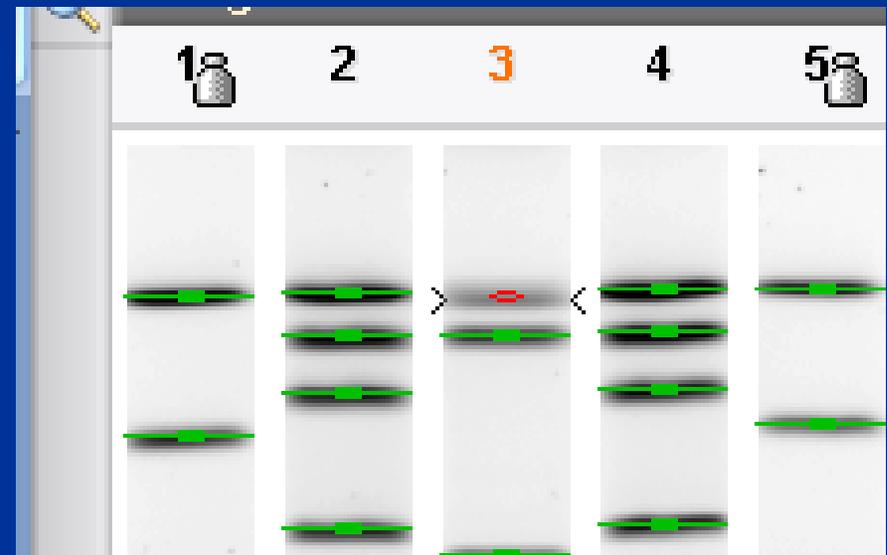
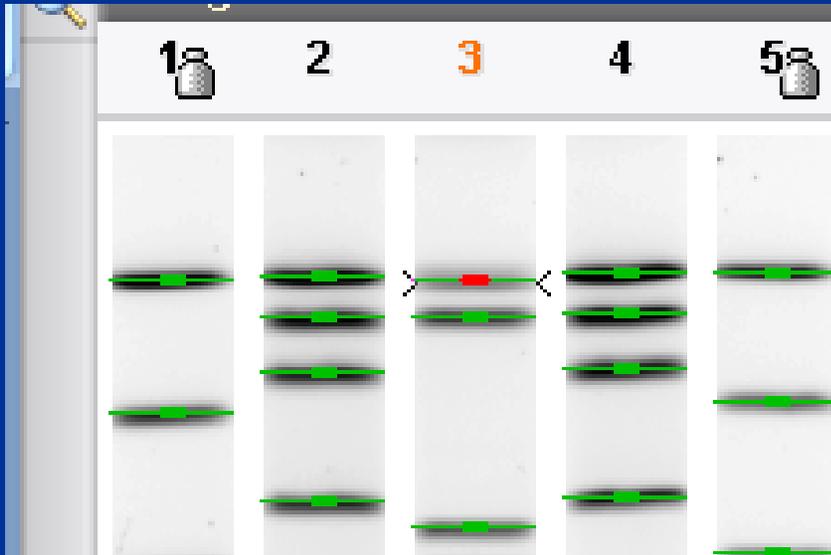
Analysis Step 4: Bands

To delete a band assignment, select the band and then press the DELETE key



Analysis Step 4: Bands

To mark a band as uncertain select “Mark band(s) as uncertain” from the “Bands” menu



NOTE: use this function sparingly

Analysis Step 4: Bands

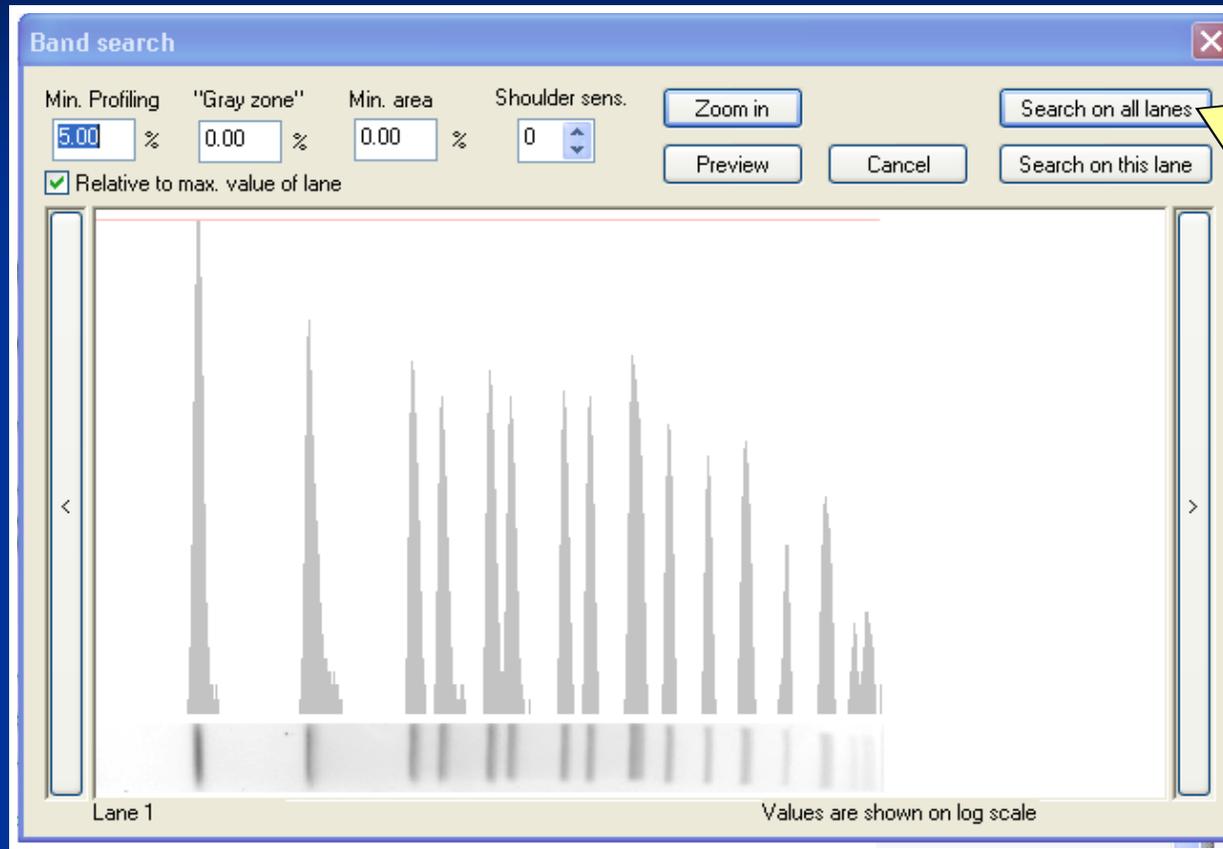
Click “Auto search bands”



NOTE: Only use this tool if gel has minimal artifacts and ghost bands!

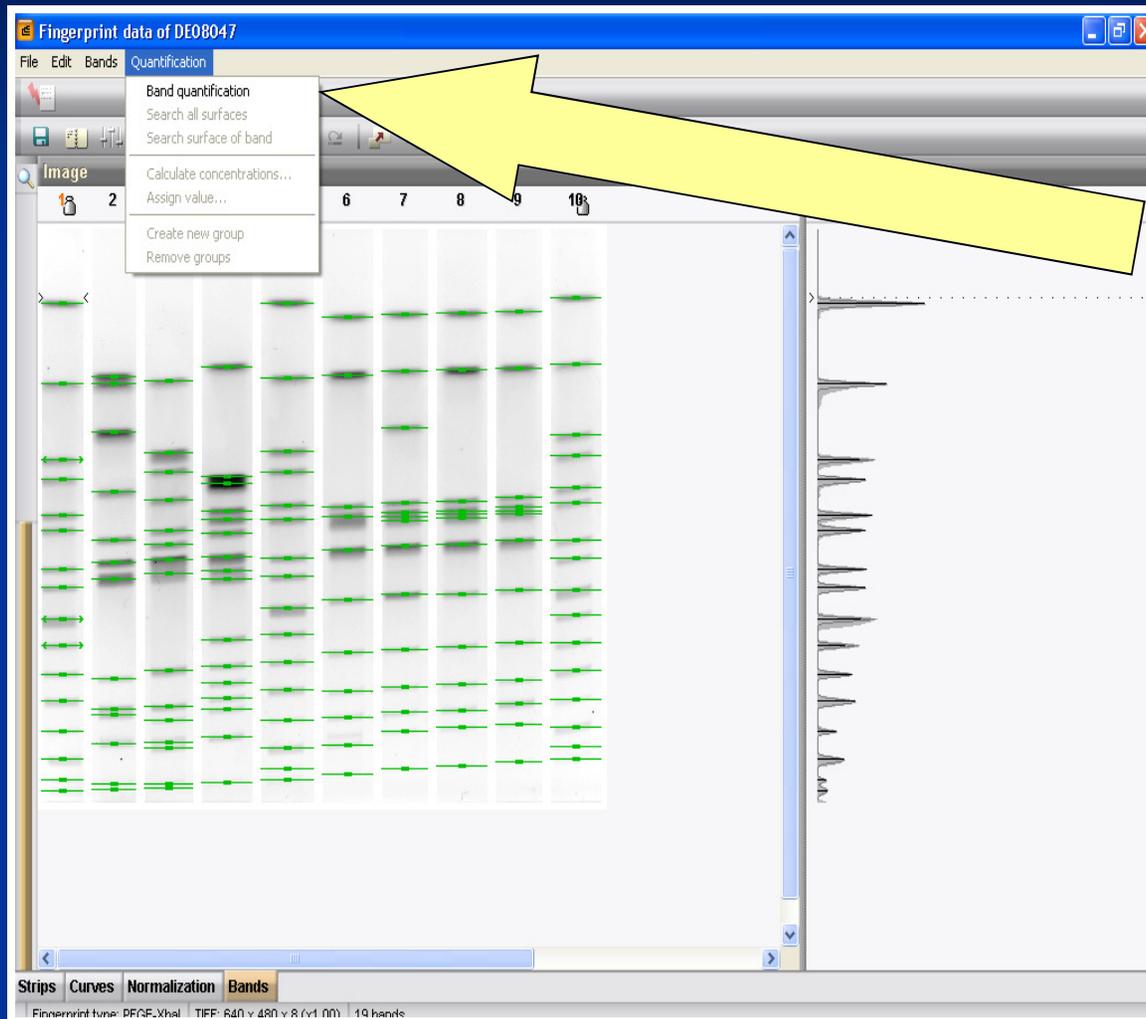


Analysis Step 4: Bands



Click "Search on all lanes" or "Search on this lane"

Analysis Step 4: Bands



**Click
Quantification →
“Band quantification”
to check band
assignments**

Quantification

Band quantification

Search all surfaces

Search surface of band

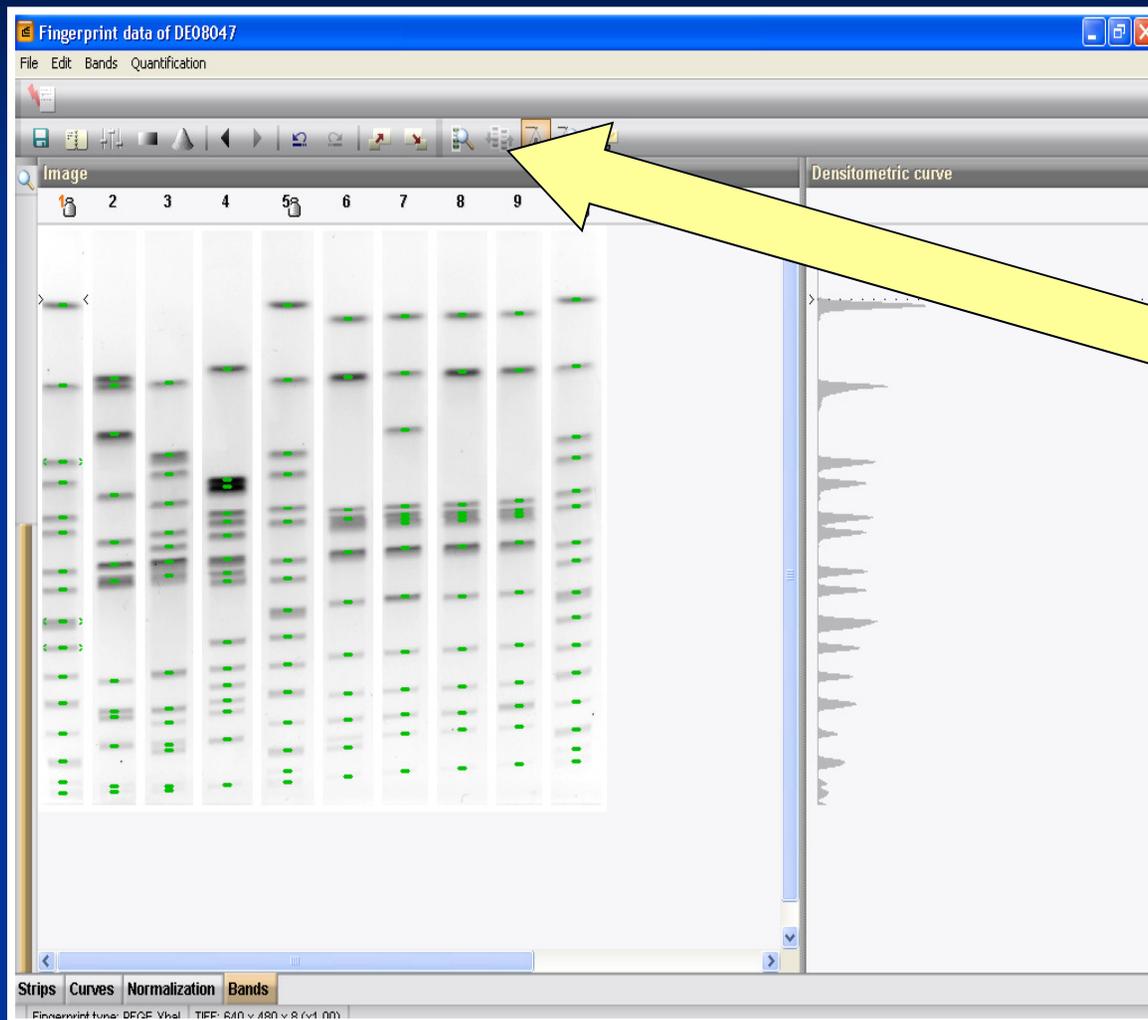
Calculate concentrations...

Assign value...

Create new group

Remove groups

Analysis Step 4: Bands

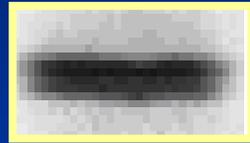
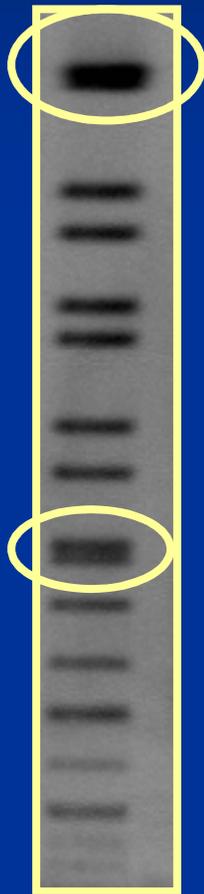


If "Auto search bands" was used make sure to toggle back and forth using the "Show normalized view" icon 

Add or delete bands where needed by selecting the band and pressing the ENTER or DELETE keys

Analysis Step 4: Bands

Refer to SOP "PND04 Gel Analysis Guidelines" for marking bands



If there is an indentation, then it's marked as a doublet



If there's a difference in color (light/dark can be resolved), then it's marked as a doublet

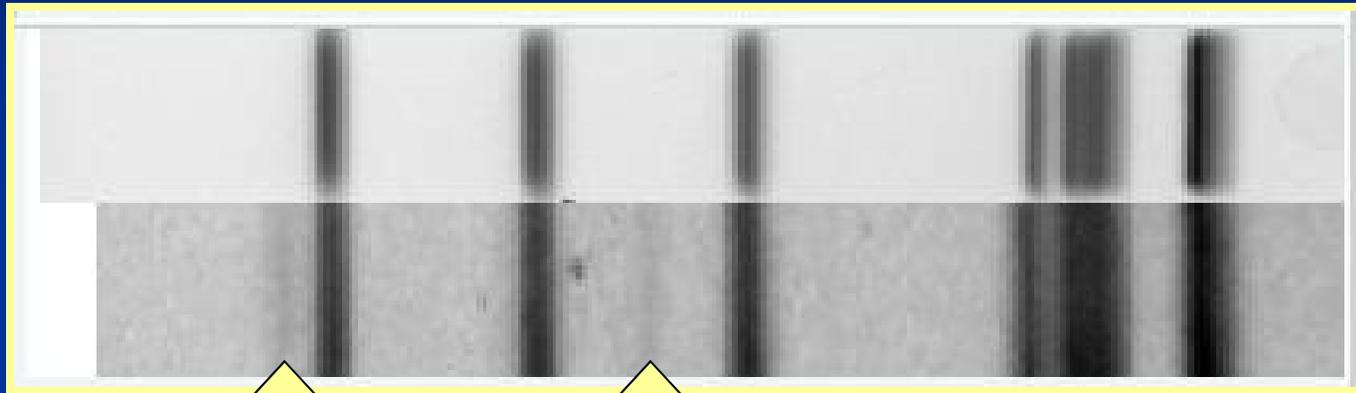


If there is clear separation, then it's marked as a doublet



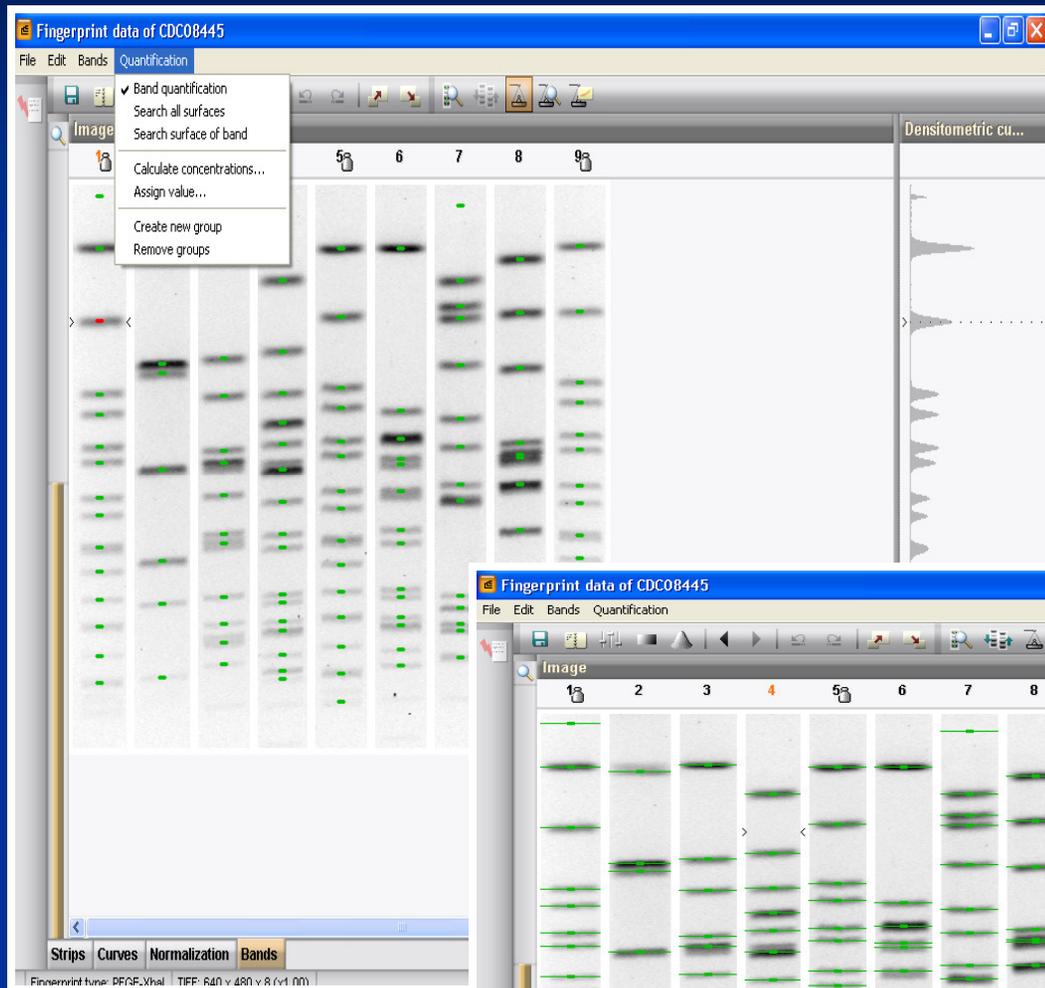
If none of the above cases hold true, then it's marked as a singlet

Analysis Step 4: Bands



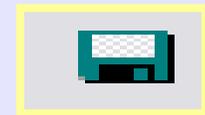
- Ghost bands should not be marked
- The isolate should be rerun

Analysis Step 4: Bands

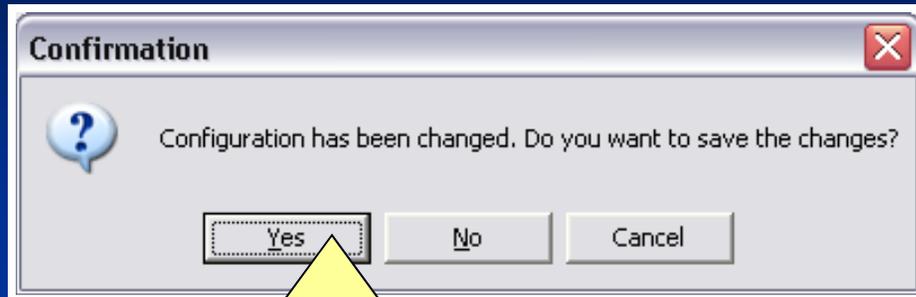


To return to showing full band marks Click Quantification → “Band quantification”

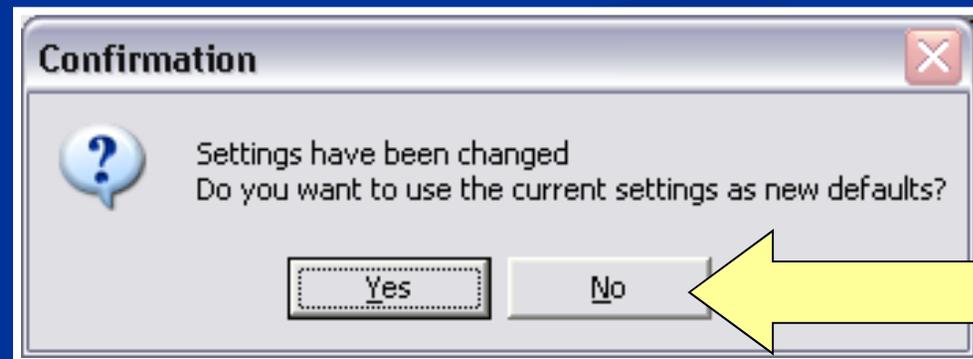
Save work once all bands are marked correctly



Analysis Step 4: Bands



Click "Yes" to save changes



Click "No" to preserve default settings

Tips for Analysis

- Use a printout of your TIFF to help identify bands
- Use the zoom (in/out) buttons for ease of viewing bands
- To give better control for band placement on the gel, de-select “**snap to peaks**” option from “**Edit**” menu, or hold down the <Tab> key while dragging the mouse within the gel strip
- When in doubt, mark bands MANUALLY
- Remember to refer to SOP “PND04 Gel Analysis Guidelines”

Link Lanes to Database Entries

If the gel contains lanes restricted with multiple enzymes, the fingerprint type for those lanes should be changed before linking

The screenshot shows a software window titled 'Fingerprint file 'CDC10008_Demo''. It has a menu bar with 'File', 'Database', 'PulseNet', and 'Window'. Below the menu bar is a toolbar with various icons. The main area is divided into two panes: 'Fingerprint information' and 'Entry information'. The 'Fingerprint information' pane contains a table with 10 rows and 2 columns: 'Nr.' and 'Experiment'. The 'Entry information' pane contains a table with 6 columns: 'Index', 'Key', 'LabID', and 'SourceCoun...'. A context menu is open over the table in the 'Entry information' pane, listing several options. A yellow arrow points from the bottom text box to the 'Change fingerprint type of lane...' option in the context menu.

Nr.	Experiment
1	PFGE-Xbal [H9812Sal]
2	PFGE-Xbal [H9812Sal]
3	PFGE-Xbal [H9812Sal]
4	PFGE-Xbal [H9812Sal]
5	PFGE-Xbal [H9812Sal]
6	PFGE-Xbal [H9812Sal]
7	PFGE-Xbal [H9812Sal]
8	PFGE-Xbal [H9812Sal]
9	PFGE-Xbal [H9812Sal]
10	PFGE-Xbal [H9812Sal]

Index	Key	LabID	SourceCoun...

- Open entry...
- Select/unselect entry
- Add lane to database
- Add all lanes to database
- Link lane...
- Remove link
- Change fingerprint type of lane...

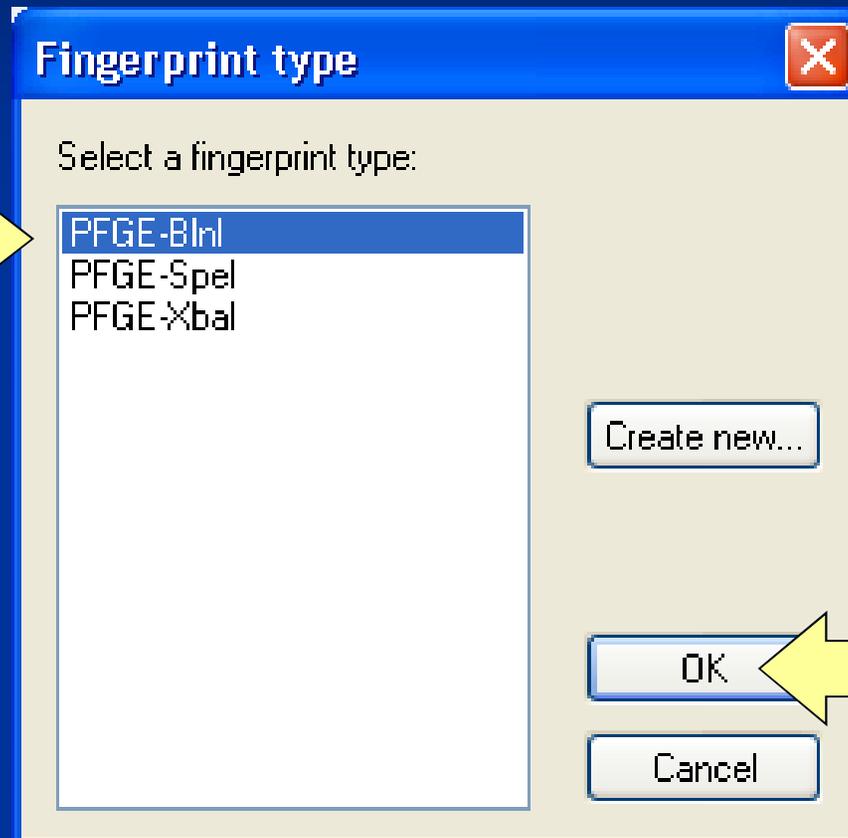
A close-up of the context menu options, showing the following items:

- Open entry...
- Select/unselect entry
- Add lane to database
- Add all lanes to database
- Link lane...
- Remove link
- Change fingerprint type of lane...

The 'Change fingerprint type of lane...' option is highlighted in grey.

Right-click on the lane and select
“Change fingerprint type of lane”

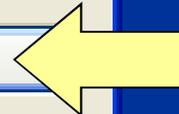
Link Lanes to Database Entries



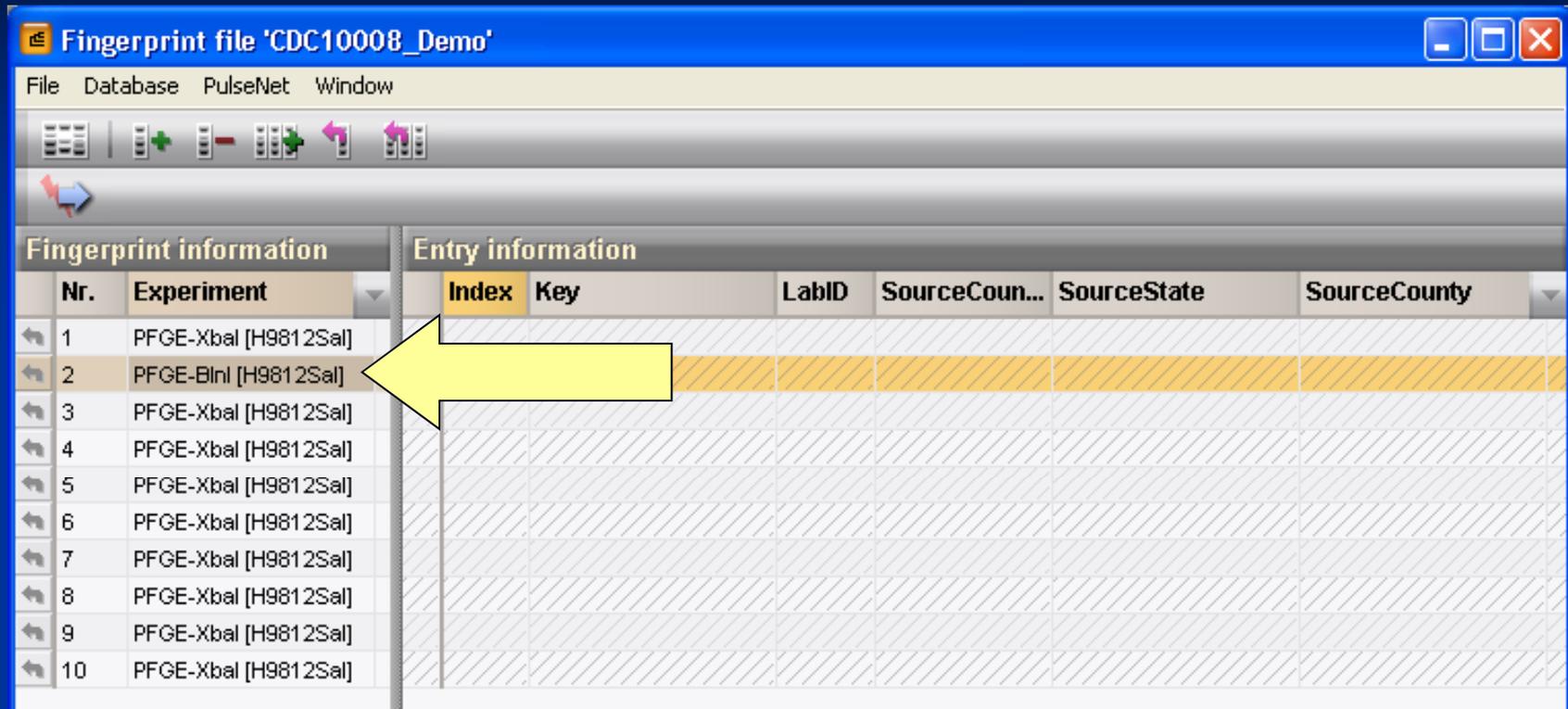
**Choose the
fingerprint
type**



Click "OK"



Link Lanes to Database Entries

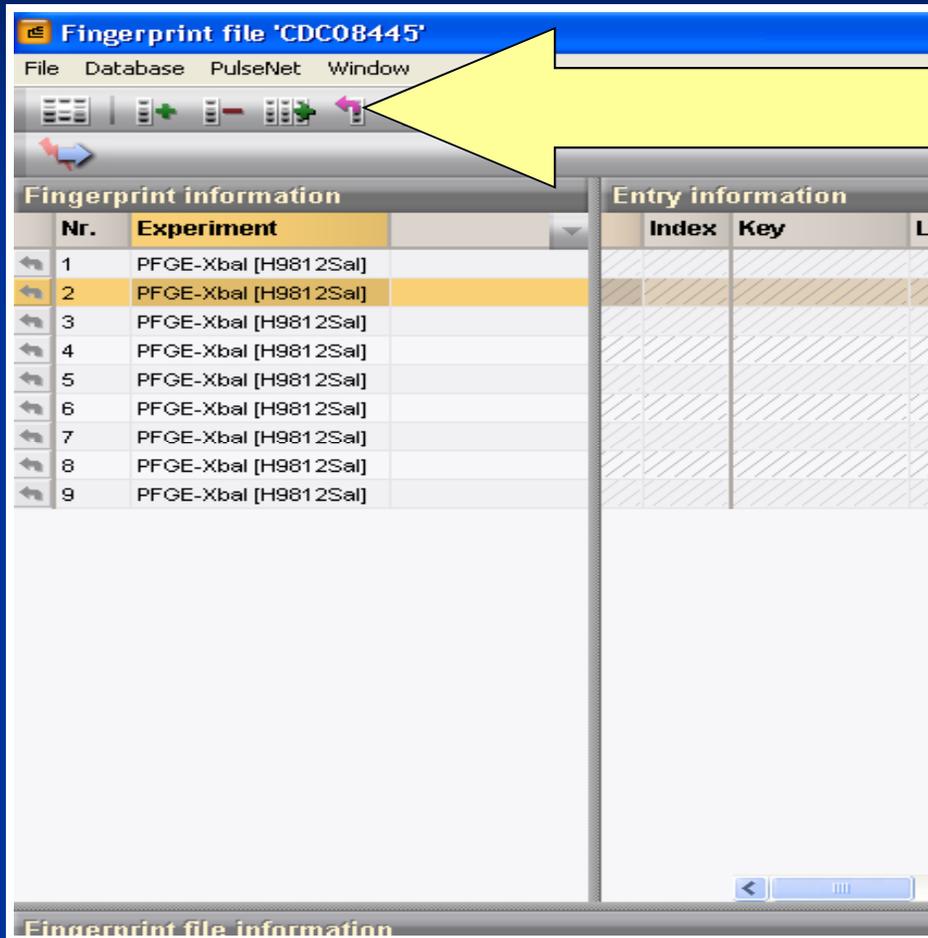


The screenshot shows a software window titled "Fingerprint file 'CDC10008_Demo'". The window has a menu bar with "File", "Database", "PulseNet", and "Window". Below the menu bar is a toolbar with various icons. The main area is divided into two panes: "Fingerprint information" and "Entry information". The "Fingerprint information" pane contains a table with 10 rows. The "Entry information" pane contains a table with columns: "Index", "Key", "LabID", "SourceCoun...", "SourceState", and "SourceCounty". A yellow arrow points to the second row of the "Fingerprint information" table, which has a yellow background.

Nr.	Experiment
1	PFGE-Xbal [H9812Sal]
2	PFGE-BlnI [H9812Sal]
3	PFGE-Xbal [H9812Sal]
4	PFGE-Xbal [H9812Sal]
5	PFGE-Xbal [H9812Sal]
6	PFGE-Xbal [H9812Sal]
7	PFGE-Xbal [H9812Sal]
8	PFGE-Xbal [H9812Sal]
9	PFGE-Xbal [H9812Sal]
10	PFGE-Xbal [H9812Sal]

Lane 2 now has BlnI as the enzyme used during restriction

Link Lanes to Database Entries



Select the lane and click “Link lane to database entry”



NOTE: Do not link standard lanes

Link Lanes to Database Entries



Link lane

Enter new key

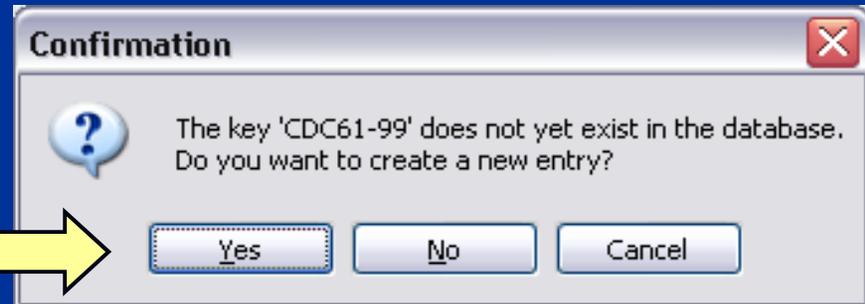
CDC 61-99

OK

Cancel

Enter the isolate number or key and click "OK"

Since we are creating a new entry, select "Yes"



Confirmation

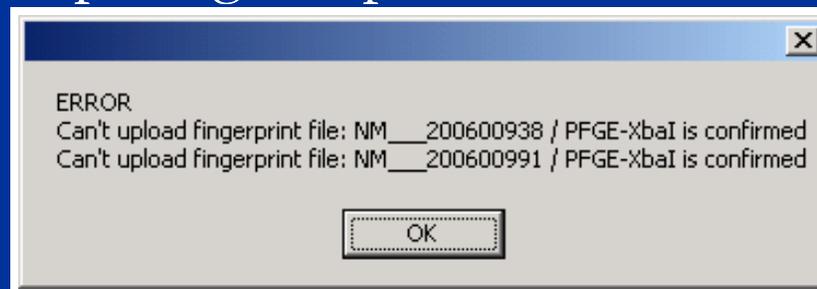
The key 'CDC61-99' does not yet exist in the database. Do you want to create a new entry?

Yes No Cancel

Continue for remaining lanes on the gel

Reminders: Duplicate Isolates

- Do not upload duplicate database entries
- If there are multiple picks from one culture, we recommend labeling them 123a, 123b, 123c, or in a similar fashion
 - Only upload those with different PFGE patterns
- When a repeat isolate is added into your database, BioNumerics automatically adds “/#” to the end of the key
- If you are re-uploading an unsatisfactory pattern, contact CDC before uploading so the previous pattern can be deleted beforehand and the better pattern confirmed
- If you upload a pattern that has already been named and confirmed, you will receive an error message. Contact CDC for assistance in completing this process.



Add Text Data for Isolates

Fingerprint file 'MF030627'

File Database PulseNet Window

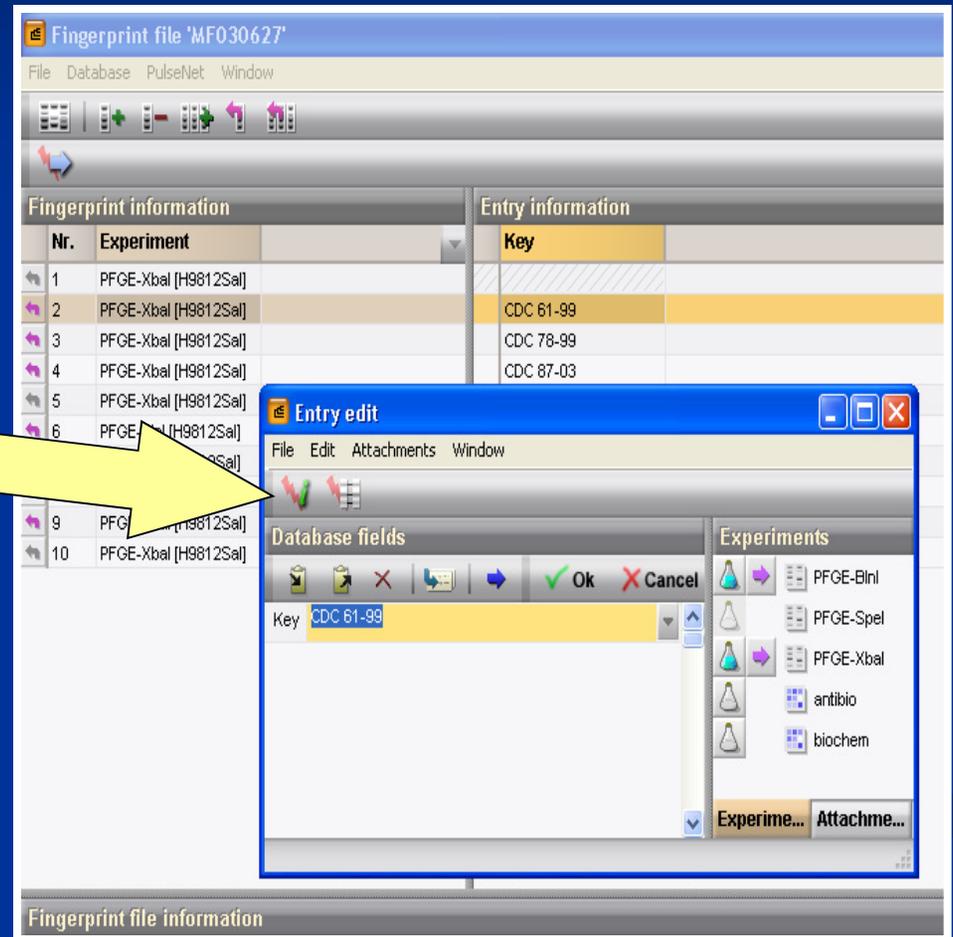
Link lane to database entry

Fingerprint information		Entry information
Nr.	Experiment	Key
1	PFGE-Xbal [H9812Sal]	
2	PFGE-Xbal [H9812Sal]	CDC 61-99
3	PFGE-Xbal [H9812Sal]	CDC 78-99
4	PFGE-Xbal [H9812Sal]	CDC 87-03
5	PFGE-Xbal [H9812Sal]	
6	PFGE-BlnI [H9812Sal]	CDC 61-99
7	PFGE-BlnI [H9812Sal]	CDC 78-99
8	PFGE-BlnI [H9812Sal]	CDC 87-03
9	PFGE-Xbal [H9812Sal]	CDC 98-03 (H9812)
10	PFGE-Xbal [H9812Sal]	

To enter demographic information, double-click on the key

Add Text Data for Isolates

Click on “Edit database fields”  to enter specific demographic information



Fingerprint file 'MF030627'

File Database PulseNet Window

Fingerprint information		Entry information	
Nr.	Experiment	Key	
1	PFGE-Xbal [H9812Sal]		
2	PFGE-Xbal [H9812Sal]	CDC 61-99	
3	PFGE-Xbal [H9812Sal]	CDC 78-99	
4	PFGE-Xbal [H9812Sal]	CDC 87-03	
5	PFGE-Xbal [H9812Sal]		
6	PFGE-Xbal [H9812Sal]		
9	PFGE-Xbal [H9812Sal]		
10	PFGE-Xbal [H9812Sal]		

Entry edit

File Edit Attachments Window

Database fields

Key: CDC 61-99

Experiments

- PFGE-BlnI
- PFGE-Spel
- PFGE-Xbal
- antibio
- biochem

Experime... Attachme...

Fingerprint file information

Add Text Data for Isolates

Entry properties - AL__AL-8009411-10

Source

City: Mobile
County:
State: AL
Country: USA

Serotype: Typhimurium
Outbreak:
Source Type: Human
Type Details:
Source Site: Stool

Patient

Age: 46 yr
Sex: FEMALE

Traveled To:
Exposure:
Isolate status:
Other State Isolate number:
CDC_ID:
NARMS-EB:
 FoodNet

Upload Date: 2010-03-10 / 2010-03-30

Isolate Date: Thursday, February 25, 2010
Receive Date: Tuesday, March 02, 2010
Phage type:
Antibiotics... Match with list
Biochemical...

Serotype information

Formula:
Subspecies:
O Group:
Change...

Use pull down menus as much as possible to prevent mistakes

Source

City: Mobile
County:
State: AL
Country: USA

Serotype: Typhimurium
Outbreak:
Source Type: Human
Type Details: Human
Source Site: Food
Traveled To:
Exposure:
Isolate status:
Other State Isolate number:
Patient

Age: 46 yr
Sex: FEMALE

Add Text Data: Character Data

Entry properties - CDC 61-99

Source

City:

County:

State:

Country:

Serotype: Typhimurium

Outbreak:

Source Type:

Type Details:

Source Site:

Traveled To:

Patterns

Xbal: MF030627,2

Blnl: MF030627,6

Patient

Age: yr mn dy

Sex:

Exposure:

Isolate status:

Other State Isolate number:

CDC_ID:

NARMS-EE

FoodNet

Upload Date:

Isolate Date: Tuesday, September 23, 2008

Receive Date: Tuesday, September 23, 2008

Phage type:

Serotype information

Formula:

Subspecies:

O Group:

Change...

Antibiotics... Match with list OK

Biochemical... Cancel

Character Data can also be added to the demographic information

Antibiotics... Match with list OK

Biochemical... Cancel

Add Text Data: Character Data

AMK	<input data-bbox="273 373 430 414" type="text" value="?"/>	CTRX	<input data-bbox="630 373 787 414" type="text" value="?"/>	LEVX	<input data-bbox="987 373 1144 414" type="text" value="?"/>
AMIKACIN		CEFTRIAXONE		LEVOFLOXACIN	
AMOX/CA	<input data-bbox="273 454 430 495" type="text" value="?"/>	CRIN	<input data-bbox="630 454 787 495" type="text" value="?"/>	NAL	<input data-bbox="987 454 1144 495" type="text" value="?"/>
AMOXICILLIN/CLAVULANIC ACID		CEPHALOTHIN or CEFALOTHIN		NALIDIXIC ACID	
AMPC	<input data-bbox="273 535 430 576" type="text" value="?"/>	CHL	<input data-bbox="630 535 787 576" type="text" value="?"/>	NIT	<input data-bbox="987 535 1144 576" type="text" value="?"/>
AMPICILLIN		CHLORAMPHENICOL		NITROFURANTOIN	
AMPI/SU	<input data-bbox="273 617 430 657" type="text" value="?"/>	CIPX	<input data-bbox="630 617 787 657" type="text" value="?"/>	NORX	<input data-bbox="987 617 1144 657" type="text" value="?"/>
AMPICILLIN W/ SULBACTAM		CIPROFLOXACIN		NORFLOXACIN	
AZI	<input data-bbox="273 698 430 738" type="text" value="?"/>	CLA	<input data-bbox="630 698 787 738" type="text" value="?"/>	OXAC	<input data-bbox="987 698 1144 738" type="text" value="?"/>
AZITHROMYCIN		CLARITHROMYCIN		OXACILLIN	
CCLO	<input data-bbox="273 779 430 820" type="text" value="?"/>	CLI	<input data-bbox="630 779 787 820" type="text" value="?"/>	PENG	<input data-bbox="987 779 1144 820" type="text" value="?"/>
CEFACLOR		CLINDAMYCIN		PENICILLIN or BENZYL PENICILLIN	
CFAZ	<input data-bbox="273 860 430 901" type="text" value="?"/>	DPT	<input data-bbox="630 860 787 901" type="text" value="?"/>	PIPC	<input data-bbox="987 860 1144 901" type="text" value="?"/>
CEFAZOLIN or CEPHAZOLIN		DAPTOMYCIN		PIPERACILLIN	
CTAX	<input data-bbox="273 941 430 982" type="text" value="?"/>	ETH	<input data-bbox="630 941 787 982" type="text" value="?"/>	PIPC/TZ	<input data-bbox="987 941 1144 982" type="text" value="?"/>
CEFOTAXIME or CEFOTAXIM		ERYTHROMYCIN		PIPERACILLIN/AZOBACTAM	
CFOX	<input data-bbox="273 1023 430 1063" type="text" value="?"/>	GEN	<input data-bbox="630 1023 787 1063" type="text" value="?"/>	RIF	<input data-bbox="987 1023 1144 1063" type="text" value="?"/>
CEFOXITIN		GENTAMICIN		RIFAMPIN or RIFAMPICIN	
CPOO	<input data-bbox="273 1104 430 1144" type="text" value="?"/>	IMP	<input data-bbox="630 1104 787 1144" type="text" value="?"/>	STR	<input data-bbox="987 1104 1144 1144" type="text" value="?"/>
CEFPODOXIME or CEFPODOXIM		IMPENEM		STREPTOMYCIN	
CTAZ	<input data-bbox="273 1185 430 1226" type="text" value="?"/>	KAN	<input data-bbox="630 1185 787 1226" type="text" value="?"/>	SSS	<input data-bbox="987 1185 1144 1226" type="text" value="?"/>
CEFTAZIDIME or CEFTAZIDIM		KANAMYCIN		SULFONAMIDES	

Use pull down menus to enter appropriate data

AMK	<input data-bbox="1554 787 1753 836" type="text" value="?"/>
AMIKACIN	
AMOX/CA	<input data-bbox="1554 893 1753 941" type="text" value="?"/>
AMOXICILLIN/CLAVULANIC ACID	
AMPC	<input data-bbox="1554 998 1753 1047" type="text" value="?"/>
AMPICILLIN	<input data-bbox="1554 1055 1753 1104" type="text" value="?"/> Resistant Intermediate Susceptible
AMPI/SU	
AMPICILLIN	
AZI	<input data-bbox="1554 1209 1753 1258" type="text" value="?"/>
AZITHROMYCIN	

Add Text Data for Isolates

**Check info:
make note of
the format of
some
information**

Entry properties - CDC 61-99

Source

City: Atlanta
County: Dekalb
State: GA
Country: USA

Serotype: Typhimurium

Outbreak: 0706PAJPX-1

Source Type: Food

Type Details: Chicken

Source Site: CSF

Traveled To: Jamaica

Exposure: Restaurant

Isolate status: Confirmed

Other State Isolate number:

CDC_ID:

NARMS-EB
 FoodNet

Upload Date:

Isolate Date: Friday, October 10, 2008
Receive Date: Thursday, October 16, 2008
Phage type:

Patterns

Xbal	Blnl
Mf030319,3	Mf030319,7
mf03320S,3	mf03320S,7
CDC08445,2	

Antibiotics... Match with list OK Cancel
Biochemical...

Serotype information

Formula:
Subspecies:
O Group:

Change...

Click "OK"

Add Text Data for Isolates

Entry edit

File Edit Attachments Window

Database fields

Key CDC 61-99

LabID

SourceCountry

SourceState GA

SourceCountry Dekalb

SourceCity Atlanta

SourceSite CSF

SourceType Food

OtherStatelsolate

PatientAge 12

PatientSex MALE

IsolatDate 2008-10-10

ReceivedDate 2008-10-16

UploadDate

UploadModifiedDate

AntigenForm

Subspecies

Experiments

PFGE-Bln

PFGE-Spel

PFGE-Xbal

antibio

biochem

Age Format:

- Enter age using the “Entry properties” screen
- Enter days if less than one month and enter months if less than one year
- No birth dates

Date format: YYYY-MM-DD (IsolatDate, ReceivedDate, etc.)

Ex: 2011-03-04

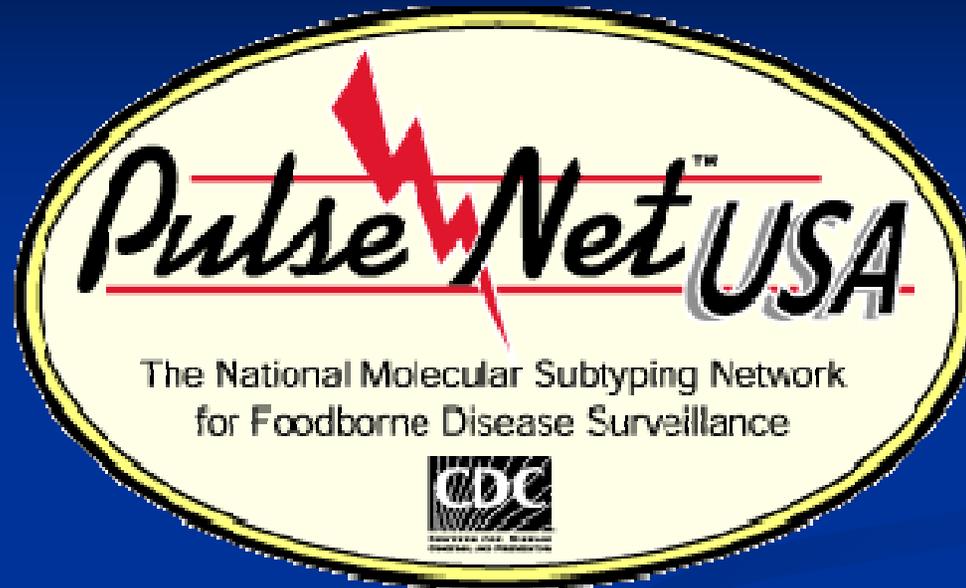
Reminders: Text Data for Isolates

- Provide as much information as possible
 - Species/Serotype: do not leave this field blank (use serotype pending, undetermined, isolate to CDC) pattern name cannot be “confirmed” until this is entered
 - Source State: extremely important for initial investigation
 - Source City, County if known
 - Source Type: **must** be one of these five: Animal, Human, Environment or Environmental, Food, Unknown
 - Source Site: i.e. stool, urine, blood, etc.
 - Patient Age and Sex
 - Dates: Isolation and Received
 - Type Details: use to provide more information about source site
- If importing, remember to check all data for accuracy

Demo



Questions?



Thank you for your attention
The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention

Exercise 1