

# Importing & Exporting Data in BioNumerics



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# Overview

- Import Demographic Information
  - Create ODBC Link
  - Download Data
- Export Data into Excel

# Import Demographic Information

- What can be imported?
  - Data located in Microsoft Excel or Microsoft Access
  - Database fields (ex. patient age, source site)
  - Character data (antimicrobial profiles—not covered in this presentation)
  - Sequence data (not covered in this presentation)

# Import Demographic Information

Isolate Number	Serotype	Country	State	County	SourceSite	SourceType	PatientAge	PatientSex	IsolatDat
07E01714	Infantis	USA	PA	Philadelphia	Stool	Human	25	MALE	9/6/2007
07E01715	Saintpaul	USA	PA	Dauphin	Urine	Human	63	FEMALE	9/6/2007
07E01716	Agona	USA	PA	Lycoming	Stool	Human	37	FEMALE	9/6/2007
07E01718	Sandiego	USA	PA	Philadelphia	Stool	Human	25	FEMALE	9/4/2007
07E01719	Montevideo	USA	PA	Cumberland	Stool	Human	40	FEMALE	9/4/2007
07E01720	Typhimurium	USA	PA	Lancaster	Stool	Human	42	FEMALE	9/6/2007
07E01721	Typhimurium var. O 5 - (Copenhagen)	USA	PA	Berks	Stool	Human	42	MALE	9/6/2007
07E01722	Montevideo	USA	PA	Philadelphia	ankle bone	Human	33	MALE	8/29/2007
07E01723	Litchfield	USA	PA	Philadelphia	Stool	Human	17	FEMALE	9/4/2007
07E01724	Typhi	USA	PA	Lancaster	Blood	Human	19	MALE	9/3/2007

First row of Excel should contain database field names (they do not have to be the same as those found in BioNumerics)

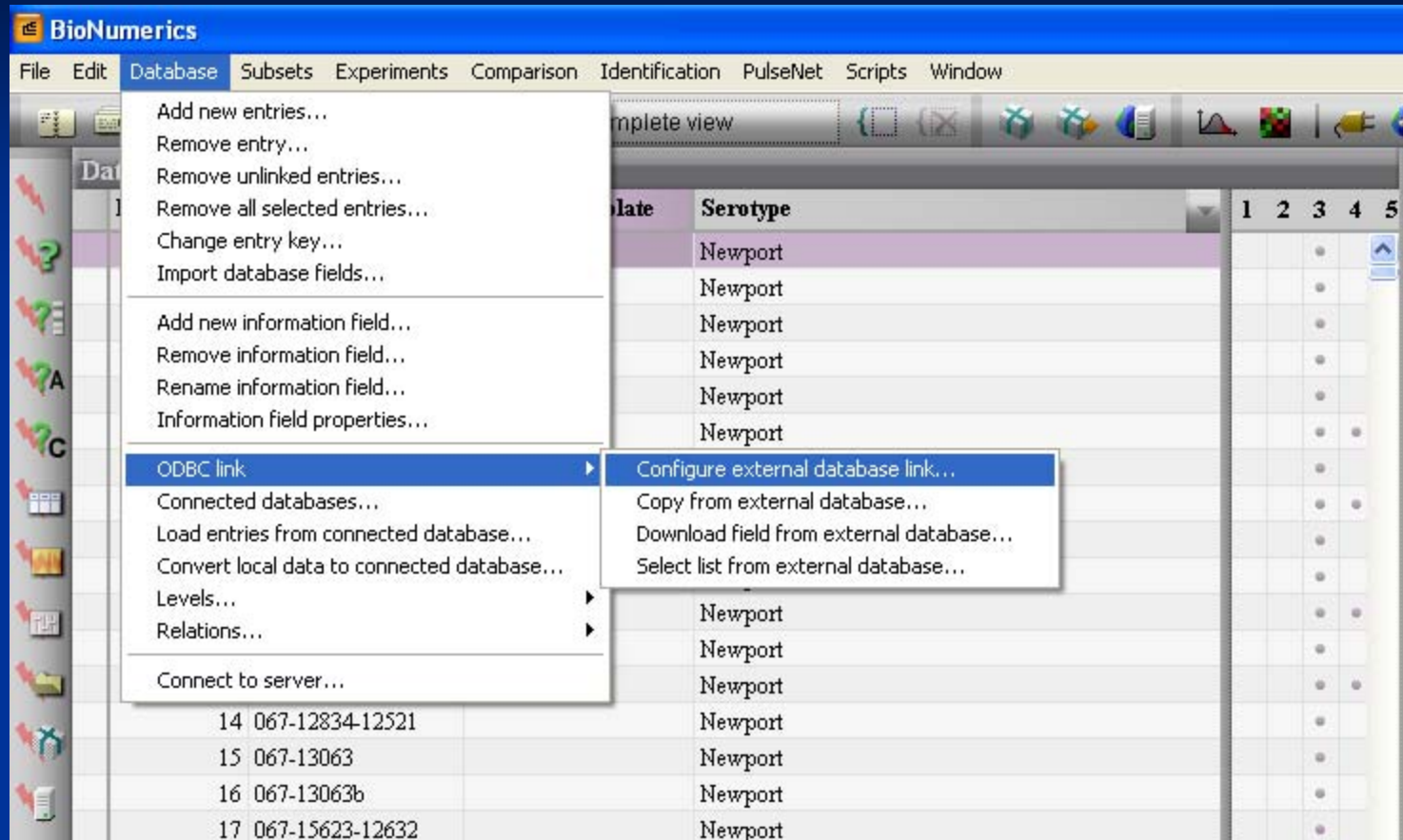
There must be a column containing isolate key numbers

Open the Excel file and note the name of the sheet (default: Sheet1)

# Overview

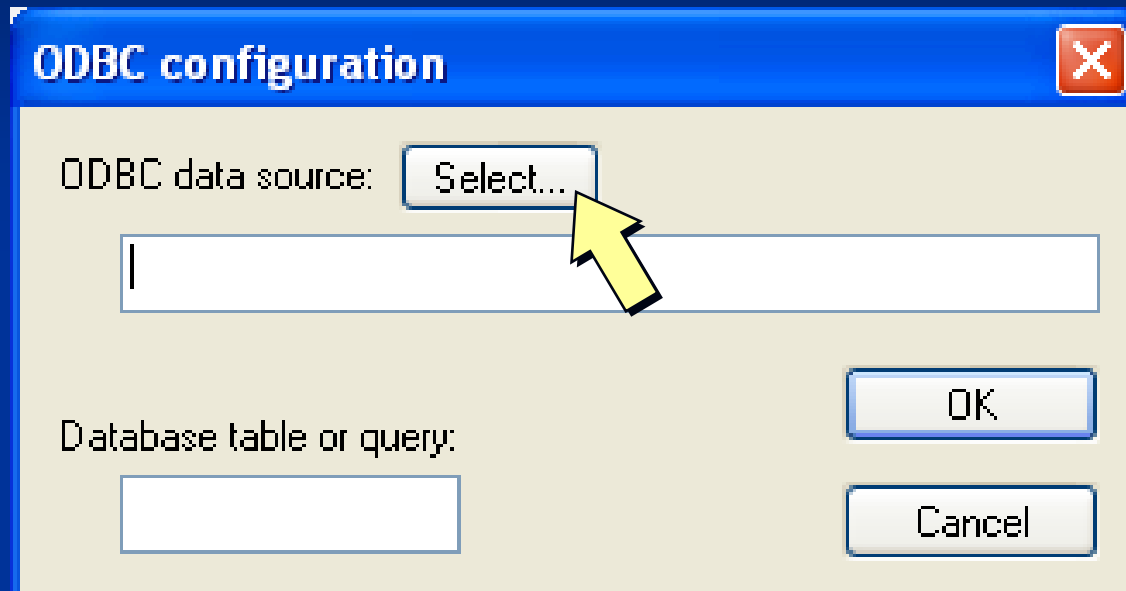
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# Import: Create ODBC Link



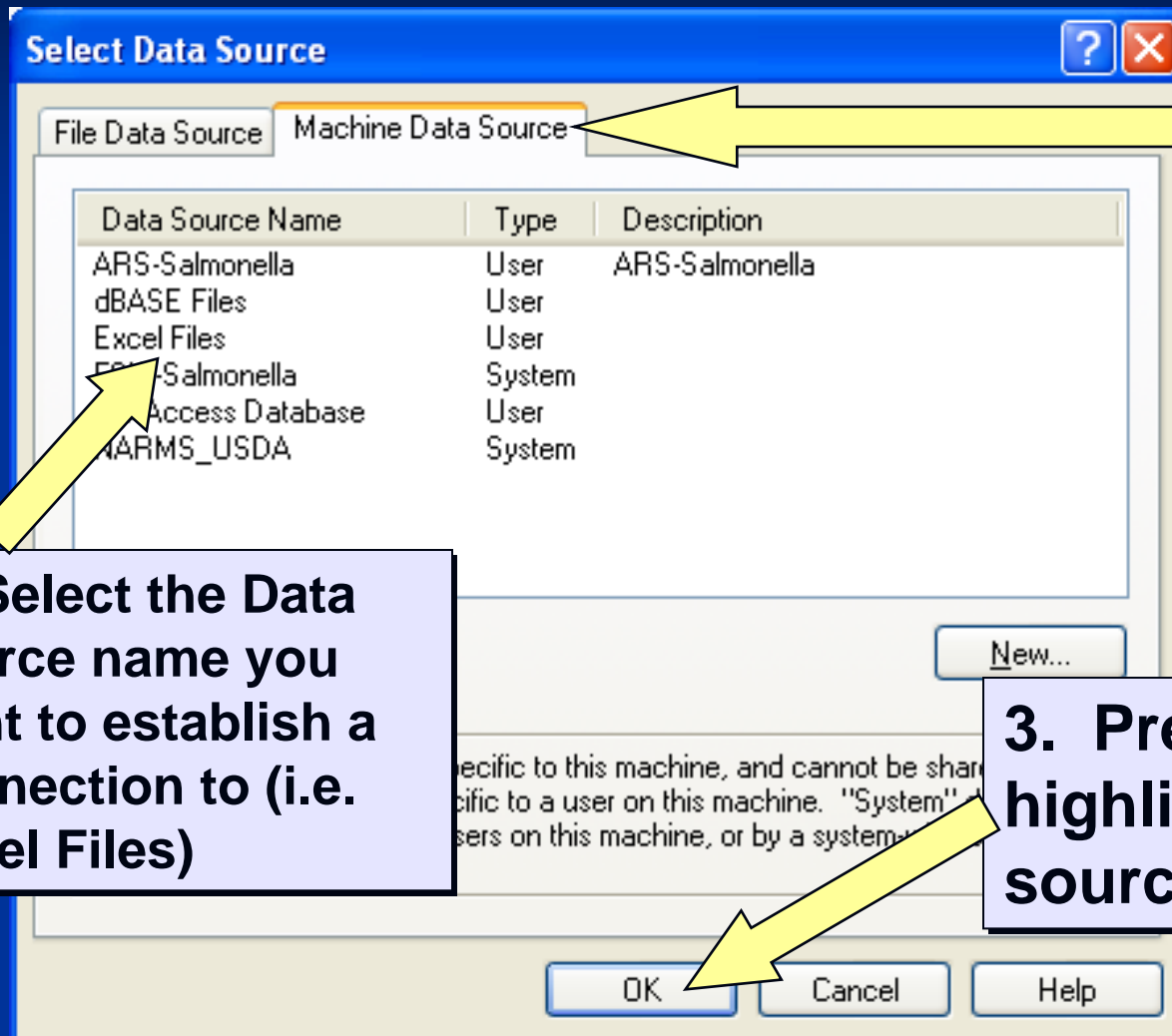
**In the main screen of BioNumerics, select Database → ODBC link → Configure external database link...**

# Import: Create ODBC Link



**Press "Select" to bring up the Windows ODBC configuration wizard**

# Import: Create ODBC Link



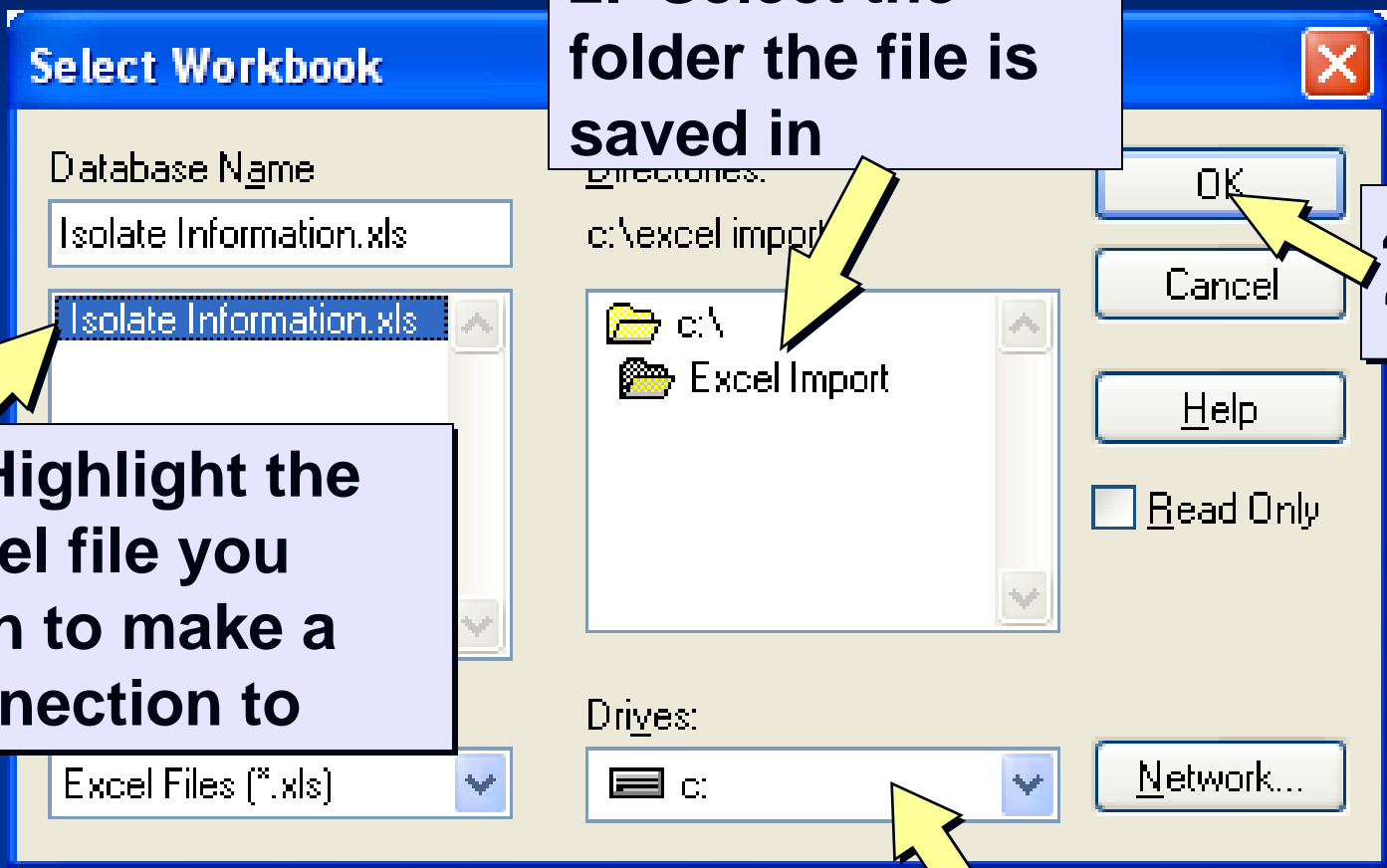
**1. Select the Machine Data Source tab**

**2. Select the Data source name you want to establish a connection to (i.e. Excel Files)**

**3. Press "OK" after highlighting the data source name**



# Import: Create ODBC Link



**2. Select the folder the file is saved in**

**4. Press "OK"**

**3. Highlight the Excel file you wish to make a connection to**

**1. Navigate to the appropriate drive (i.e. desktop)**

# Import: Create ODBC Link

ODBC configuration

ODBC data source:

DSN=Excel Files;DBQ=C:\Excel Import\Isolate Information.

Database table or query:

2. Press  
"OK"

1. Enter the name of the sheet with a  
'\$' sign added (ex. sheet1\$ )

# Import: Create ODBC Link

**ODBC database import**

BioNumerics	External database
Key	Isolate Number
LabID	
PatientAge	Patient Age
PatientSex	
UploadDate	
Serotype	
SourceType	
SourceSite	

Link      Ok

Unlink      Cancel

**1. Select a BioNumerics field in the left column and the corresponding Excel field in the right column**

**2. Press "Link" when both fields are highlighted**

# Import: Create ODBC Link

**ODBC database import**

BioNumerics	External database
Key	Isolate Number
LabID	
PatientAge	Patient Age
PatientSex	
UploadDate	
Serotype	Serotype
SourceType	
SourceSite	

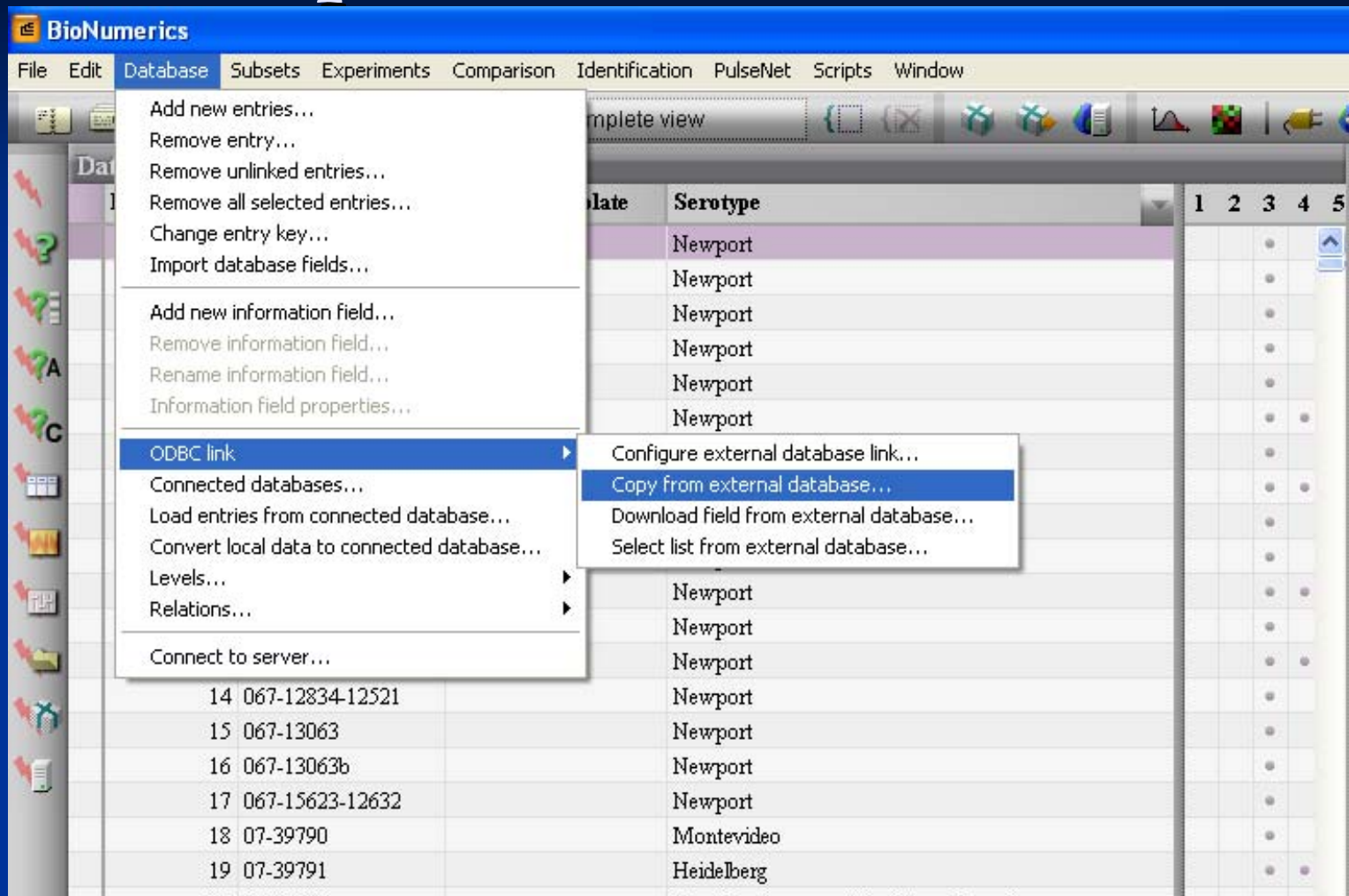
Link      Unlink      Ok      Cancel

**Press "OK"**  
after all  
appropriate  
fields are  
linked

# Overview

- Import Demographic Information
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# Import: Download Data

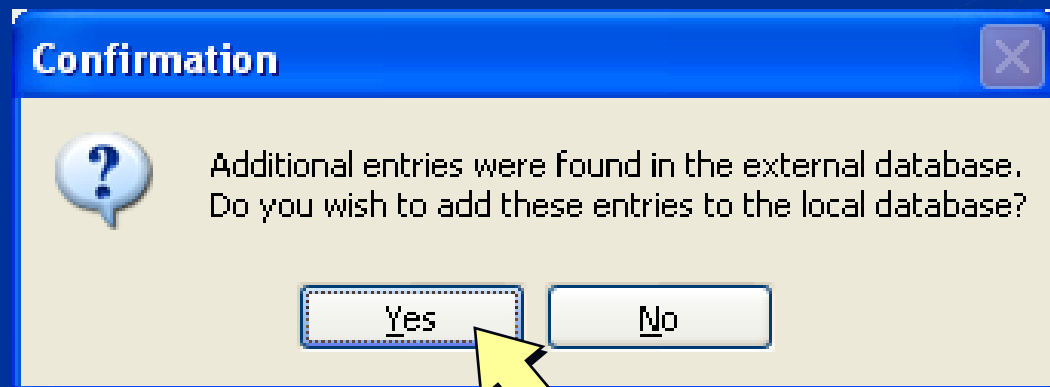
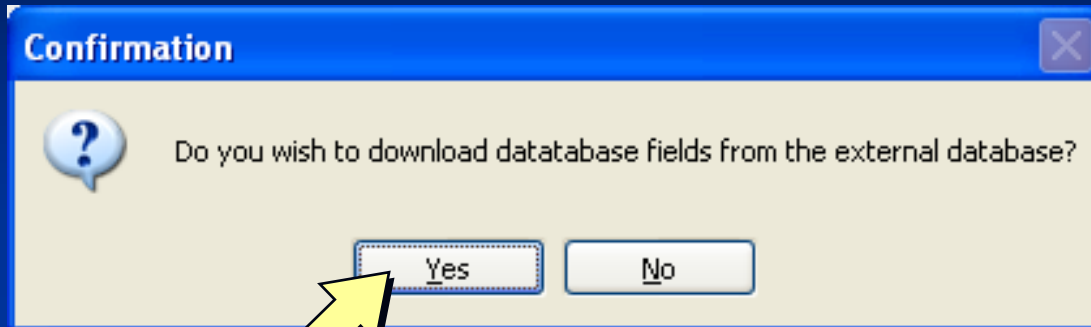


The screenshot shows the BioNumerics software interface. The 'Database' menu is open, and the 'ODBC link' option is selected, which has opened a sub-menu. In this sub-menu, the 'Copy from external database...' option is highlighted. The background shows a data table with columns for 'Date' and 'Serotype', and a grid of data points.

Date	Serotype	1	2	3	4	5
	Newport					
	Newport					
	Newport					
	Newport					
	Newport					
	Newport					
	Newport					
14	067-12834-12521					
15	067-13063					
16	067-13063b					
17	067-15623-12632					
18	07-39790					
19	07-39791					
20	07-49888					


**Select Database → ODBC link → Copy from external database...**

# Import: Download Data



**Now the data from Excel is present in your BioNumerics database!**

# Import Data into BioNumerics

- Link imported isolates to the appropriate lane on the analyzed gel
- Check for spelling errors for serotype and demographic information
- Click on  to make sure:
  - No extra spaces
  - No spelling errors
  - Information matches the pull-down menus
  - Information is in the proper format
    - i.e. YYYY-MM-DD date format and 00:00:00 does NOT appear after the date
- Download can be performed each time the excel file is modified



# Overview

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# Export Data into Excel

- Manually select isolates or select isolates by query (i.e., isolates that are in cluster 0901NYJJP-1) that you want to export into Microsoft Excel

The screenshot shows the 'nerics' software interface. The main window displays a table of database entries with columns for Index, Key, Serotype, LabID, and SourceCountry. An 'Entry search' dialog box is open, showing a search query for '0901NYJJP-1' in the 'Outbreak' field. A yellow arrow points to this field. The dialog box also includes fields for SourceCountry, SourceCity, Traveled\_To, Exposure, Phagetype, PatientAge, PatientSex, OGroup, PFGE-Blnl-status, cdc\_id, Status, NARMS-EB, FoodNet, PFGE-XbaI-pattern, PFGE-Spel-status, and PFGE-XbaI-status. There are checkboxes for 'Search in list', 'Negative search', and 'Case sensitive', and buttons for 'Clear', 'Search', and 'Cancel'.

Index	Key	Serotype	LabID	SourceCountry
1	ARS_056-83515	Newport		
2	ARS_067-06257	Newport		
3	ARS_067-07331-12478	Newport		
4	ARS_067-07331-12502	Newport		
5	ARS_067-07865-12535	Newport		
6	ARS_067-07865-12558	Newport		
7	ARS_067-10215-12479	Newport		
8	ARS_067-10842-1823	Newport		
9	ARS_067-11220	Newport		
10	ARS_067-11232-12504	Newport		
11	ARS_067-11269	Newport		
12	ARS_067-12228	Newport		
13	ARS_067-12832-12529	Newport		
14	ARS_067-12834-12521	Newport		
15	ARS_067-13063	Newport		
16	ARS_067-13063b	Newport		
17	ARS_067-15623-12632	Newport		
18	ARS_100060	Gaminara		
19	ARS_100093	Braenderup		
20	ARS_100195	Uganda		
21	ARS_100220	Newport		
22	ARS_100225	Anatum		
23	ARS_10037	Enteritidis		
24	ARS_1005	Untypable		
25	ARS_1006	IV 11 z4,z23:- (Pe		
26	ARS_10062	Heidelberg		
27	ARS_10066	Typhimurium var		
28	ARS_10067	Typhimurium		
29	ARS_10077-NVSL04	Brandenburg		
30	ARS_100929A	Miami		

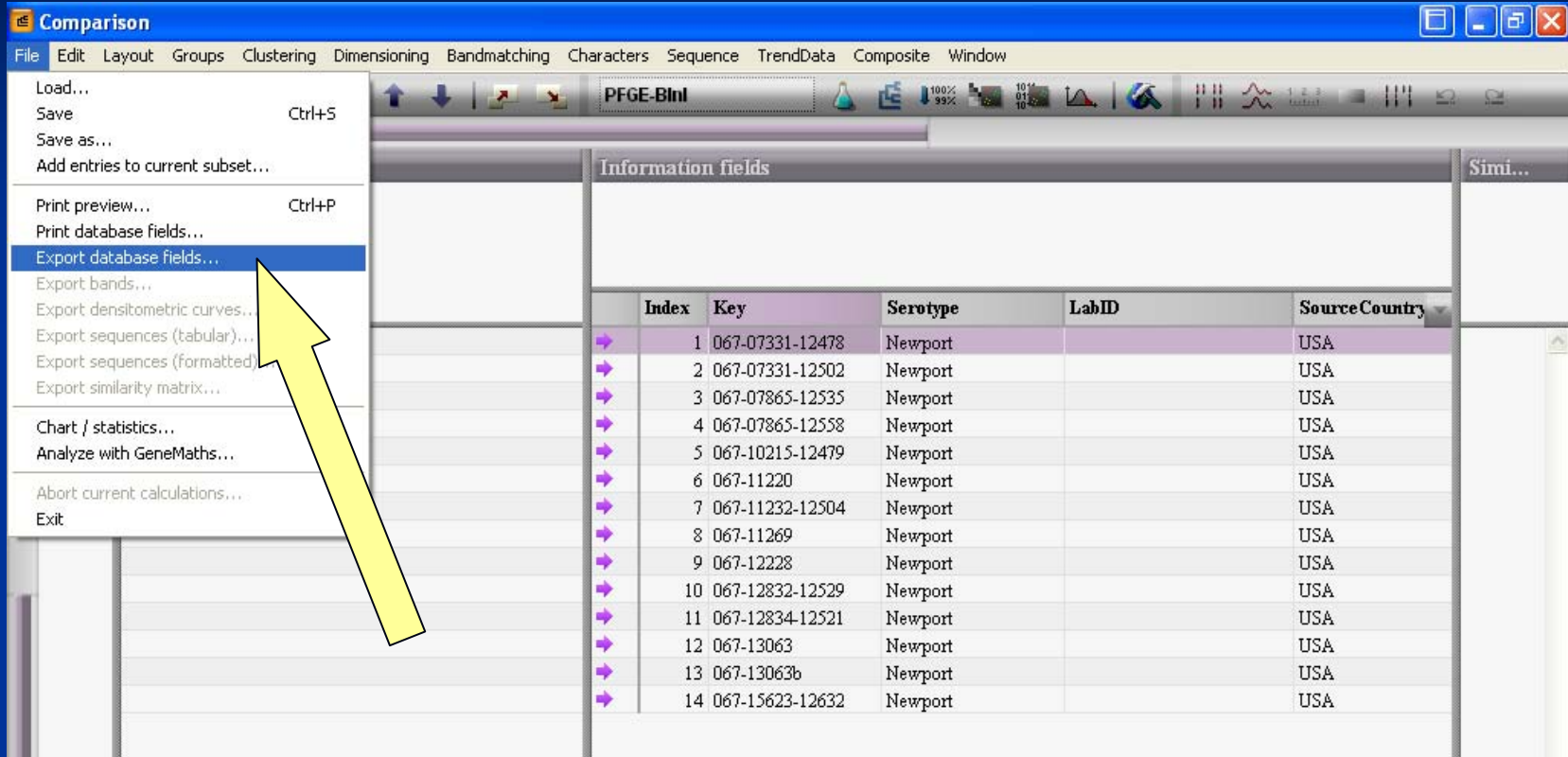
# Create New Comparison

The screenshot shows the BioNumerics software interface. The 'Comparison' menu is open, and the 'Create new comparison' option is highlighted in blue. A yellow arrow points from a text box to this option. The background shows a table of database entries with columns for Index, Key, and Source Country.

Index	Key	Source Country
1	067-07331-12478	USA
2	067-07331-12502	USA
3	067-07865-12535	USA
4	067-07865-12558	USA
5	067-10215-12479	USA
6	067-11220	USA
7	067-11232-12504	USA
8	067-11269	USA
9	067-12228	USA
10	067-12832-12529	USA
11	067-12834-12531	USA

**Go to “Create new comparison” under the “Comparison” menu**

# Export Data into Excel



The screenshot shows the BioNumerics software interface in the 'Comparison' window. The 'File' menu is open, and the 'Export database fields...' option is highlighted. A yellow arrow points to this option. The main window displays a table of data with the following columns: Index, Key, Serotype, LabID, and Source Country. The data is as follows:

Index	Key	Serotype	LabID	Source Country
1	067-07331-12478	Newport		USA
2	067-07331-12502	Newport		USA
3	067-07865-12535	Newport		USA
4	067-07865-12558	Newport		USA
5	067-10215-12479	Newport		USA
6	067-11220	Newport		USA
7	067-11232-12504	Newport		USA
8	067-11269	Newport		USA
9	067-12228	Newport		USA
10	067-12832-12529	Newport		USA
11	067-12834-12521	Newport		USA
12	067-13063	Newport		USA
13	067-13063b	Newport		USA
14	067-15623-12632	Newport		USA

**In the comparison screen of BioNumerics, select File → Export database fields**

# Export Data into Excel

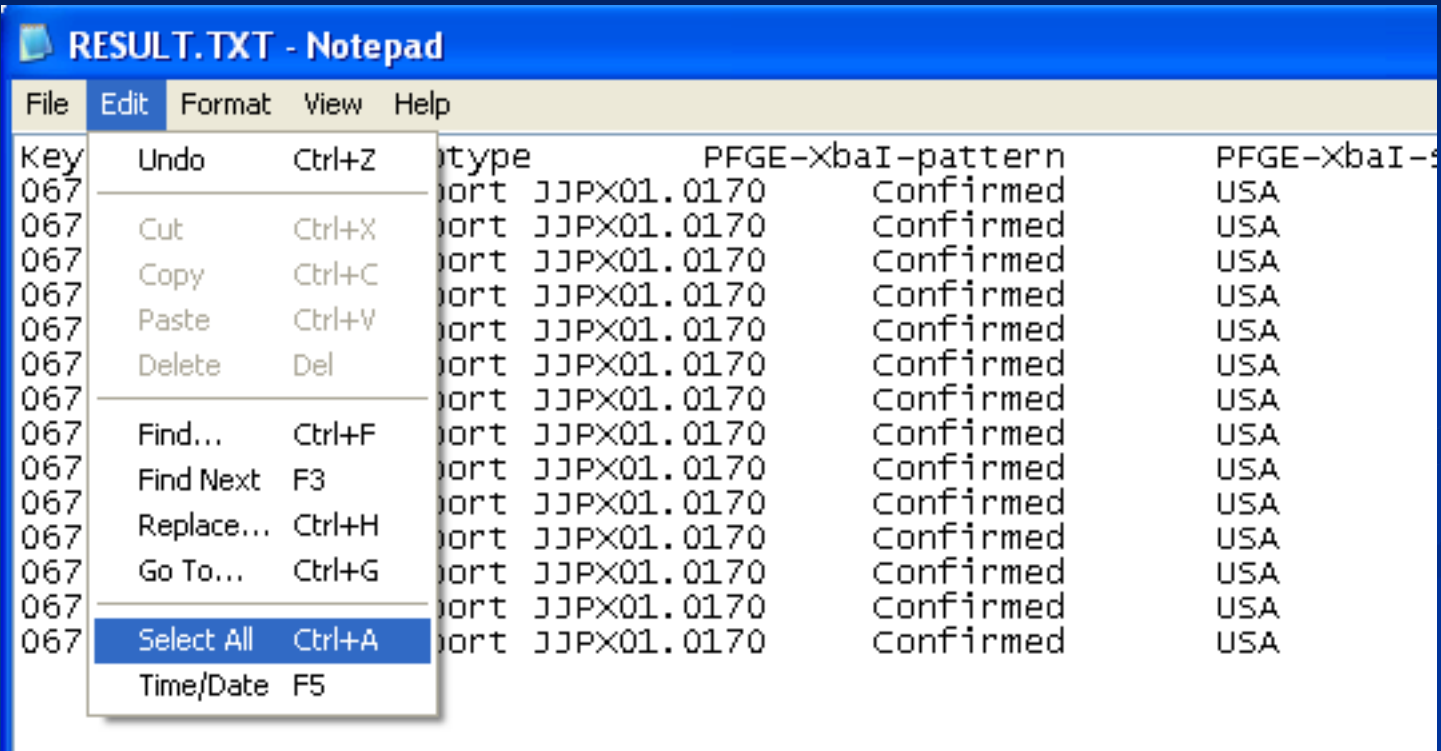
The screenshot shows a software window titled "Comparison" with a menu bar (File, Edit, Layout, Groups, Clustering, Dimensioning, Bandmatching, Characters, Sequence, TrendData, Composite, Window) and a toolbar. Below the toolbar are three panels: "Experiment data", "Information fields", and "Simi...". The "Information fields" panel contains a table with the following data:

Index	Key	Serotype	LabID	SourceCountry
1	067-07331-12478	Newport		USA
2	067-07331-12478	Newport		USA
3	067-07331-12478	Newport		USA
4	067-07331-12478	Newport		USA
5	067-07331-12478	Newport		USA
6	067-07331-12478	Newport		USA
7	067-07331-12478	Newport		USA
8	067-07331-12478	Newport		USA
9	067-07331-12478	Newport		USA
10	067-07331-12478	Newport		USA
11	067-07331-12478	Newport		USA
12	067-07331-12478	Newport		USA
13	067-07331-12478	Newport		USA
14	067-07331-12478	Newport		USA

A dialog box titled "Use tab-delimited fields?" is overlaid on the table. It contains a question mark icon and the text "Use tab-delimited fields?". There are two buttons: "Yes" and "No". A yellow arrow points from the "Yes" button to a text box below the screenshot.

Press "Yes"

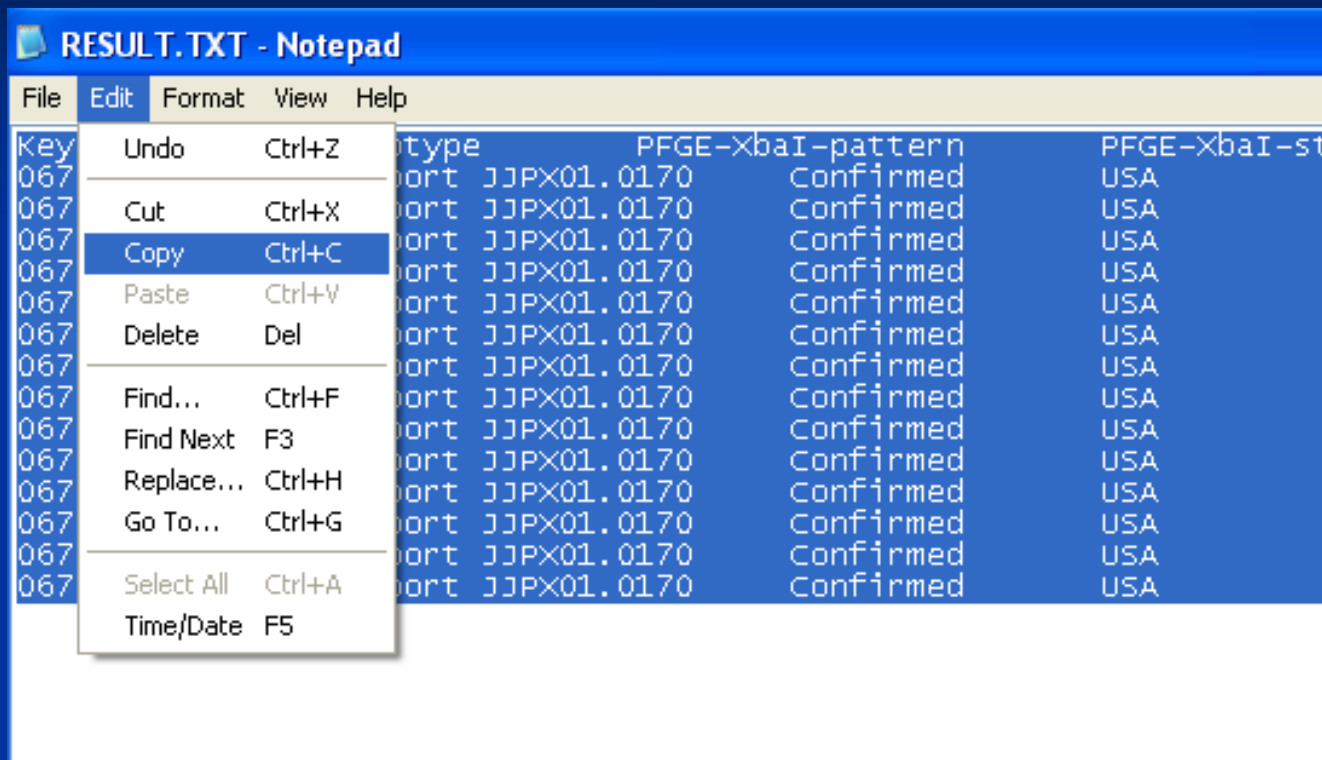
# Export Data into Excel



**Select Edit → Select All**

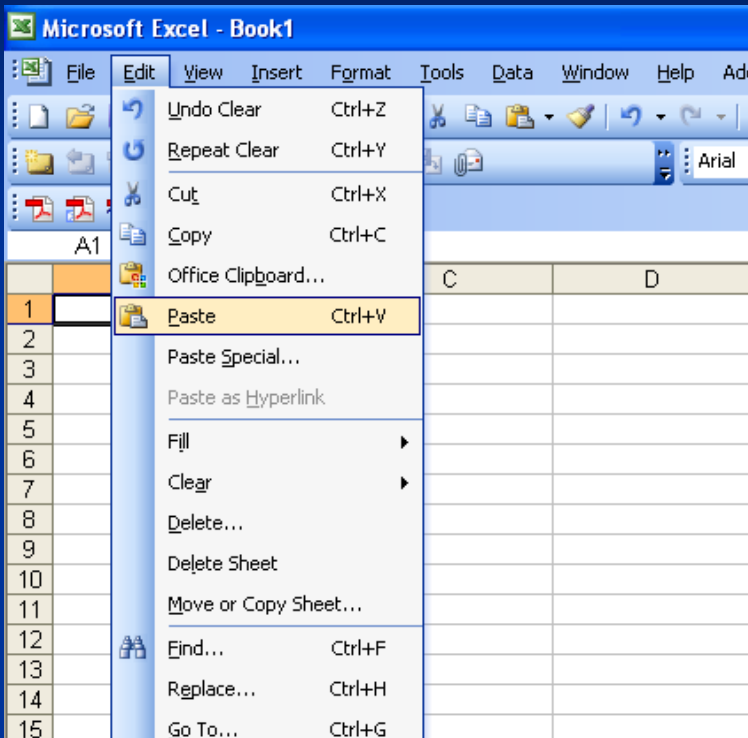


# Export Data into Excel



Select Edit → Copy

# Export Data into Excel



**In an Excel file,  
Select Edit → Paste**

A screenshot of the Microsoft Excel application window titled "Microsoft Excel - Book1". The spreadsheet area shows a table with columns A through F and rows 1 through 12. The table contains the following data:

	A	B	C	D	E	F
1	Key	Serotype	PFGE-Xbal-pattern	PFGE-Xbal-status	SourceCountry	ReceivedDate
2	067-07331-12478	Newport	JJPD1.0170	Confirmed	USA	9/21/2006
3	067-07331-12502	Newport	JJPD1.0170	Confirmed	USA	9/21/2006
4	067-07865-12535	Newport	JJPD1.0170	Confirmed	USA	8/31/2006
5	067-07865-12558	Newport	JJPD1.0170	Confirmed	USA	8/31/2006
6	067-10215-12479	Newport	JJPD1.0170	Confirmed	USA	8/31/2006
7	067-11220	Newport	JJPD1.0170	Confirmed	USA	8/31/2006
8	067-11232-12504	Newport	JJPD1.0170	Confirmed	USA	9/21/2006
9	067-11269	Newport	JJPD1.0170	Confirmed	USA	8/31/2006
10	067-12228	Newport	JJPD1.0170	Confirmed	USA	8/31/2006
11	067-12832-12529	Newport	JJPD1.0170	Confirmed	USA	8/31/2006
12	067-12834-12521	Newport	JJPD1.0170	Confirmed	USA	8/31/2006



# Summary

- Imported Demographic Information
  - Created ODBC Link
  - Downloaded Data
- Exported Data into Excel

# 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