

Retrieving Biological Data

This module teaches biologists how to use ISIS for Microsoft Excel to access, analyze, and report biological data that is stored in a database on their desktop or remote host computer. The course emphasizes the data pivoting functions of ISIS and of Excel. Participants access a sample database, retrieve data from selected fields, query the database combining several search criteria, and format result tables.

Course Objectives

The participant will be able to:

- ◆ Open a database and retrieve selected fields of data as columns in an Excel worksheet
- ◆ Find database records based on user-specified criteria
- ◆ Combine search criteria and hit lists
- ◆ Use pivot fields to show relationships between associated data
- ◆ Perform calculations and manipulate data in a worksheet
- ◆ Format and build a data report

Prerequisites

Familiarity with Microsoft Excel 7.0 or 8.0

Course Length

1/2 day

Examples from the Class

Query to search two data fields

| Search criteria: | |
|------------------|------------|
| Assay_code | Species |
| Unsorted | Unsorted |
| = "Walker" | = "Rabbit" |

Data fields retrieved for the records found by the search

| | A | B | C | D |
|----|--------|------------|---------|--------|
| 1 | ID | Assay code | Species | LD50 |
| 2 | 133316 | Walker | Rabbit | 18 |
| 3 | 141279 | Walker | Rabbit | 36.2 |
| 4 | 145925 | Walker | Rabbit | 90.2 |
| 5 | 148835 | Walker | Rabbit | 96.6 |
| 6 | 150594 | Walker | Rabbit | 145 |
| 7 | 150595 | Walker | Rabbit | 132 |
| 8 | 150600 | Walker | Rabbit | 4.5 |
| 9 | 162815 | TP | Mouse | 1.963 |
| 10 | 162815 | L-1210 | Rabbit | 43.962 |
| 11 | 162815 | T-Cell | Rat | 39.843 |
| 12 | 162815 | Walker | Dog | 2.475 |

Pivot fields that associate EC50 data with their respective assay targets in the database

| | A | B | C | D | E | F | G | H | I |
|----|--------|-----------------------|-----------------------------|-------------------|--------------------------------|----------------------|-------------------------|------------------|---------------|
| 1 | ID | Alcohol dehydrogenase | L-1210 Lymphocytic leukemia | P-815 Mastocytoma | Rat liver tryptophan pyrrolase | T-Cell proliferation | Walker tumor inhibition | Phospho kinase C | Species align |
| 2 | | EC50 | EC50 | EC50 | EC50 | EC50 | EC50 | EC50 | |
| 33 | 162813 | | | | 10.419 | | 3.266 | | Mouse |
| 34 | 162813 | | | 1.103 | | | | | Rat |
| 35 | 162813 | | | | | | | 12.126 | Dog |
| 36 | 162814 | | | | 9.921 | 4.457 | | | Rat |
| 37 | 162814 | | | | | | 8.792 | 7.788 | Dog |
| 38 | 162814 | | | | | | 12.161 | | Mouse |
| 39 | 162815 | | | | 2.219 | | 1.144 | 0.996 | Mouse |
| 40 | 162815 | | 5.864 | | | | | | Rabbit |
| 41 | 162815 | | | | | 9.976 | | | Rat |
| 42 | 162815 | | | | | | 6.012 | | Dog |
| 43 | 162817 | | | | | | | 10.712 | Mouse |
| 44 | 162817 | | | 2.101 | | | | | Rabbit |
| 45 | 162817 | | | | | 9.811 | 8.551 | | Rat |
| 46 | 162818 | | | | | 12.236 | | | Rat |