ALMANAC Data Fields

Name Type Comment

ComboDrugSeq NUMBER(8) unique ID for table record

Screener VARCHAR2(3) identifier of lab that ran experiment

Study VARCHAR2(20) experiment ID

TestDate DATE plan date

Plate VARCHAR2(20) plate ID

PanelNbr NUMBER(2) cell line panel number (not a 1 to 1

 mapping to panel)

CellNbr NUMBER(3) cell line cell number ( Panelbr, CellNbr

 pair is unique key for a cell line)

Prefix1 VARCHAR2(1 drug 1 Prefix - should all be 'S' for

 this data set

NSC1 NUMBER(7) drug 1 NSC

Sample1 NUMBER(3) drug 1 Sample number

ConcIndex1 NUMBER(2) 1 - lowest concentration of drug 1 in

 experiment

 2 - middle concentration

 3 - highest concentration

1. - otherwise (record represents

 data for drug 2, alone)

Conc1 NUMBER drug 1 concentration

ConcUnit1 VARCHAR2(2) drug 1 concentration unit:

 'M' Molar

 'u' micrograms/milliliter

Prefix2 VARCHAR2(1) drug 2 Prefix - should all be 'S' for

 this data set

NSC2 NUMBER(7) drug 2 NSC

Sample2 NUMBER(3) drug 2 Sample number

ConcIndex2 NUMBER(2) coding as for ConcIndex1

Conc2 NUMBER drug 2 concentration

ConcUnit2 VARCHAR2(2) drug 2 concentration unit: coding as for

 ConcUnit1

PercentGrowth NUMBER percent growth of drug combination

 against cell line, using time zero in

 calculation

PercentGrowthNoTZ NUMBER percent growth without time zero

TestValue NUMBER test mean optical density

ControlValue NUMBER vehicle control mean optical density

TZValue NUMBER time zero mean optical density

ExpectedGrowth NUMBER expected percent growth for combination,

 based on values for individual drugs

Score NUMBER(4) score, for combination records

Valid VARCHAR2(1) 'Y' if record represents valid data

 Should all be 'Y’ for this data file

Panel VARCHAR Panel Name for cell line

Cellname VARCAHR Cell Name for cell line

ALMANAC Calculations

ExpectedGrowth:

 If the percent growth of at least one of the 2 drugs, tested alone at the same concentration, is negative, then we set ExpectedGrowth to the least of the 2 PercentGrowth values for the individual drugs.

 Otherwise:

Growth1 <-- the minimum of the PercentGrowth value of drug 1 and 100

Growth2 <-- the minimum of the PercentGrowth value of drug 2 and 100

 Growth1 \* Growth2

ExpectedGrowth <-- -----------------

 100

Here is the PL/SQL code:

 -- See whether either drug's percent growth is negative.

 if (CalcExpectedGrowth.Drug1Growth < 0) or

 (CalcExpectedGrowth.Drug2Growth < 0)

 then

 -- The percent growth of at least one drug, tested alone,

 -- is negative. Set the expected percent growth to the

 -- minimum of the two values.

 ExpectedGrowth :=

 Least

 (

 Nvl (CalcExpectedGrowth.Drug1Growth, 0),

 Nvl (CalcExpectedGrowth.Drug2Growth, 0)

 )

 ;

 else

 -- Neither percent growth is negative. Calculate an expected

 -- value based on both of them.

 ExpectedGrowth :=

 Least (CalcExpectedGrowth.Drug1Growth, 100) \*

 Least (CalcExpectedGrowth.Drug2Growth, 100) /

 100

 ;

 end if; -- if either solo growth negative, else

Score:

 The score is simply ExpectedGrowth minus PercentGrowth.

 Here is the PL/SQL code:

 -- The individual score is the difference between the observed percent

 -- growth and the expected percent growth. This way, the larger the

 -- score, the more effective the drug combination is against the cell

 -- line.

 IndivScore := CalcIndivScore.ExpectedGrowth - CalcIndivScore.PercentGrowth;