

Example of Microarray Data Analysis



Locate the data to analyze

GENE EXPRESSION OMNIBUS DATABASE



- Public functional genomic repository from NCBI
- Array and sequence-based data are accepted
- It is mandatory to upload your microarrays CEL files before publishing any article about them

<http://www.ncbi.nlm.nih.gov/geo/>

Identify a dataset

GENE EXPRESSION ONMIBUS DATABASE

The data for the example: GDS4155

Search for

DataSet Record GDS4155: Expression Profiles Data Analysis Tools Sample Subsets			
Title:	Dopaminergic transcription factors Ascl1, Lmx1a, Nurr1 combined effect on embryonic fibroblasts		
Summary:	Analysis of induced dopaminergic (iDA) neurons generated from E14.5 mouse embryonic fibroblasts (MEFs) reprogrammed by infection with lentiviruses expressing dopaminergic transcription factors Ascl1, Lmx1a and Nurr1. Results provide insight into the molecular basis of MEF to iDA reprogramming.		
Organism:	<i>Mus musculus</i>		
Platform:	GPL6246: [MoGene-1_0-st] Affymetrix Mouse Gene 1.0 ST Array [transcript (gene) version]		
Citation:	Caiazzo M, Dell'Anno MT, Dvoretzskova E, Lazarevic D et al. Direct generation of functional dopaminergic neurons from mouse and human fibroblasts. <i>Nature</i> 2011 Jul 3;476(7359):224-7. PMID: 21725324		
Reference Series:	GSE27174	Sample count:	8
Value type:	transformed count	Series published:	2011/07/04

Identify groups in data

Sample	Title
GSM671653	Fibroblasts dopaminergic induced rep1
GSM671654	Fibroblasts dopaminergic induced rep2
GSM671655	Fibroblasts dopaminergic induced rep3
GSM671656	Fibroblasts dopaminergic induced rep4
GSM671657	Fibroblasts not induced rep1
GSM671658	Fibroblasts not induced rep2
GSM671659	Fibroblasts not induced rep3
GSM671660	Fibroblasts not induced rep4

INDUCED

WT

Download celfiles & Prepare *targets*

Two types of files are necessary to begin the data analysis:

1. CEL files
2. Targets file

fileName	grupos	ShortName	Colors
GSM671653.CEL	Induced	53_Ind	red
GSM671654.CEL	Induced	54_Ind	red
GSM671655.CEL	Induced	55_Ind	red
GSM671656.CEL	Induced	56_Ind	red
GSM671657.CEL	WT	57_WT	blue
GSM671658.CEL	WT	58_WT	blue
GSM671659.CEL	WT	59_WT	blue
GSM671660.CEL	WT	60_WT	blue

