**Clustergram Visualization**

I made a clustergram visualization of the log2 transformed proteomics data using various log2 cutoffs at [amp.pharm.mssm.edu/chikungunyaKEA](http://amp.pharm.mssm.edu/chikungunyaKEA). Collagens were frequently up-regulated and keratins were frequently down-regulated across the samples. The ‘supnt’ and ‘lysate’ samples clustered separately.

Since keratins are important in skin development and one of the symptoms of the Chikungunya virus is rash development, down regulation of keratins might be a mechanism behind Chikungunya symptoms. All of the measured down-regulated keratins were epithelial keratins (as opposed to hair keratins) and most belonged to Type I (Type I: acidic low-molecular weight proteins; Type II: basic or neutral high molecular weight proteins).

**L1000CDS2**

In order to find drugs that might reverse the expression of the differentially regulated proteins, we used the took L1000CDS2 to find drug signatures that reverse the Chikungunya signature.

I made two sets of up and down gene lists for querying with L1000CDS2:

1) Collagen (up) and Keratin (dn) lists: <http://amp.pharm.mssm.edu/L1000CDS2/#/result/55c2469e17c56aef005aeb27>

2) consensus up/dn genes (using log2 cutoff of 1): <http://amp.pharm.mssm.edu/L1000CDS2/#/result/55c246e817c56aef005aeb29>

There were a few drugs that showed up using both queries - e.g. BJM-ctd2-9, Homoharringtonine.

**Gene Lists**

**Keratins**

Type I - Human epithelial keratins

KRT10

KRT13

KRT14

KRT17

KRT19

KRT9

Type II - Human epithelial keratins

KRT1

KRT2

KRT5

**Collagens**

COL1A1

COL1A2

COL5A1

COL6A1

COL6A3

**Up Genes (Consensus)**

ACAT2

ACTR3

AKR1A1

ALDH7A1

CBX3

CNN2

COL1A1

COL1A2

COL5A1

COL6A3

COPE

CS

CTGF

CTSL

DCTN2

EIF3A

FLNA

FN1

GBA

GCN1L1

GLIPR2

GLRX

HDLBP

HSD17B12

IGFBP7

IPO9

ITM2B

KIF5B

LMAN1

MACF1

MCFD2

MMP2

MSN

NAGK

NCSTN

P4HA1

PALLD

PCNP

PFN1

PLOD2

POSTN

PRKDC

RAB1B

RALA

RPL22L1

RRAS2

S100A16

SERPINE1

SKP1

SLC38A2

SPARC

SPTBN1

TFG

TGFBI

TIMM44

TMED9

TRAP1

TUFM

TXN

VCAN

VDAC3

YTHDF2

**Down Genes (Consensus)**

A2M

AFP

ANPEP

APOA1

C3

C9

CAND1

CD82

COL6A1

COPS3

DDX1

DSC1

DSG1

FBLN1

GSN

HIST1H2AJ

HIST1H4D

HNRNPL

ITGA2

ITIH3

KARS

KRT1

KRT10

KRT13

KRT14

KRT17

KRT19

KRT2

KRT5

KRT9

LGALS3

LUM

MYH9

PDLIM3

PGAM1

PGAM1P4

PRKAR1A

RCN3

S100A11P1

SARNP

SOD1

TRA2B

TUBB

UNC80

YWHAG