Transcript abundance

CV

(a)

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5

Transcript abundance

CV

0 1 2 3 4 5

CV, single-cell data

CV, normalized microarray data

(b)

CV, single-cell data

CV, population sampling

Simulation

CV, cell sampling

(c)

0 10 20 30 40 50 60

CV, normalized microarray data

R = 0.47

P = 7.3e-43

Cellular function correlated with gene expression noise

(d)

GO contents

Single-cell data

Microarray data

High noise groups

Oxidative phosphorylation
Amino-acid biosynthesis
Heat shock related
Stress response
Mitochondria related

High noise

Low noise groups

Translation
Ribosome
Proteolysis
Acidification
Secretory pathway
Essential genes

Low noise

Cellular function correlated with gene expression noise