

# Supplementary Information on “Survival Analysis by Penalized Regression and Matrix Factorization”

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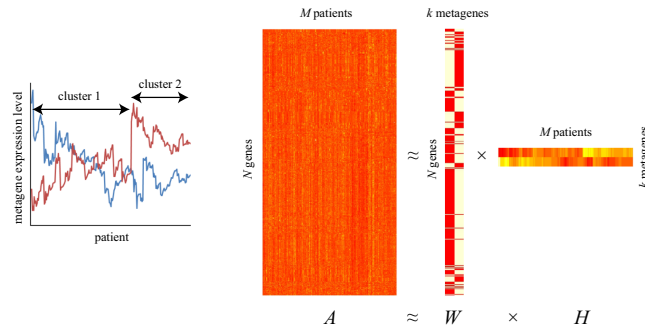


Figure S1: A rank-2 NMF example in microarray data (see also J.P. Brunet, P. Tamayo, T.R. Golub, and J.P. Mesirov, “Metagenes and molecular pattern discovery using matrix factorization,” *PNAS*, vol. 101, pp. 4164–4169, 2004.)

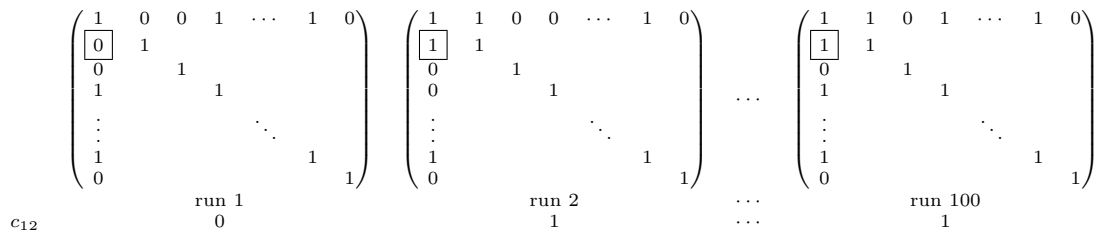


Figure S2: Connectivity matrix  $(c_{ij})$  over 100 runs.

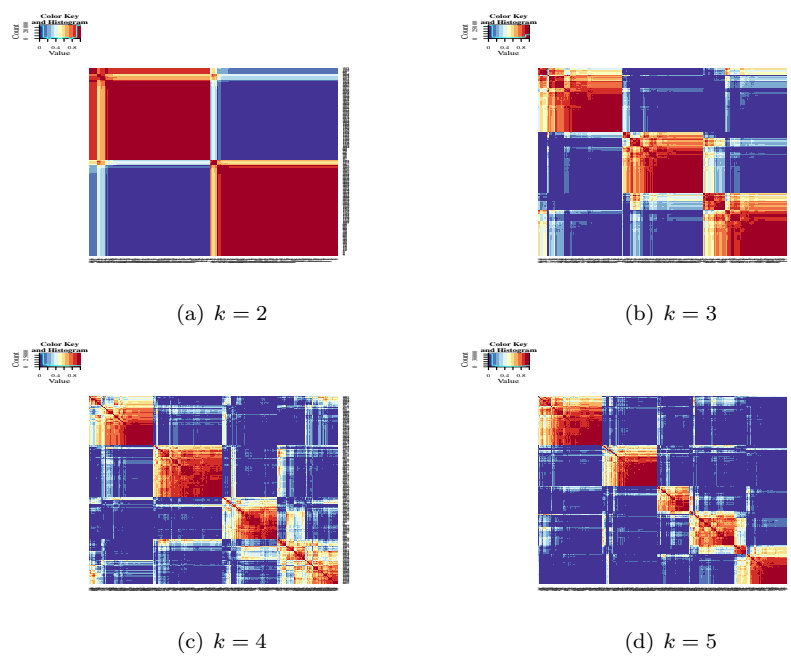


Figure S3: Consensus clustering results of 434 genes without missing values for rank  $k = 2, \dots, 5$ .

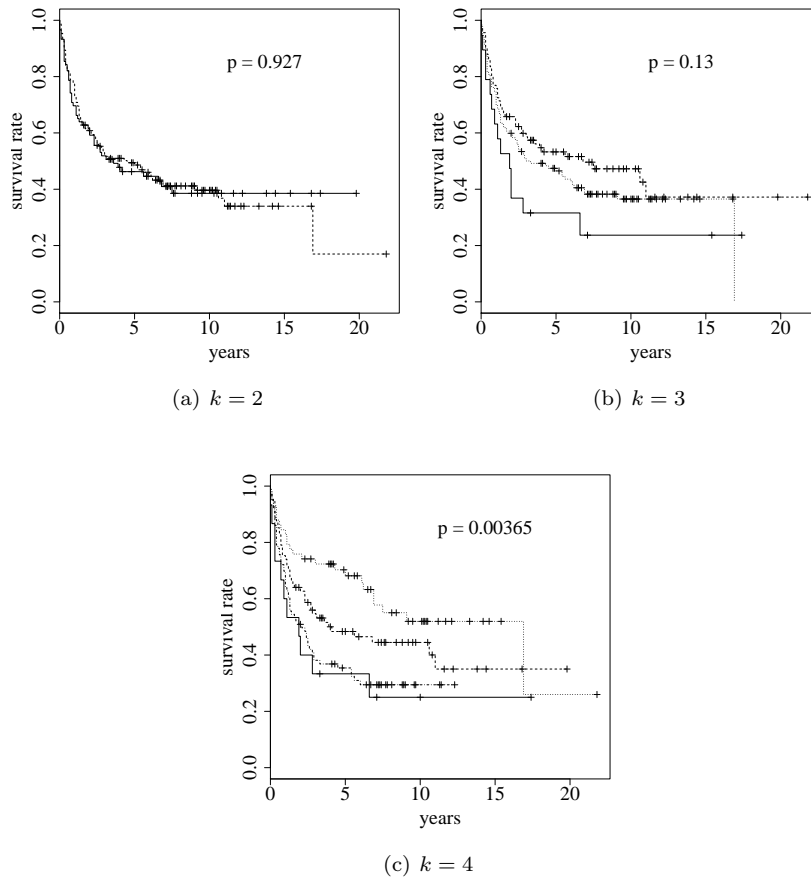


Figure S4: The Kaplan-Meier curve results of three kinds of patient division using 434 genes without missing values corresponding to rank  $k = 2, \dots, 4$ .