

**Table iB. FuzzyK parameter optimization**

Trial Name <sup>a</sup>	Clustering cycles <sup>b</sup>	k per cycle <sup>c</sup>	Total K <sub>exp</sub> <sup>d</sup>	Total K <sub>obs</sub> <sup>e</sup>	Hierarchical clusters <sup>f</sup>	
					0.7	0.9
A	1	100	100	37	34	15
B	2	50	100	45	39	18
C	3	34	102	43	42	23
D	1	102	102	45	36	15
E	3	34	102	78	43	22
E2	3	26	78	61	44	22
F	3	25	75	61	44	22
G	3	34	102	66	41	25
H	3	20	60	45	42	22
I*	3	40	120	91	46	21
J	3	60	180	109	46	22
K	3	100	300	122	47	22
L	3	34	102	91	51	23

This table summarizes the number of unique centroids identified by each fuzzy k-means clustering trial and the number of hierarchical cluster means that were correlated greater than the indicated cutoff to the centroids identified by fuzzy k-means clustering.

<sup>b</sup> Number of fuzzy clustering cycles in the trial

<sup>c</sup> Maximum number of k centroids per cycle of fuzzy clustering

<sup>d</sup> Total number of K centroids expected in the clustering trial

<sup>e</sup> Number of unique centroids identified in the clustering trial

<sup>f</sup> Number of hierarchical cluster means that were correlated >0.7 and >0.9 to the centroids identified in the trial

<sup>a</sup> Trial name and description (see also Table i):

A. One round of fuzzy clustering initialized with k PCA eigen vectors

B. Same as A. but perform 2 rounds of clustering on data subset, no weight recalculation

C. Same as A. but perform 3 rounds of clustering on data subsets, no weight recalculation

D. Same as A. but seed with the eigen vectors used in C.

E. Same as C. but recalculate gene and array weights after first round of clustering

E2. Same as E but k = 26

F. Same as E2. but do not discard any eigen vectors after seeding

G. Same as E but use complete dataset (Dataset A) during entire clustering procedure

H. – K. Same as E. but increase k in each trial

I. These parameters were used to analyze the yeast gene expression data, as described in the text

L. Standard k-means (“hard”) clustering (see Materials and Methods for details)