

Supplementary Data

Table S-1. Optimized values of k used for k -NN classifier, values of C and bandwidth h of Gaussian kernel used for SVM classifier when PCA, NPE and SNPE are used.

	Parameter	PCA	NPE	SNPE
Stomach	k	1	1	1
	C	1	1	1
	h	0.1	1	1
Colon	k	1	1	1
	C	100	1000	1000
	h	0.01	0.1	0.1

Table S-2. Diagnostic performance measures on the classification between normal and malignancy (adenoma & cancer) for stomach and colon tissue in the case of using SVM.

	Method	PCA	NPE	SNPE
Stomach	PCA	96.3	70.9	83.9
	NPE	95.5	85.8	90.8
	SNPE	97.8	80.3	89.3
Colon	PCA	56.3	80.7	65.1
	NPE	63.6	93.6	74.4
	SNPE	70.0	90.3	77.3