

Supplementary Material

MiRNA microarray analysis

Total RNA was isolated from fresh tissues using the miRCURY LNA Array (v. 16.0) system. RNA samples were labeled with the Exiqon miRCURY Hy3/Hy5 kit (Exiqon, Vedbaek, Denmark) and hybridized on the miRCURY LNA Array station. The slides were scanned using the Axon GenePix 4000B microarray scanner (Axon Instruments, Foster City, CA). Scanned images were imported into GenePix Pro 6.0 software (Axon) for grid alignment and data extraction. Replicated miRNAs were averaged, and miRNAs with intensities >50 in all samples were chosen for calculating the normalization factor. Expression data were normalized by median normalization.

Statistical analysis

Due to the large magnitude range of relative miRNA expression levels, data were log transformed for analysis. Data are presented as the mean \pm SEM. Normality for the \log_{10} -transformed data was confirmed using the Kolmogorov-Smirnov test. Differences in relative quantification of miRNAs were analyzed by the two-sided Mann-Whitney U test.

The associations between adenoma characteristics or physiological parameters of patients at the qualifying colonoscopy and adenoma recurrence was investigated by logistic regression models, which were constructed by leave-one-out cross-validation methods to control for potential confounding variables. Adenoma recurrence status (positive vs. negative) was used as the dependent variable for one set of models. The presence of recurrent adenomas was used as the primary endpoint of interest.

Univariate regression was performed on each covariate to examine the influence of each factor on adenoma recurrence. Final multivariate models were based on the stepwise addition and removal of covariates found to be associated with adenoma recurrence in univariate models ($P < 0.10$). A Wald statistic of $P < 0.05$ was used as the criterion for inclusion in final multivariate models. The significance of each independent parameter was summarized by its odds ratio (OR) and 95% confidence interval (CI). The prognostic values of different miRNAs and recurrence related factors were assessed by the area under the receiver operating characteristic (ROC) curve. All P -values were two-sided and $P < 0.05$ was considered statistically significant. All statistical analyses were performed using Medcacl 11.5 and GraphPad Prism 5.0.