

Additional Files

Table S1. Demographics of plasma donors

Organ system	Clinical diagnosis	Number	Cancer Stage (# of Patients)	Sex Male /Female	Age Average±SD
Gastrointestinal	Esophageal cancer (EC)	10	1(2), 2(8)	8/2	56.8±2.5
	Gastric cancer (GC)	10	1(2), 2(8)	1/9	55.8±3.3
	Colon cancer (CC)	10	1(3), 2(7)	8/2	57.8±2.7
	Crohn's disease (CD)	10	NA	5/5	53.3±9.4
Pulmonary	Asthma	10	NA	0/10	61.4±12.0
	Pneumonia	10	NA	6/4	51.9±7.8
	Non-small cell lung cancer (NSCLC)	10	1(2), 2(2), 3(3), 4(3)	3/7	58.5±3.6
	Controls	30	NA	26/4	63.7±4.0

NA – Not Applicable; SD – Standard Deviation

Table S2. miRNA used in the study

miRNA	Enriched in GI	Enriched in lung	Involved in cancer	Involved in inflammation	Under-expressed in	AB Catalog Assay ID
<i>miR-17-5p</i>			+			002308
<i>miR-30e-3p</i>	Ubiquitous					000422
<i>miR-31</i>			+	+		002279
<i>miR-34b</i>		+			GI	002102
<i>miR-126</i>			+	+		002228
<i>miR-142-5p</i>		+				002248
<i>miR-145</i>	+					002278
<i>miR-146b-5p</i>		+	+	?		001097
<i>miR-148a</i>	+		+			000470
<i>miR-155</i>		+	+	+		002623
<i>miR-181a</i>	Ubiquitous, brain-enriched					000480
<i>miR-192</i>	+					000491
<i>miR-194</i>	+					000493
<i>miR-203</i>	+					000507
<i>miR-215</i>	+				Lung	000518
<i>miR-223</i>		+	?	+		002295
<i>miR-409-3p</i>	Ubiquitous				Lung	002332
<i>miR-486-5p</i>		+				001278

Figure S1

Differentiation of GI pathologies from controls by miRNA biomarker pairs.

The concentrations of miRNAs in plasma samples from patients with four GI pathologies, and from healthy donors were measured by RT-qPCR and the ratios of various miRNAs were calculated as $2^{-\Delta Cq} \times 100$. A-G – box-plots; A-F – individual pathologies (10 patients in each group) against controls (30 subjects); G – combined GI pathologies (40 patients total) against controls (30 subjects). All notations are as in Fig.1. H – Receiver-Operating Characteristic (ROC) curve for differentiation between patients with four GI pathologies and controls obtained with different biomarker pairs. All statistical analyses are performed as in Fig.1.

Figure S2

Differentiation of PS pathologies from controls by miRNA biomarker pairs.

The concentrations of miRNAs in plasma samples from patients with three PS pathologies, and from healthy donors were measured by RT-qPCR and the ratios of various miRNAs were calculated as $2^{-\Delta Cq} \times 100$. A-H, I and K – box-plots; A-H – individual pathologies (10 patients in each group) against controls (20 subjects); I and K – combined PS pathologies (30 patients total) against controls (20 subjects). J and L – Receiver-Operating Characteristic (ROC) curves of differentiation between patients with three PS pathologies and controls obtained with different biomarker pairs. All statistical analyses are performed as in Fig.1.

Figure S3

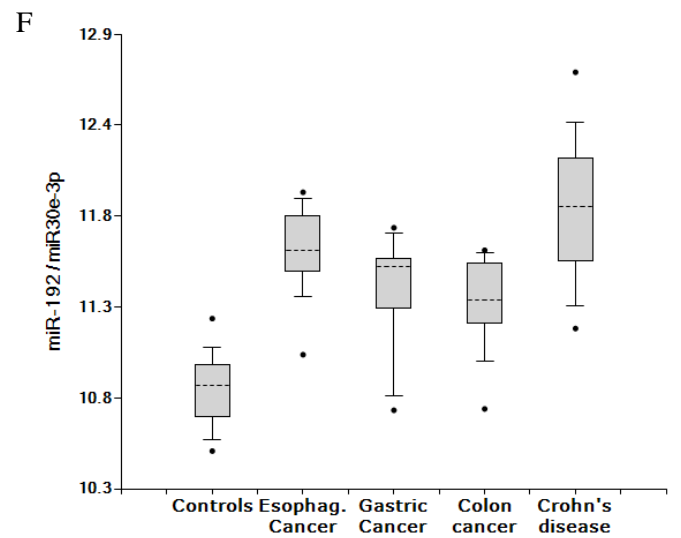
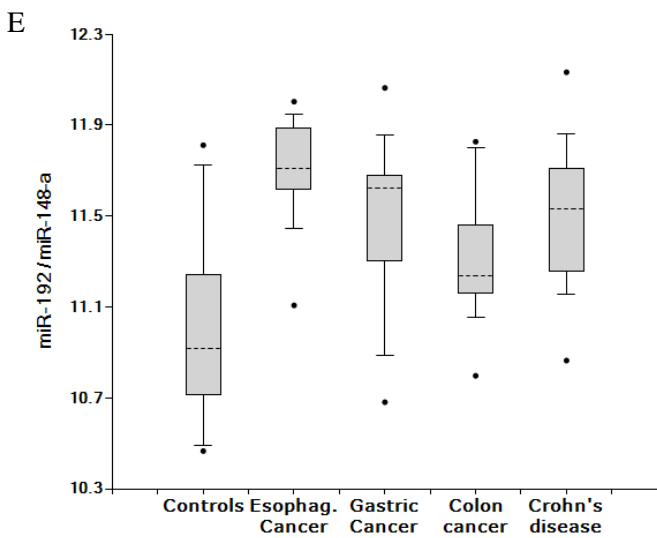
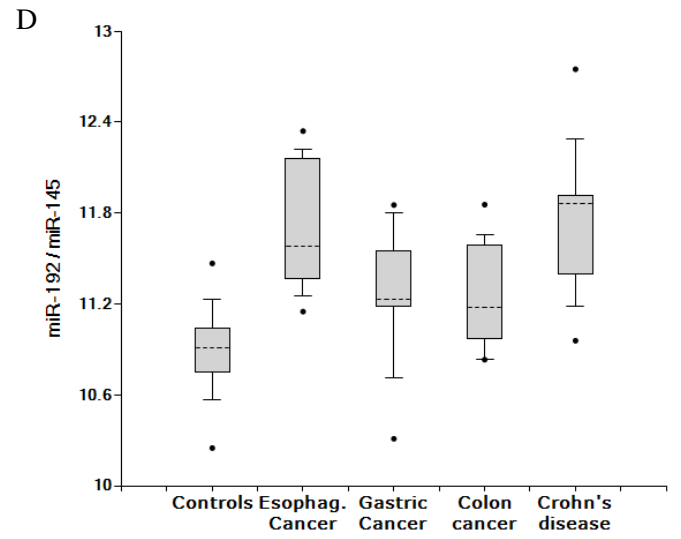
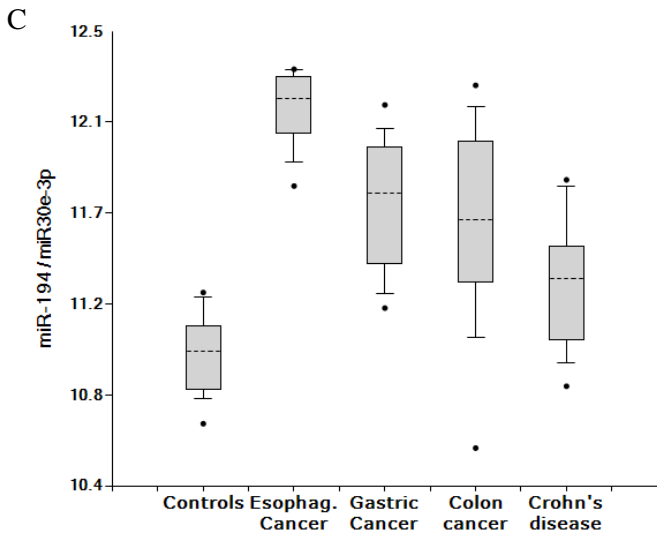
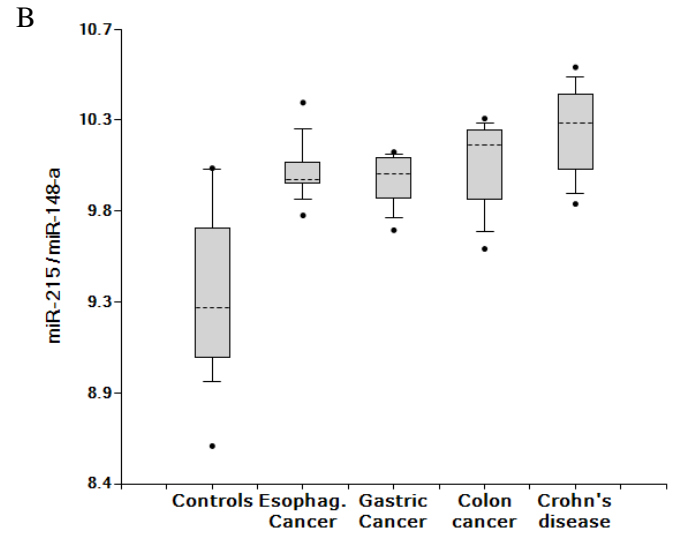
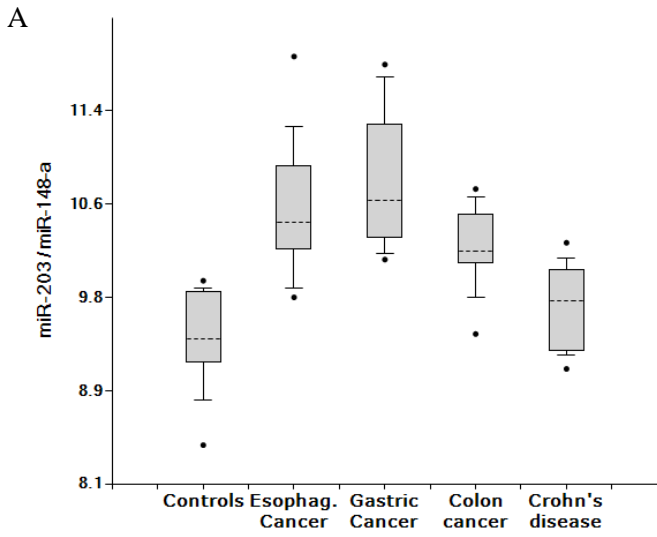
Receiver-Operating Characteristic (ROC) curve analysis for differentiation between particular diseases of one organ system and combined pathologies of another organ system, obtained with different biomarker pairs.

The areas under the ROC curve (AUC) are reported. The statistical analysis is performed as in Fig.1.

Figure S4

Receiver-Operating Characteristic (ROC) curve analysis for differentiation of cancer(s) from inflammatory disease(s) of GI (A) and PS (B), obtained with different biomarker pairs.

A – Patients with Crohn's disease versus patients with cancers of the GI system; B – Patients with lung cancer versus patients with either asthma or pneumonia. The areas under the ROC curve (AUC) are reported. The statistical analysis is performed as in Fig.1.



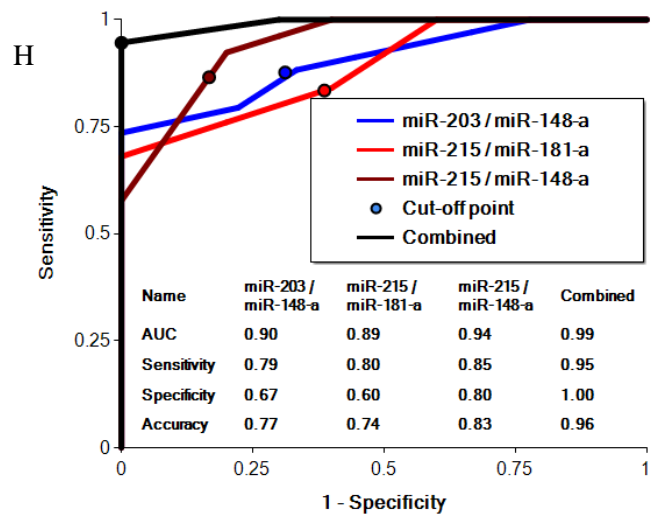
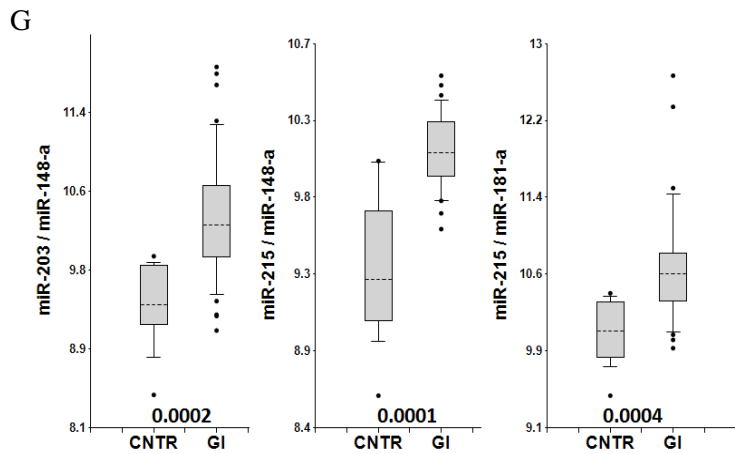
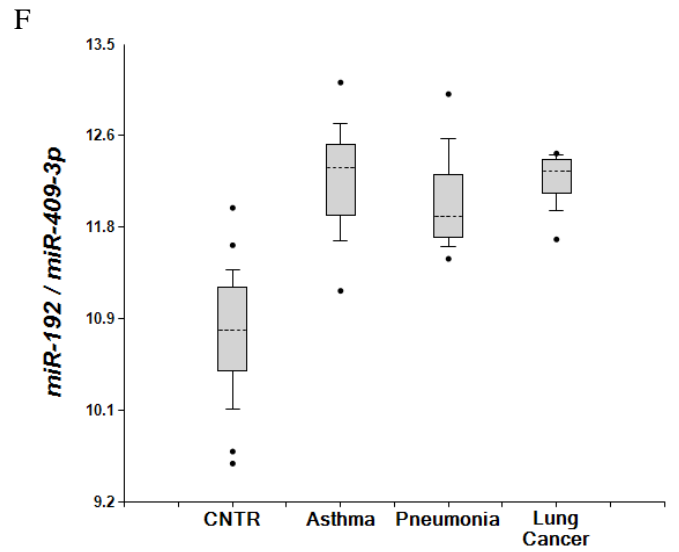
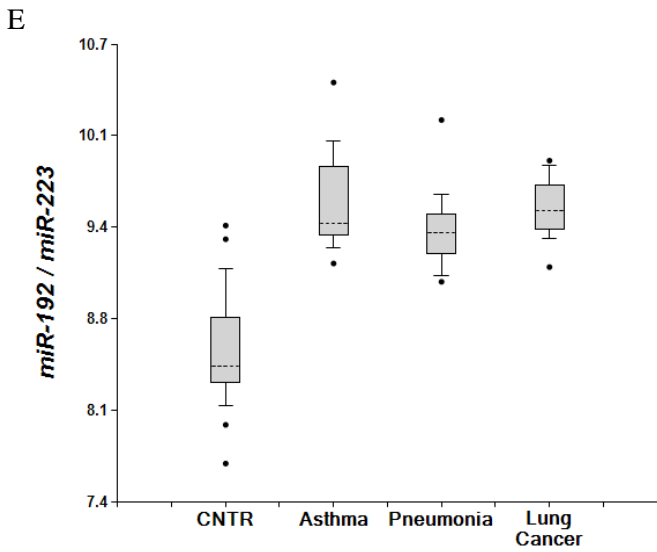
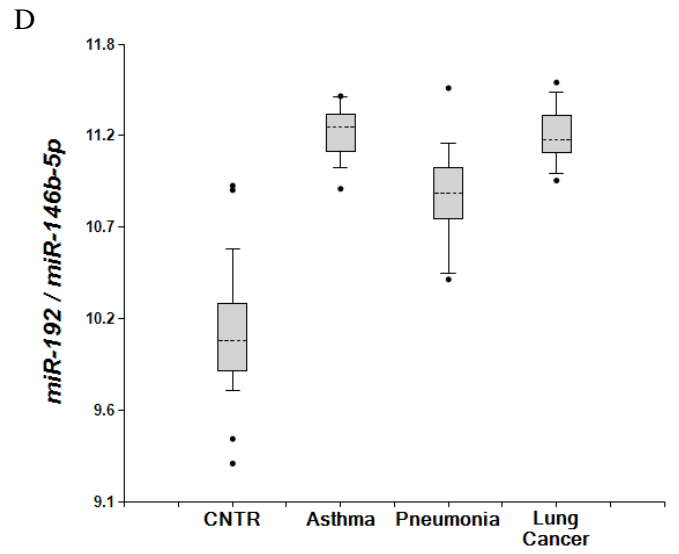
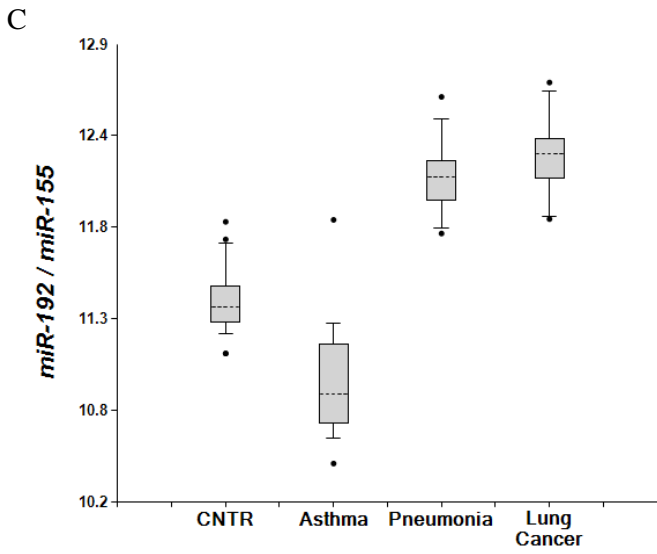
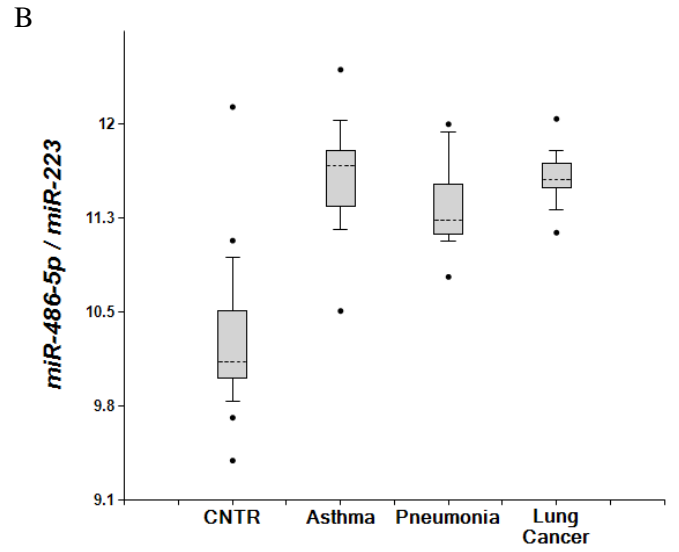
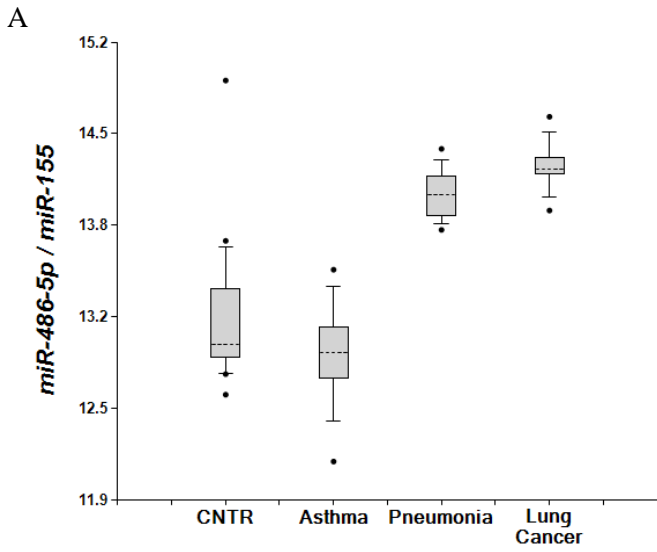


Figure S1



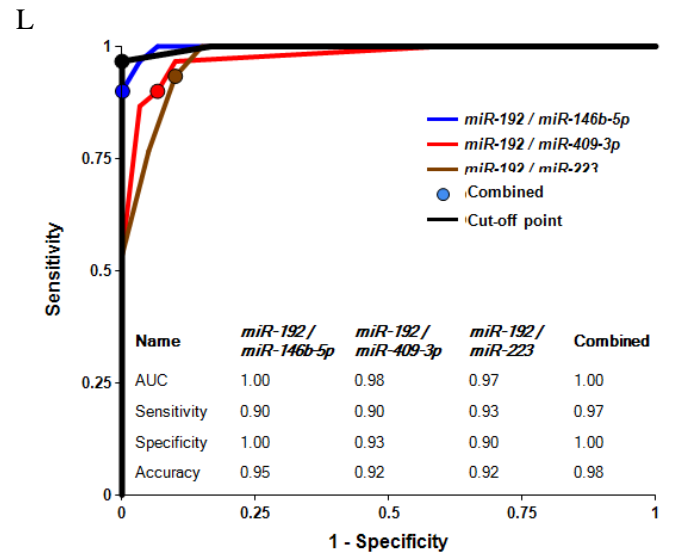
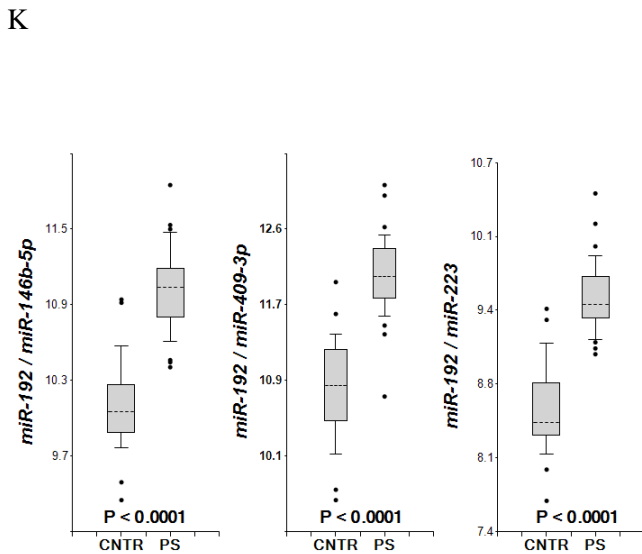
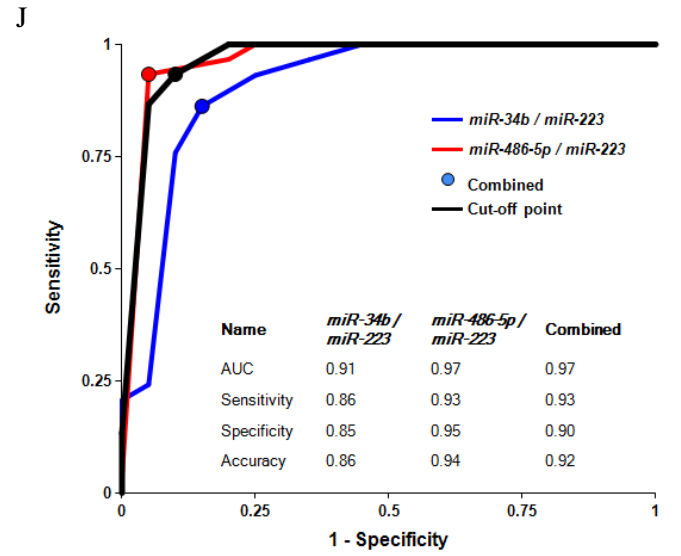
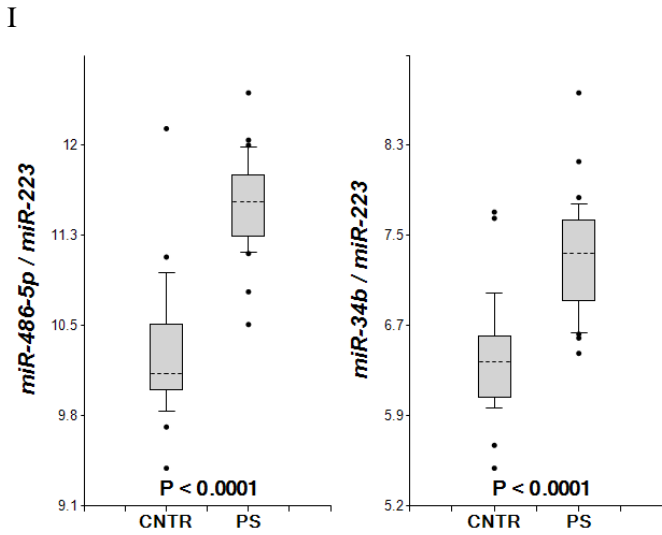
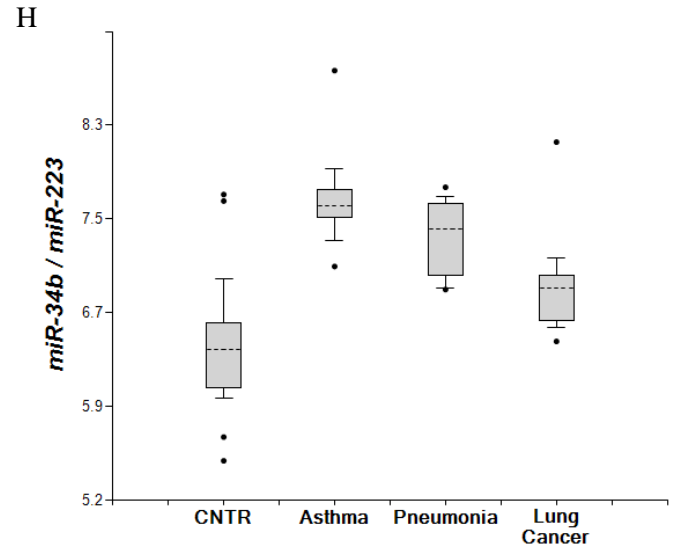
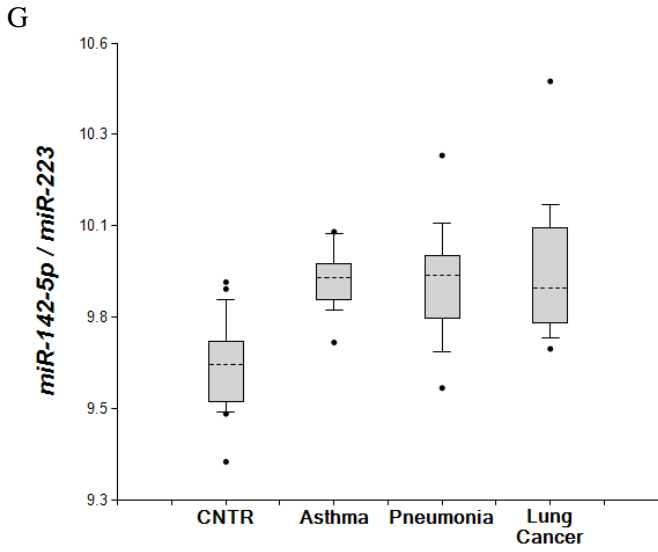
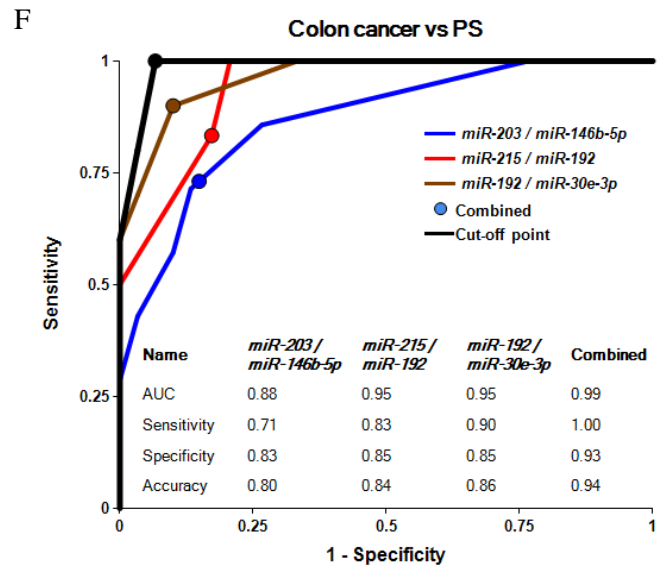
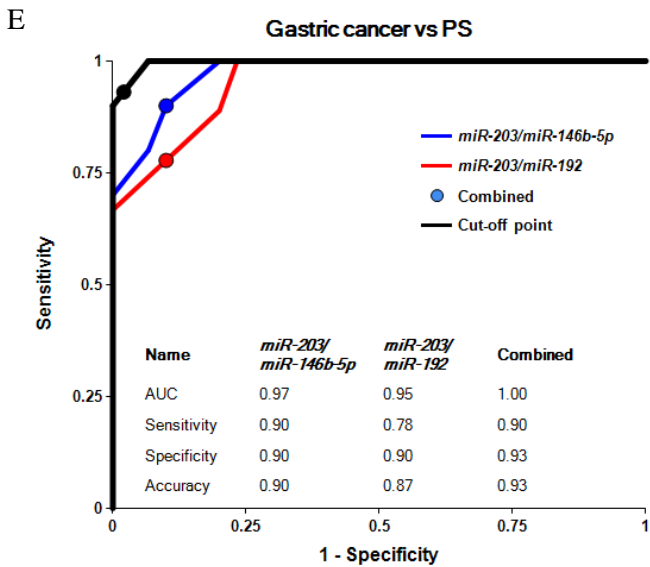
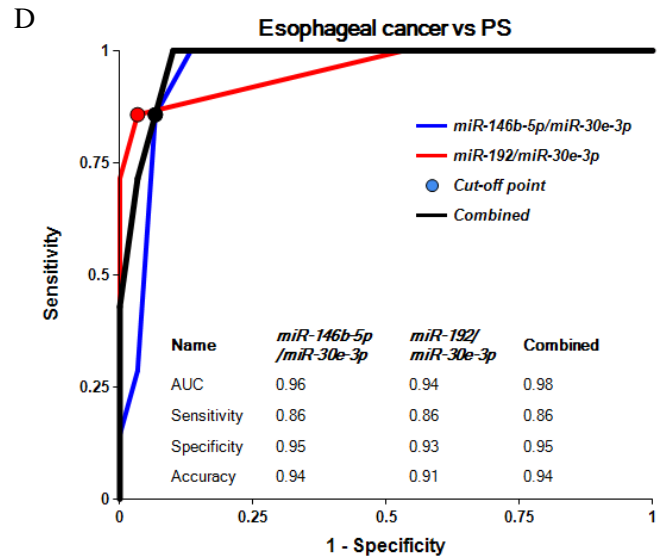
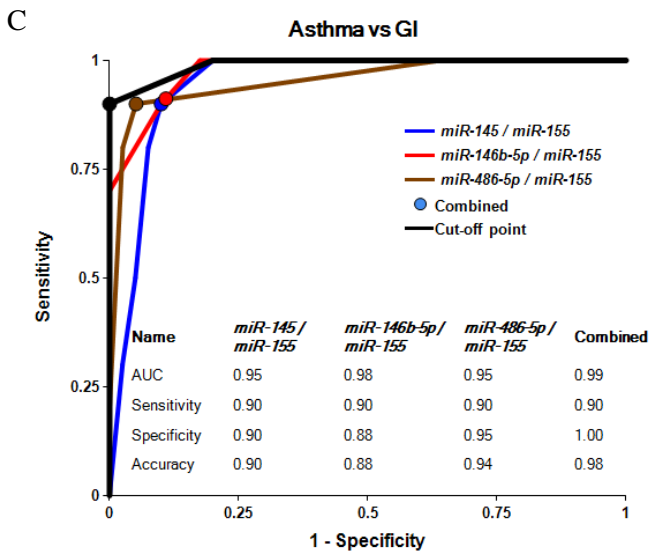
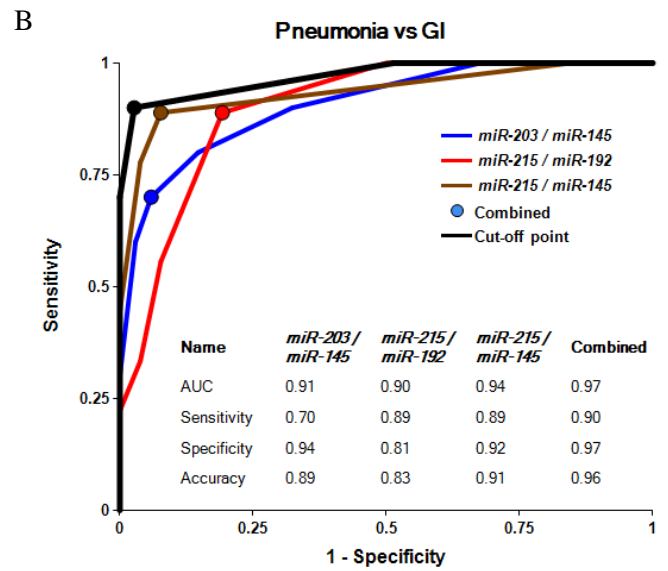
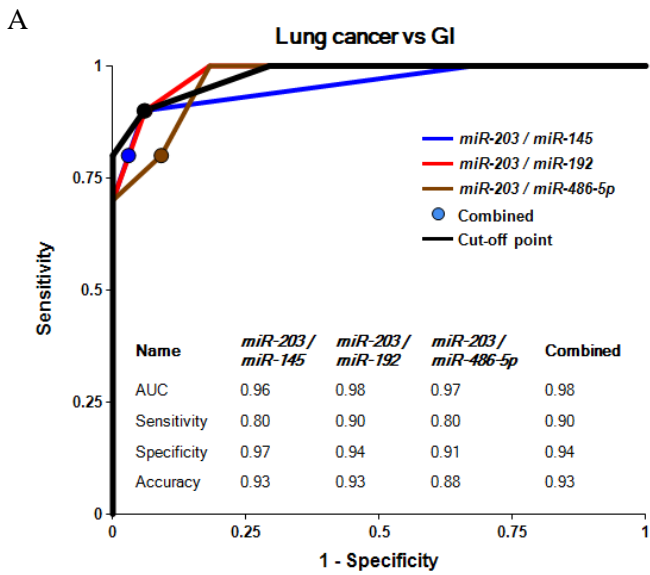


Figure S2



G

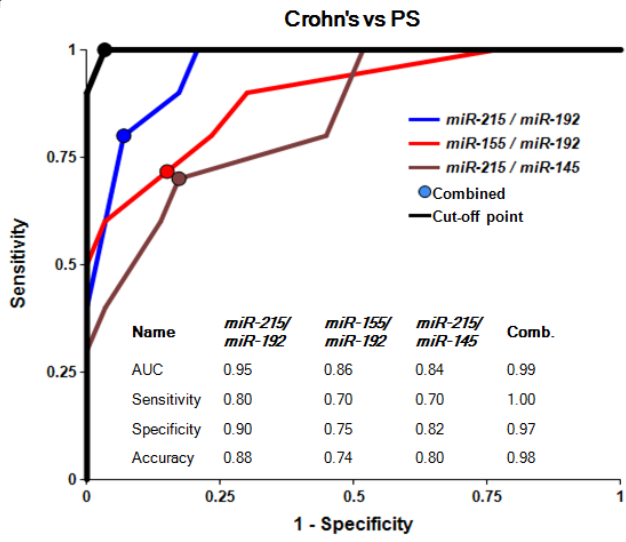


Figure S3

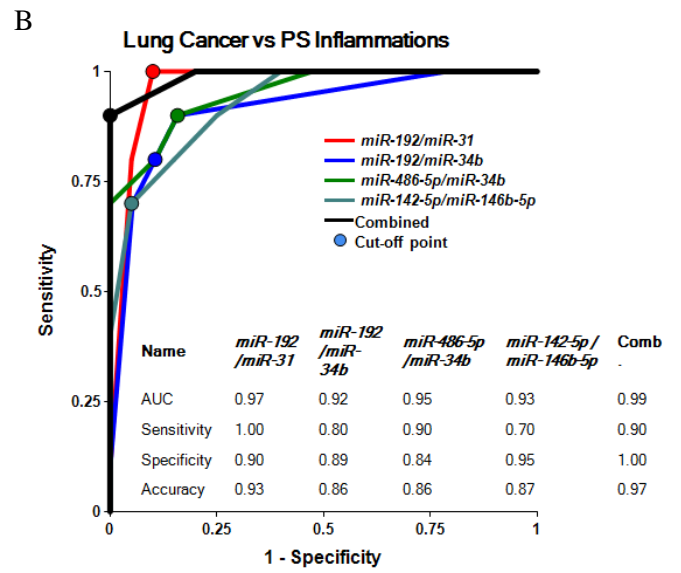
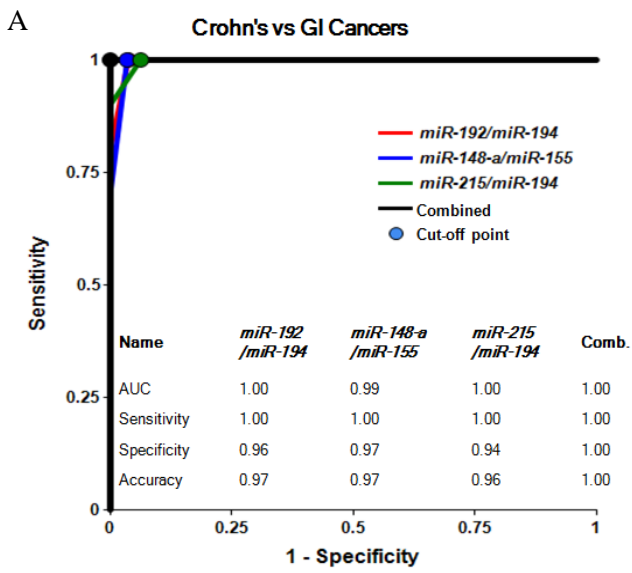


Figure S4