

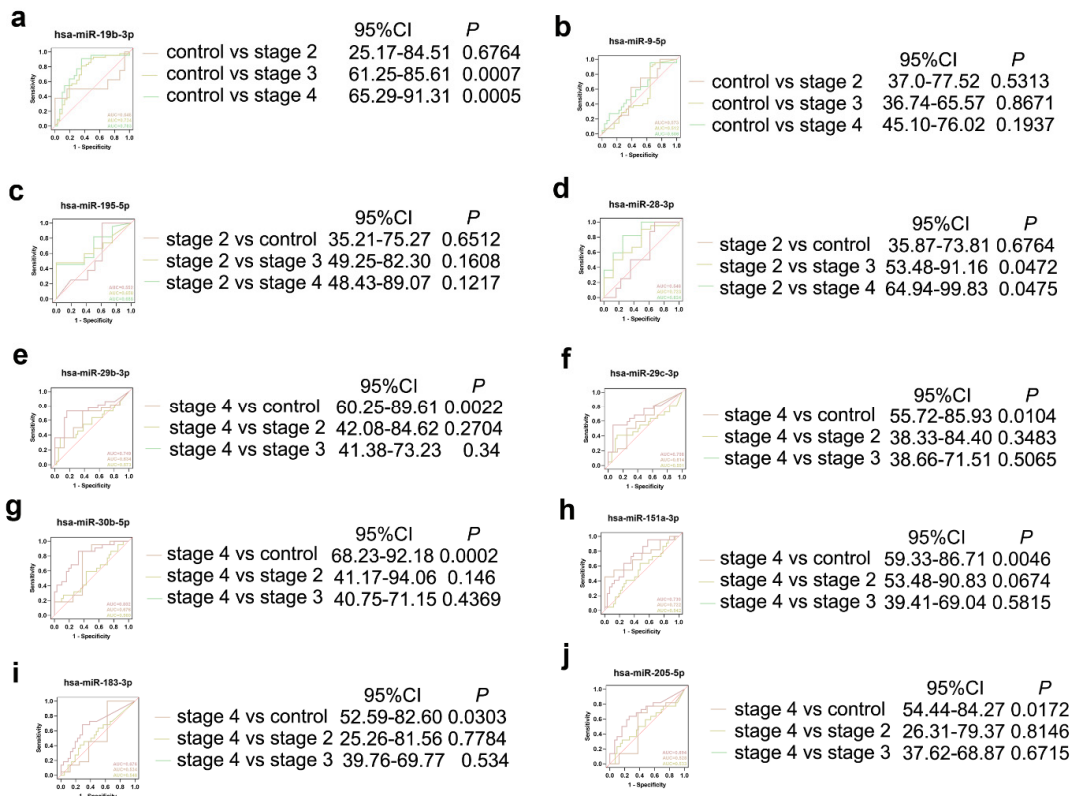
1

2 **Fig. S1.** The degree of miRNA functional enrichment in stages II–III.

3 (a). The degree of miRNA functional enrichments in stage II.

4 (b). The degree of miRNA functional enrichments in stage III.

5 (c). The degree of miRNA functional enrichments in stage IV.



6

7 **Fig. S2.** ROC curve results of 10 miRNAs that did not show significant diagnostic  
8 value.

9 (a). ROC curves of hsa-miR-19b-3p differentiated stage II, III and IV from control.

10 (b). ROC curve of hsa-miR-9-5p differentiated stage II, III and IV from control.

11 (c). ROC curve of hsa-miR-195-5p differentiated stage II from control, stage III and  
12 stage IV.

13 (d). ROC curve of hsa-miR-28-3p differentiated stage II from control, stage III and  
14 stage IV.

15 (e). ROC curve of hsa-miR-29b-3p differentiated stage IV from control, stage II and  
16 stage III.

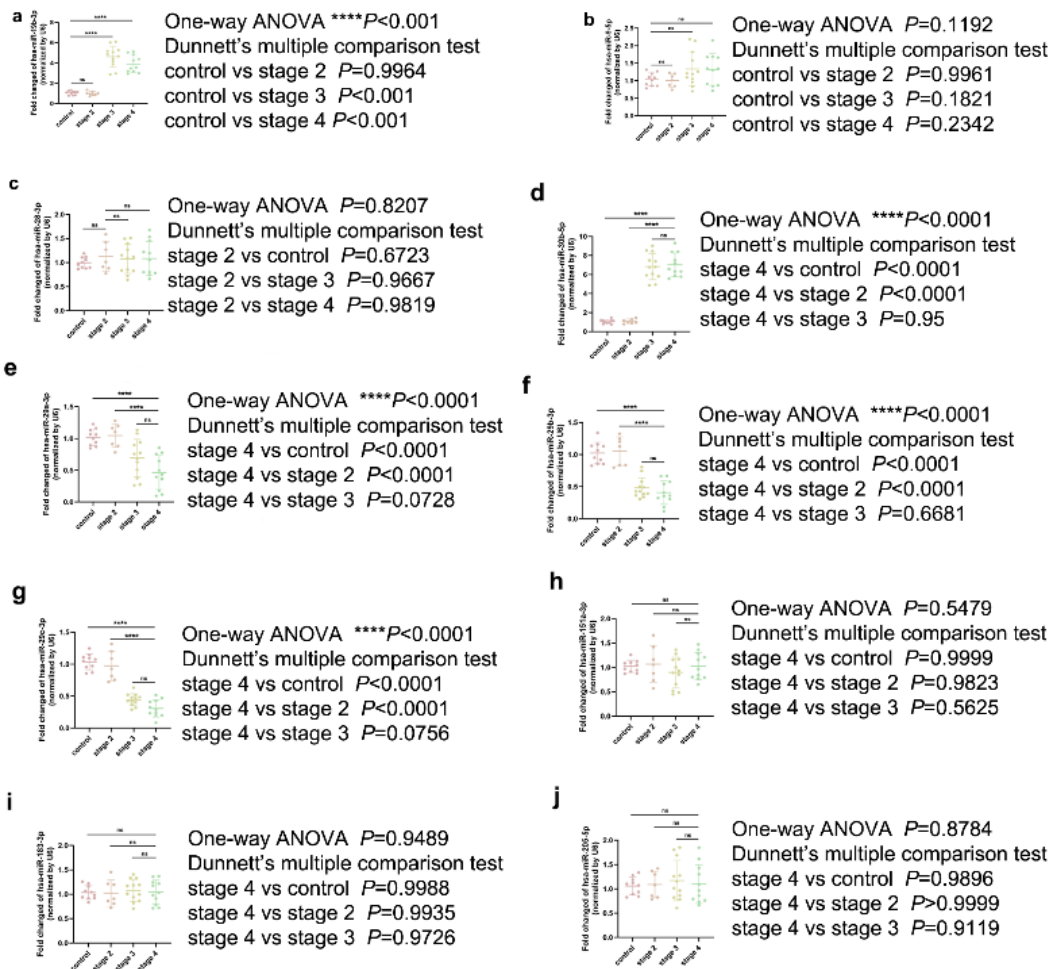
17 (f). ROC curve of hsa-miR-29c-3p differentiated stage IV from control, stage II and  
18 stage III.

19 (g). ROC curve of hsa-miR-30b-5p differentiated stage IV from control, stage II and  
 20 stage III.

21 (h). ROC curve of hsa-miR-151a-3p differentiated stage IV from control, stage II and  
 22 stage III.

23 (i). ROC curve of hsa-miR-183-3p differentiated stage IV from control, stage II and  
 24 stage III.

25 (j). ROC curve of hsa-miR-205-5p differentiated stage IV from control, stage II and  
 26 stage III.



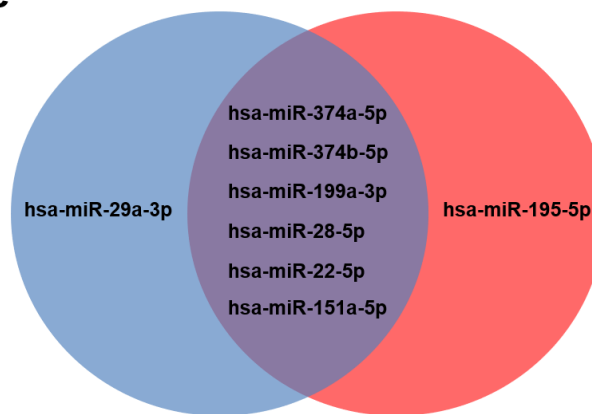
27

28 **Fig. S3.** qRT-PCR results of 10 miRNAs whose specific expression failed to be

29 verified by this analysis.

- 30 (a). The expressions of hsa-miR-19b-3p in stage II, stage III and stage IV.
- 31 (b). The expressions of hsa-miR-9-5p in stage II, stage III and stage IV.
- 32 (c). The expressions of hsa-miR-28-3p in stage II, stage III and stage IV.
- 33 (d). The expressions of hsa-miR-30b-5p in stage II, stage III and stage IV.
- 34 (e). The expressions of hsa-miR-29a-3p in stage II, stage III and stage IV.
- 35 (f). The expressions of hsa-miR-29b-3p in stage II, stage III and stage IV.
- 36 (g). The expressions of hsa-miR-29c-3p in stage II, stage III and stage IV.
- 37 (h). The expressions of hsa-miR-151a-3p in stage II, stage III and stage IV.
- 38 (i). The expressions of hsa-miR-183-3p in stage II, stage III and stage IV.
- 39 (j). The expressions of hsa-miR-205-5p in stage II, stage III and stage IV. Data were
- 40 analyzed by one-way ANOVA with Dunnett's multiple comparisons test (mean  $\pm$  SD;
- 41  $n = 40$ , \*\*\*\* $P < 0.0001$ ).

### ROC curve



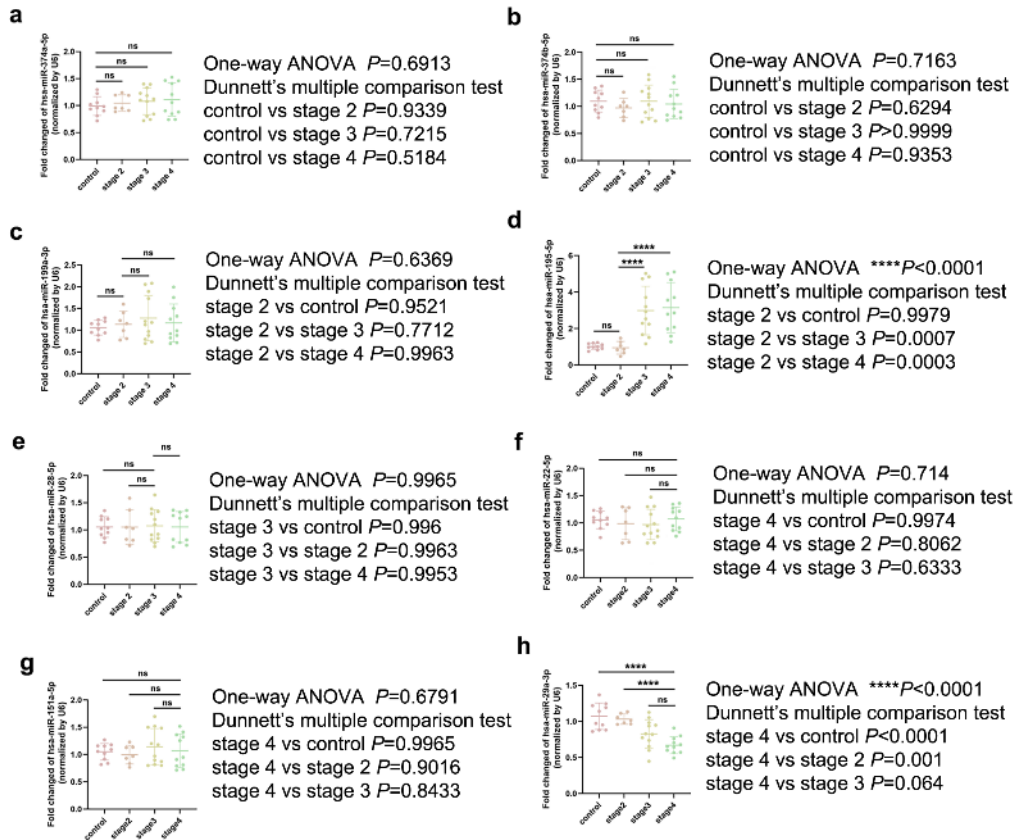
qRT-PCR

42

43 **Fig. S4.** Venn diagram of miRNAs validated by ROC curve and qRT-PCR.

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46

47 **Fig. S5. The expression of miRNAs validated by ROC curves and qRT-PCR assay, in**  
48 **the sera of PD participants.**

49 (a). The expressions of hsa-miR-374a-5p in stage II, stage III and stage IV.

50 (b). The expressions of hsa-miR-374b-5p in stage II, stage III and stage IV.

51 (c). The expressions of hsa-miR-199a-3p in stage II, stage III and stage IV.

52 (d). The expressions of hsa-miR-195-5p in stage II, stage III and stage IV.

53 (e). The expressions of hsa-miR-28-5p in stage II, stage III and stage IV.

54 (f). The expressions of hsa-miR-22-5p in stage II, stage III and stage IV.

55 (g). The expressions of hsa-miR-151a-5p in stage II, stage III and stage IV.

56 (h). The expressions of hsa-miR-29a-3p in stage II, stage III and stage IV. Data were

57 analyzed by one-way ANOVA with Dunnett's multiple comparisons test (mean  $\pm$  SD;

58  $n = 40$ ;  $**** P < 0.0001$ ).

59 **Table S1. Primer sequences for qRT-PCR.**

**Table S1 The primer sequences used by qRT-PCR**

miRNA	Primer sequences
U6	5'-GCTCGCTTCGGCAGCA-3' (forward)
U6	5'-AACGCTTCACGAATTTGCGT-3' (reverse)
hsa-miR-374a-5p	5'-TTATAATACAACCTGATAAGTG-3' (forward)
hsa-miR-374b-5p	5'-ATATAATACAACCTGCTAAGTG-3' (forward)
hsa-miR-19-3p	5'-TGTGCAAATCCATGCAAACTGA-3' (forward)
hsa-miR-30c-5p	5'-TGTAACATCCTACTCTCAGC-3' (forward)
hsa-miR-199a-3p	5'-ACAGTAGTCTGCACATTGGTTA-3' (forward)
hsa-miR-195-5p	5'-TAGCAGCACAGAAATATTGGC-3' (forward)
hsa-miR-5100	5'-TTCAGATCCCAGCGGTGCCTCT-3' (forward)
hsa-miR-28-5p	5'-AAGGAGCTCACAGTCTATTGAG-3' (forward)
hsa-miR-378a-5p	5'-CTCCTGACTCCAGGTCCTGTGT-3' (forward)
hsa-miR-22-5p	5'-AGTTCTTCAGTGGCAAGCTTTA-3' (forward)
hsa-miR-151a-5p	5'-TCGAGGAGCTCACAGTCTAGT-3' (forward)
hsa-miR-4443	5'-TTGGAGGCGTGGGTTTT-3' (forward)
hsa-miR-30b-5p	5'-TGTAACATCCTACTCAGCT-3' (forward)
hsa-miR-29a-3p	5'-TAGCACCATCTGAAATCGGTTA-3' (forward)
hsa-miR-29b-3p	5'-TAGCACCATTTGAAATCAGTGTT-3' (forward)
hsa-miR-29c-3p	5'-TAGCACCATTTGAAATCGGTTA-3' (forward)
hsa-miR-205-5p	5'-TCCTTCATTCCACCGGAGTCTG-3' (forward)
hsa-miR-183-3p	5'-GTGAATTACCGAAGGGCCATAA-3' (forward)
hsa-miR-21-5p	5'-TAGCTTATCAGACTGATGTTGA-3' (forward)
hsa-miR-25-5p	5'-AGGCGGAGACTTGGGCAATTG-3' (forward)
hsa-miR-1260b	5'-ATCCCACCACTGCCACCAT-3' (forward)
hsa-miR-151a-3p	5'-CTAGACTGAAGCTCCTTGAGG-3' (forward)
hsa-miR-9-5p	5'-TCTTTGGTTATCTAGCTGTATGA-3' (forward)
hsa-miR-28-3p	5'-CACTAGATTGTGAGCTCCTGGA-3' (forward)
hsa-miR-4492	5'-GAGGCTGAGCGCTCGTCA-3' (forward)

The downstream primers of miRNAs come from universal primers in the kit (miScript II RT kit, QIAGEN) except U6.