Table 1. The characteristics of asthma and control groups for different measurement.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Measurements | Characteristics  | Control group | Asthma group | t/χ2 | P value |
| miRNA array | Age (month) | 28.50 ± 7.10 | 12.60±0.93 |  2.220 |  0.110 |
| Female/Male | 0/4 | 0/5 |  | / |
| qRT-PCR 1 | Age (month)  | 16.00±2.08 | 9.80±1.62  | 2.343 | 0.058 |
| Female/Male  | 0/3  | 2/3  |  | 0.464 |
| qRT-PCR 2 | Age (month)  | 19.2±1.24  | 25.20±3.01  | 1.845 | 0.102 |
| Female/Male  | 2/3  | 2/3  |  | /  |
| E-cadherin protein | Age (month) | 18.00±1.16 | 17.50±3.03 | 0.154 | 0.880 |
| Female/Male | 2/6 | 4/6 |  | 0.188 |

qRT-PCR 1, for miR-34/449 family; qRT-PCR 2, for miR-200a/b/c and E-cadherin measurement.

Table 2. The primers of qRT-PCR for miRNA and E-cadherin.

|  |  |  |
| --- | --- | --- |
|  | Forward primer (5’-3’） | Uni-Reverse primer  |
| miR-34b-3p | CAAUCACUAACUCCACUGCCAU | Poly(A) |
| miR-34b-5p | UAGGCAGUGUCAUUAGCUGAUUG | Poly(A)  |
| miR-34c-3p | AAUCACUAACCACACGGCCAGG | Poly(A)  |
| miR-34c-5p | AGGCAGUGUAGUUAGCUGAUUGC | Poly(A)  |
| miR-449a | UGGCAGUGUAUUGUUAGCUGGU | Poly(A)  |
| miR-449b-5p | AGGCAGUGUAUUGUUAGCUGGC | Poly(A)  |
| miR-200a-3p | UAACACUGUCUGGUAACGAUGU | Poly(A)  |
| miR-200a-5p | CAUCUUACCGGACAGUGCUGGA | Poly(A)  |
| miR-200b-3p | UAAUACUGCCUGGUAAUGAUGA | Poly(A)  |
| miR-200b-5p | CAUCUUACUGGGCAGCAUUGGA | Poly(A)  |
| miR-200c-3p | UAAUACUGCCGGGUAAUGAUGGA | Poly(A)  |
| miR-141-3p | UAACACUGUCUGGUAAAGAUGG | Poly(A)  |
| miR-429 | UAAUACUGUCUGGUAAAACCGU | Poly(A)  |
| E-cadherin | CCCAATACATCTCCCTTCACAG | CCACCTCTAAGGCCATCTTTG |
| GAPDH | ACATCGCTCAGACACCATG | TGTAGTTGAGGTCAATGAAGGG |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| miRNAs | Control group | Asthma group | Fold | FDR | P value |
| miR-6758-5p | 9.01 | 18.1 | 2.01 | 0.484 | 0.0347  |
| miR-1183 | 19.08 | 39.7 | 2.08 | 0.484 | 0.0389  |
| miR-4533 | 8.19 | 17.11 | 2.09 | 0.343 | 0.0158  |
| miR-204-3p | 102.68 | 221.76 | 2.16 | 0.484 | 0.0295  |
| miR-4485 | 405.86 | 909.88 | 2.24 | 0.465 | 0.0274  |
| miR-4417 | 269.2 | 610.4 | 2.27 | 0.291 | 0.0064  |
| miR-6772-5p | 16.42 | 37.78 | 2.3 | 0.465 | 0.0276  |
| miR-4430 | 89.75 | 207.83 | 2.32 | 0.191 | 0.0021  |
| miR-6780b-5p | 114.55 | 266.98 | 2.33 | 0.291 | 0.0101  |
| miR-3135b | 609.67 | 1517.93 | 2.49 | 0.502 | 0.0474  |
| miR-7515 | 3.63 | 9.02 | 2.49 | 0.291 | 0.0076  |
| miR-212-3p | 18.27 | 45.95 | 2.52 | 0.291 | 0.0088  |
| miR-6126 | 641.54 | 1686.57 | 2.63 | 0.291 | 0.0078  |
| miR-1304-5p | 2.26 | 5.98 | 2.65 | 0.291 | 0.0057  |
| miR-1290 | 29.03 | 84.67 | 2.92 | 0.465 | 0.0271  |
| miR-503-5p | 22.28 | 66.01 | 2.96 | 0.501 | 0.0455  |
| miR-4484 | 1676.68 | 5244.55 | 3.13 | 0.248 | 0.0040  |
| miR-3197 | 316.76 | 997.93 | 3.15 | 0.11 | 0.0007  |
| miR-199a-3p | 17.67 | 61.17 | 3.46 | 0.484 | 0.0353  |
| miR-199b-3p | 17.67 | 61.17 | 3.46 | 0.484 | 0.0353  |
| miR-424-3p | 22.78 | 81.53 | 3.58 | 0.291 | 0.0055  |
| miR-143-3p | 70.22 | 260.26 | 3.71 | 0.51 | 0.0499  |

Table 3**.** 22 up-regulated miRNAs in the BALF cells from asthmatic children

miRNA, microRNA; miR, microRNA; FDR, false discovery rate.

Table 4. 43 down-regulated miRNAs in the BALF cell from asthmatic children

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| miRNAs | Control group | Asthma group | Fold | FDR | P value |
| miR-34b-5p | 783.54 | 53.52 | 0.068 | 0.188 | 0.0019 |
| miR-34b-3p | 322.1 | 25.76 | 0.080 | 0.11 | 0.0008 |
| miR-34c-5p | 3018.51 | 262.73 | 0.087 | 0.11 | 0.0002 |
| miR-3613-5p | 38.32 | 4.31 | 0.11 | 0.484 | 0.0322 |
| miR-34c-3p | 4005.68 | 518.27 | 0.13 | 0.11 | 0.0005 |
| miR-141-3p | 204.52 | 34.42 | 0.17 | 0.248 | 0.0038 |
| miR-1180-3p | 356.93 | 66.61 | 0.19 | 0.11 | 0.0006 |
| miR-183-5p | 46.05 | 10.7 | 0.23 | 0.362 | 0.0176 |
| miR-23b-5p | 22.54 | 5.23 | 0.23 | 0.165 | 0.0013 |
| miR-100-5p | 682.02 | 162.34 | 0.24 | 0.11 | 0.0007 |
| miR-4521 | 86.39 | 22.2 | 0.26 | 0.291 | 0.0090 |
| miR-92b-3p | 1071.46 | 293.89 | 0.27 | 0.221 | 0.0031 |
| miR-708-5p | 1197.73 | 323.96 | 0.27 | 0.291 | 0.0087 |
| miR-31-5p | 1383.62 | 384.57 | 0.28 | 0.202 | 0.0026 |
| miR-224-3p | 55.53 | 15.73 | 0.28 | 0.291 | 0.0078 |
| miR-27b-5p | 25.74 | 7.25 | 0.28 | 0.328 | 0.0130 |
| miR-200a-3p | 811.89 | 232.8 | 0.29 | 0.291 | 0.0101 |
| miR-486-5p | 196.21 | 56.26 | 0.29 | 0.484 | 0.0334 |
| miR-449b-5p | 5369.64 | 1554.17 | 0.29 | 0.343 | 0.0159 |
| miR-449a | 6108.97 | 1822.16 | 0.3 | 0.328 | 0.0129 |
| miR-429 | 11.83 | 3.61 | 0.31 | 0.484 | 0.0396 |
| miR-205-5p | 2102.56 | 662.94 | 0.32 | 0.291 | 0.0096 |
| miR-200b-3p | 1051.36 | 344.31 | 0.33 | 0.328 | 0.0140 |
| miR-99a-3p | 13.16 | 4.52 | 0.34 | 0.11 | 0.0005 |
| miR-182-5p | 296.77 | 101.35 | 0.34 | 0.484 | 0.0365 |
| miR-125b-2-3p | 96.1 | 32.85 | 0.34 | 0.166 | 0.0015 |
| miR-3065-3p | 32.26 | 10.86 | 0.34 | 0.312 | 0.0113 |
| miR-200b-5p | 422.89 | 146.64 | 0.35 | 0.328 | 0.0137 |
| miR-375 | 546.2 | 200.49 | 0.37 | 0.341 | 0.0152 |
| miR-1287-5p | 31.79 | 12.21 | 0.38 | 0.291 | 0.0087 |
| miR-3065-5p | 46.89 | 17.87 | 0.38 | 0.291 | 0.0094 |
| miR-200a-5p | 158.74 | 62.44 | 0.39 | 0.484 | 0.0414 |
| miR-200c-3p | 10782.52 | 4266.59 | 0.4 | 0.291 | 0.0103 |
| miR-2110 | 417.78 | 174.96 | 0.42 | 0.362 | 0.0181 |
| miR-3176 | 60.32 | 25.56 | 0.42 | 0.484 | 0.0406 |
| miR-513b-5p | 10.24 | 4.36 | 0.43 | 0.328 | 0.0142 |
| miR-452-5p | 12.79 | 5.58 | 0.44 | 0.484 | 0.0407 |
| miR-27b-3p | 758.69 | 342.1 | 0.45 | 0.291 | 0.0088 |
| miR-149-5p | 41.33 | 18.49 | 0.45 | 0.202 | 0.0025 |
| miR-99a-5p | 2359.17 | 1129.5 | 0.48 | 0.291 | 0.0086 |
| miR-125b-5p | 2889.92 | 1411.2 | 0.49 | 0.454 | 0.0247 |
| miR-769-5p | 138.14 | 68.22 | 0.49 | 0.291 | 0.0093 |
| miR-2278 | 14.51 | 7.13 | 0.49 | 0.291 | 0.0087 |