**Supplementary Table 1**: RT-qPCR Cq data for miR-23a-3p, miR-451a and ΔCq (miR-23a-miR-451).

|  |  |  |  |
| --- | --- | --- | --- |
| **Samplename** | **miR-23a-3p** | **miR-451a** | **miR23a-miR451a** |
| NPC0023 | 30.97 | 27.96 | 3.01 |
| NPC0027 | 30.12 | 26.56 | 3.56 |
| NPC0028 | 30.03 | 27.63 | 2.4 |
| NPC0031 | 28.34 | 23.16 | 5.18 |
| NPC0032 | 29.62 | 26.94 | 2.68 |
| NPC0036 | 30.6 | 26.98 | 3.62 |
| NPC0038 | 31.02 | 27.16 | 3.86 |
| NPC0039 | 28.52 | 26.81 | 1.71 |
| NPC0043 | 30.15 | 26.46 | 3.69 |
| NPC0045 | 30.15 | 26.67 | 3.48 |
| NPC0047 | 29.87 | 27.29 | 2.58 |
| NPC0049 | 22.63 | 25.3 | -2.67 |
| NPC0052 | 30.65 | 27.01 | 3.64 |
| NPC0054 | 30.59 | 26.53 | 4.06 |
| NPC0055 | 28.88 | 27.65 | 1.23 |
| NPC0056 | 28.53 | 23.72 | 4.81 |
| NPC0060 | 30.03 | 26.16 | 3.87 |
| NPC0062 | 19.76 | 19.3 | 0.46 |
| NPC0063 | 22.09 | 26.08 | -3.99 |
| NPC0067 | 31.57 | 28.63 | 2.94 |
| NPC0068 | 28.04 | 25.09 | 2.95 |
| NPC0070 | 30.18 | 27.76 | 2.42 |
| NPC0076 | 20.71 | 22.29 | -1.58 |
| NPC0077 | 23.79 | 22.72 | 1.07 |
| PAC0006 | 24.9 | 20.6 | 4.3 |
| PAC0007 | 28.3 | 23.6 | 4.7 |
| PAC0008 | 27.6 | 21.2 | 6.4 |
| PAC0009 | 28.3 | 21.9 | 6.3 |
| PAC0010 | 28.3 | 24.1 | 4.3 |
| PAC0011 | 29.3 | 23.5 | 5.7 |
| PAC0012 | 27.3 | 23.5 | 3.8 |
| PAC0013 | 27.7 | 22.4 | 5.3 |
| PAC0014 | 26.9 | 21.8 | 5.1 |
| PAC0015 | 26.8 | 22.1 | 4.8 |
| PAC0016 | 27.6 | 22.2 | 5.4 |
| PAC0017 | 27.6 | 23.4 | 4.1 |
| PAC0018 | 25 | 22.1 | 2.9 |
| PAC0019 | 27.12 | 26.92 | 0.2 |
| PAC0020 | 25.7 | 20.2 | 5.5 |
| PAC0021 | 25.1 | 21.9 | 3.2 |
| PAC0022 | 0 | 0 | 0 |
| PAC0023 | 26.8 | 22.1 | 4.7 |
| PAC0024 | 27 | 22.8 | 4.2 |
| PAC0025 | 27.3 | 22.6 | 4.7 |
| PAC0026 | 27 | 22.6 | 4.4 |
| PAC0027 | 27.1 | 20.7 | 6.4 |
| PAC0029 | 26.1 | 21.7 | 4.4 |
| PAC0030 | 26.3 | 19.8 | 6.6 |
| PAC0031 | 26.3 | 23.7 | 2.6 |
| PAC0032 | 27.2 | 22.2 | 5 |
| PAC0033 | 26 | 18.4 | 7.6 |
| PAC0034 | 27.1 | 19.6 | 7.4 |
| PAC0035 | 27.8 | 23 | 4.8 |
| PAC0036 | 26.8 | 20.8 | 6 |
| PAC0037 | 27.6 | 23.5 | 4.1 |
| PAC0038 | 26.8 | 21.2 | 5.6 |
| PAC0039 | 26.1 | 21.7 | 4.4 |
| PAC0040 | 25.9 | 21.7 | 4.2 |
| PAC0041 | 27.5 | 19.6 | 7.9 |
| PAC0042 | 27.6 | 22.6 | 5 |
| PAC0043 | 28.4 | 24.1 | 4.3 |
| PAC0044 | 26.5 | 20.5 | 6 |
| PAC0045 | 27.3 | 20.5 | 6.8 |
| PAC0046 | 26.5 | 21.8 | 4.7 |
| PAC0047 | 27.2 | 21.9 | 5.3 |
| PAC0048 | 28 | 21 | 7 |
| PAC0049 | 26.5 | 21.7 | 4.9 |
| PAC0050 | 26.9 | 19.9 | 7 |
| PAC0051 | 24.5 | 16.7 | 7.8 |
| PAC0052 | 27.1 | 21.9 | 5.2 |
| PAC0053 | 25.6 | 19.6 | 6 |
| PAC0054 | 25.3 | 16.9 | 8.4 |
| PAC0055 | 26.8 | 21.1 | 5.8 |
| PAC0056 | 26.6 | 19 | 7.6 |
| PAC0057 | 26.1 | 22.6 | 3.5 |
| PAC0058 | 26.8 | 22 | 4.8 |
| PAC0059 | 26.2 | 22 | 4.2 |
| PAC0060 | 27.3 | 24 | 3.3 |
| PAC0062 | 26.6 | 19.2 | 7.4 |
| PAC0063 | 28 | 22.9 | 5.2 |
| PAC0064 | 27.6 | 21.6 | 6 |
| PAC0065 | 24.1 | 22.2 | 2 |
| PAC0068 | 25.49 | 16.87 | 8.62 |
| PAC0069 | 25.7 | 19.9 | 5.8 |
| PAC0070 | 26.8 | 22.3 | 4.5 |
| PAC0071 | 26.3 | 19.9 | 6.5 |
| PAC0072 | 27.1 | 21.7 | 5.3 |
| PAC0074 | 27 | 21.3 | 5.7 |
| PAC0075 | 27.1 | 22.5 | 4.6 |
| PAC0076 | 26.9 | 21.3 | 5.6 |
| PAC0077 | 23.7 | 17.8 | 5.9 |
| PAC0078 | 28 | 21.2 | 6.8 |
| PAC0083 | 26.4 | 20.8 | 5.5 |
| PAC0084 | 26.5 | 19.5 | 7 |
| PAC0086 | 25.1 | 19.7 | 5.4 |
| PAC0087 | 28.5 | 23 | 5.6 |
| PAC0088 | 27.1 | 21.9 | 5.3 |
| PAC0091 | 26 | 20.7 | 5.3 |
| PAC0092 | 27.98 | 24.19 | 3.79 |
| PAC0093 | 26.5 | 21.7 | 4.9 |
| PAC0094 | 24.66 | 22.88 | 1.78 |
| PAC0097 | 27.2 | 23 | 4.3 |
| PAC0098 | 27.2 | 22.6 | 4.6 |
| PAC0099 | 26.2 | 22.6 | 3.5 |
| PAC0100 | 26.6 | 21.5 | 5.2 |
| PAC0101 | 28.1 | 24.96 | 3.14 |
| PAC0102 | 26.9 | 21.3 | 5.5 |
| PAC0103 | 27.7 | 22.2 | 5.5 |
| PAC0105 | 25.5 | 18 | 7.5 |
| PAC0106 | 28.06 | 23.97 | 4.09 |
| PAC0107 | 25.7 | 19.9 | 5.8 |
| PAC0108 | 26.8 | 22.4 | 4.3 |
| PAC0109 | 27.6 | 22.6 | 5 |
| PAC0110 | 24.01 | 14.18 | 9.83 |
| PAC0111 | 26.3 | 21.7 | 4.5 |
| PAC0113 | 25.77 | 24.91 | 0.86 |
| PAC0114 | 27.6 | 22.8 | 4.8 |
| PAC0117 | 27.7 | 22.6 | 5.1 |
| PAC0118 | 26.3 | 23 | 3.3 |
| PAC0120 | 27.1 | 20.6 | 6.5 |
| PAC0121 | 24.1 | 14.69 | 9.41 |
| PAC0122 | 26.6 | 21 | 5.6 |
| PAC0124 | 27.2 | 21.5 | 5.7 |
| PAC0125 | 27.79 | 25.62 | 2.17 |
| PAC0126 | 28.45 | 25.79 | 2.66 |
| PAC0127 | 26.1 | 22.6 | 3.6 |
| PAC0128 | 26.99 | 21.2 | 5.79 |
| PAC0129 | 27.4 | 20.9 | 6.5 |
| PAC0130 | 27.62 | 25.47 | 2.15 |
| PAC0131 | 25.7 | 18.9 | 6.8 |
| PAC0134 | 27.6 | 24.5 | 3.1 |
| PAC0135 | 27.44 | 25.53 | 1.91 |
| PAC0137 | 27.66 | 26.15 | 1.51 |
| PAC0139 | 28.3 | 24.7 | 3.5 |
| PAC0140 | 26.4 | 21.7 | 4.8 |
| PAC0141 | 27.48 | 23.29 | 4.19 |
| PAC0148 | 23.24 | 23.08 | 0.16 |
| PAC0183 | 28.51 | 22.9 | 5.61 |
| PAC0186 | 27.93 | 23.28 | 4.65 |
| PAC0191 | 28.26 | 24.55 | 3.71 |
| PAC0193 | 27.71 | 23.8 | 3.91 |
| PAC0196 | 27.85 | 24.26 | 3.59 |
| PAC0198 | 22.7 | 21.75 | 0.95 |
| PAC0200 | 26.34 | 23.66 | 2.68 |
| PAC0202 | 25.66 | 21.08 | 4.58 |
| PAC0203 | 27.78 | 24.64 | 3.14 |
| PAC0204 | 28.06 | 25.41 | 2.65 |
| PAC0208 | 28.42 | 24.02 | 4.4 |
| PAC0211 | 28.54 | 23.81 | 4.73 |
| PAC0214 | 28.13 | 24.09 | 4.04 |
| PAC0215 | 26.74 | 21.46 | 5.28 |
| PAC0219 | 25.29 | 19.56 | 5.73 |
| PAC0221 | 30.3 | 27.78 | 2.52 |
| PAC0222 | 28.45 | 25.11 | 3.34 |

**Supplementary Table 2:** Fastq input miRNA transcript reads, post deduplication reads and final raw miRNA read counts for 154 small RNA libraries prepared from human plasma.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sample name** | **Raw fastq input (reads)** | **Deduplicated (reads)** | **miRNA read counts** |
| NPC0023 | 22115739 | 2958731 | 397785 |
| NPC0027 | 21356828 | 2452817 | 636546 |
| NPC0028 | 20991983 | 2154148 | 618869 |
| NPC0031 | 20192147 | 3336966 | 1665307 |
| NPC0032 | 22862368 | 3853573 | 444587 |
| NPC0036 | 17866001 | 1846076 | 508899 |
| NPC0038 | 23149972 | 2124446 | 421916 |
| NPC0039 | 18752453 | 2325894 | 899762 |
| NPC0043 | 26928415 | 3454945 | 1431662 |
| NPC0045 | 19331099 | 2104121 | 805841 |
| NPC0047 | 21006679 | 3234956 | 467117 |
| NPC0049 | 22358776 | 9607474 | 7849490 |
| NPC0052 | 22535480 | 2716210 | 662682 |
| NPC0054 | 18918358 | 1990118 | 640401 |
| NPC0055 | 16597654 | 1806648 | 539877 |
| NPC0056 | 17356305 | 4016750 | 2555229 |
| NPC0060 | 19168742 | 3330896 | 1792853 |
| NPC0062 | 20869872 | 16489420 | 14292316 |
| NPC0063 | 24114415 | 9901610 | 6564978 |
| NPC0067 | 18250906 | 1526180 | 468502 |
| NPC0068 | 19494694 | 3648427 | 2112023 |
| NPC0070 | 19737235 | 2233061 | 652478 |
| NPC0076 | 21506427 | 12946014 | 9230252 |
| NPC0077 | 20907552 | 9208626 | 6644178 |
| PAC0006 | 13499333 | 6395995 | 5473413 |
| PAC0007 | 17886809 | 2626428 | 1583760 |
| PAC0008 | 15220196 | 4859650 | 4138450 |
| PAC0009 | 15396709 | 1760539 | 1150344 |
| PAC0010 | 17861430 | 1088465 | 246839 |
| PAC0011 | 13768473 | 1391040 | 832428 |
| PAC0012 | 18679632 | 1900243 | 974681 |
| PAC0013 | 18798024 | 2243782 | 1441303 |
| PAC0014 | 11920045 | 2391027 | 1750602 |
| PAC0015 | 16817362 | 2681331 | 1949551 |
| PAC0016 | 13333607 | 1580370 | 1098202 |
| PAC0017 | 21946704 | 2173240 | 614556 |
| PAC0018 | 25670396 | 3963868 | 1698961 |
| PAC0019 | 17257060 | 3302237 | 1651593 |
| PAC0020 | 11403327 | 1513110 | 837263 |
| PAC0021 | 16675098 | 3350180 | 1865251 |
| PAC0022 | 9986347 | 1327207 | 969657 |
| PAC0023 | 19732775 | 3573248 | 1863899 |
| PAC0024 | 16991778 | 1465845 | 1002356 |
| PAC0025 | 25149925 | 2732735 | 1819211 |
| PAC0026 | 20855412 | 2159412 | 1228565 |
| PAC0027 | 18108458 | 5757101 | 4888994 |
| PAC0029 | 32737071 | 5587247 | 2375484 |
| PAC0030 | 16556439 | 6875039 | 5961541 |
| PAC0031 | 41344361 | 2906148 | 1669793 |
| PAC0032 | 18073547 | 1449039 | 561902 |
| PAC0033 | 23636907 | 8870545 | 7358579 |
| PAC0034 | 16928394 | 4539701 | 3965204 |
| PAC0035 | 18436543 | 2036908 | 1300556 |
| PAC0036 | 21347320 | 4541616 | 3757899 |
| PAC0037 | 17501811 | 1865479 | 1114976 |
| PAC0038 | 16902859 | 3754502 | 2776600 |
| PAC0039 | 13288298 | 2710397 | 1992916 |
| PAC0040 | 20997021 | 3073084 | 1690702 |
| PAC0041 | 19451013 | 1884600 | 793664 |
| PAC0042 | 26923787 | 4271551 | 1060118 |
| PAC0043 | 28144001 | 3953868 | 1193638 |
| PAC0044 | 17756965 | 6044948 | 4867705 |
| PAC0045 | 22623750 | 4745452 | 3104322 |
| PAC0046 | 22873955 | 4867212 | 1017930 |
| PAC0047 | 17146656 | 3164367 | 2308960 |
| PAC0048 | 12360977 | 2650639 | 2238741 |
| PAC0049 | 16268511 | 2456243 | 1882088 |
| PAC0050 | 19919796 | 1272959 | 593515 |
| PAC0051 | 24228883 | 11561779 | 10915378 |
| PAC0052 | 18239195 | 3680875 | 2876722 |
| PAC0053 | 16995313 | 6663110 | 5911050 |
| PAC0054 | 13787042 | 9587976 | 9029099 |
| PAC0055 | 15929307 | 4193083 | 2729231 |
| PAC0056 | 15719501 | 6531465 | 5919824 |
| PAC0057 | 21978888 | 4387336 | 1857376 |
| PAC0058 | 17167154 | 2728278 | 2098531 |
| PAC0059 | 17486822 | 2269094 | 1565273 |
| PAC0060 | 19918018 | 3129162 | 1939971 |
| PAC0062 | 15454466 | 5271590 | 4616245 |
| PAC0063 | 17571665 | 3795431 | 2927415 |
| PAC0064 | 16985718 | 3828042 | 2760312 |
| PAC0065 | 22226706 | 3123668 | 1449396 |
| PAC0068 | 22498404 | 16292739 | 15567951 |
| PAC0069 | 21580083 | 5828841 | 3731119 |
| PAC0070 | 24182690 | 4186314 | 2002712 |
| PAC0071 | 21409070 | 6108501 | 4785422 |
| PAC0072 | 24055143 | 3287335 | 1007544 |
| PAC0074 | 22748744 | 3874955 | 2185280 |
| PAC0075 | 18336073 | 3307734 | 1249185 |
| PAC0076 | 18654410 | 3671714 | 1802879 |
| PAC0077 | 18176257 | 8831911 | 7483202 |
| PAC0078 | 18294057 | 4907862 | 3213923 |
| PAC0083 | 23499257 | 5159682 | 3392562 |
| PAC0084 | 19601257 | 8230257 | 7129870 |
| PAC0086 | 15217270 | 5494754 | 4381233 |
| PAC0087 | 15344146 | 3000326 | 1149138 |
| PAC0088 | 17505530 | 3598582 | 1934177 |
| PAC0091 | 15105754 | 4309177 | 2948193 |
| PAC0092 | 19456100 | 3670226 | 1935105 |
| PAC0093 | 15383409 | 3595044 | 2000150 |
| PAC0094 | 19597187 | 6238636 | 4449920 |
| PAC0097 | 17379925 | 2447129 | 778399 |
| PAC0098 | 12005054 | 1606195 | 672936 |
| PAC0099 | 12778333 | 2147215 | 1028451 |
| PAC0100 | 11354700 | 2266612 | 1207815 |
| PAC0101 | 19734161 | 2727075 | 1143375 |
| PAC0102 | 14709328 | 3072430 | 1299031 |
| PAC0103 | 13761086 | 3243221 | 1667009 |
| PAC0105 | 11864004 | 6392137 | 5719697 |
| PAC0106 | 19572433 | 2808002 | 1634823 |
| PAC0107 | 12638028 | 4160806 | 2947308 |
| PAC0108 | 12474012 | 2704214 | 1380898 |
| PAC0109 | 15553451 | 2164160 | 460134 |
| PAC0110 | 26120715 | 19140380 | 18641863 |
| PAC0111 | 21531387 | 4160597 | 1209416 |
| PAC0113 | 16953327 | 4784311 | 2749800 |
| PAC0114 | 16668550 | 2912070 | 866180 |
| PAC0117 | 13521230 | 2486485 | 1375338 |
| PAC0118 | 12361765 | 1757172 | 636742 |
| PAC0120 | 12147691 | 2980568 | 2201136 |
| PAC0121 | 24786165 | 17706277 | 17222719 |
| PAC0122 | 12484749 | 3574034 | 2371165 |
| PAC0124 | 15236147 | 3802741 | 2337603 |
| PAC0125 | 20779915 | 3536303 | 1363130 |
| PAC0126 | 17762655 | 3203072 | 1167065 |
| PAC0127 | 13295775 | 2820717 | 1181780 |
| PAC0128 | 22076329 | 8922991 | 7858060 |
| PAC0129 | 14164266 | 3872756 | 2771274 |
| PAC0130 | 21605735 | 2897703 | 1239513 |
| PAC0131 | 12284309 | 2891299 | 2063370 |
| PAC0134 | 15129205 | 2206653 | 339500 |
| PAC0135 | 19944145 | 2966779 | 1467495 |
| PAC0137 | 20963374 | 2686728 | 1339868 |
| PAC0139 | 15343796 | 2226675 | 489689 |
| PAC0140 | 13274768 | 1523074 | 795677 |
| PAC0141 | 22607072 | 3463741 | 1965665 |
| PAC0148 | 23681611 | 8260509 | 6425353 |
| PAC0183 | 23517156 | 4717400 | 2200924 |
| PAC0186 | 19635620 | 4326816 | 2771126 |
| PAC0191 | 18004501 | 3628940 | 2294959 |
| PAC0193 | 19660009 | 3992073 | 2763262 |
| PAC0196 | 20748249 | 4702419 | 3507401 |
| PAC0198 | 26146693 | 10110791 | 8400325 |
| PAC0200 | 17075771 | 2963984 | 1701695 |
| PAC0202 | 20252075 | 7402251 | 6059922 |
| PAC0203 | 20036496 | 2847663 | 1403881 |
| PAC0204 | 20451711 | 2777709 | 1289361 |
| PAC0208 | 21777870 | 4306092 | 2701498 |
| PAC0211 | 18970297 | 4182825 | 3013416 |
| PAC0214 | 18087088 | 3112590 | 2070466 |
| PAC0215 | 18158500 | 8542426 | 7697166 |
| PAC0219 | 21438183 | 10965556 | 10128918 |
| PAC0221 | 13416487 | 2362533 | 558329 |
| PAC0222 | 14624780 | 2889130 | 976673 |