**Supplementary Table S1**: Primer sequences used for reverse transcription and real-time PCR.

|  |  |  |
| --- | --- | --- |
| **Gene Name** | **Direction** | **Primer Sequence (5′-3′)** |
| Oligo dT for reverse transcription | - | CAGGTCCAGTTTTTTTTTTTTTTTTVN |
| piR-37524 | Forward | GCAGTAAGGTGCATCTAGTGCA |
| Reverse | GGTCCAGTTTTTTTTTTTTTTTACTTCACTAT |
| piR-31143 | Forward | AGCGTTGGTGGTATAGTGGTGA |
| Reverse | CAGTTTTTTTTTTTTTTTGCAGCTATGC |
| piR-39614 | Forward | GCAGTAGGATGTCGTGATGGGA |
| Reverse | CCAGTTTTTTTTTTTTTTTGAGCTCGG |
| piR-49145 | Forward | CAGTGAGGTAGTAGGTTGTATGGTTT |
| Reverse | GGTCCAGTTTTTTTTTTTTTTTGTAACTCT |
| piR-42111 | Forward | AGTCCAAAGGAGTGCTTGTGGA |
| Reverse | GTCCAGTTTTTTTTTTTTTTTGATCCGAT |
| piR-35406 | Forward | GCCCCTGTGATGAGTTGCCA |
| Reverse | CCAGTTTTTTTTTTTTTTTCCGTATTAGCA |
| RNU6B | Forward | CGCTTCGGCAGCACATATACTA |
| Reverse | ACGCTTCACGAATTTGCGT |
| hsa-miR-92a-3p | Forward | GCAGTATTGCACTTGTCCCG |
| Reverse | CAGGTCCAGTTTTTTTTTTTTTTTACAGGC |
| ALOXE3 | Forward | GCTGCTCTTCAATGCCATCCCT |
|  | Reverse | TGTCGTGAAGGTCTTATGGCACC |
| HMOX1 | Forward | CCAGGCAGAGAATGCTGAGTTC |
| Reverse | AAGACTGGGCTCTCCTTGTTGC |
| TNFAIP3 | Forward | CTCAACTGGTGTCGAGAAGTCC |
| Reverse | TTCCTTGAGCGTGCTGAACAGC |
| ARL14 | Forward | ACAGTCTGGGATGTTGGAGGAC |
| Reverse | CTGTCTCTGAGACTCTTCCAGTC |
| DHRS2 | Forward | GGTGCTGTCATCCTGGTCTCTT |
| Reverse | CCAGCTCCAATGCCAGTGTTCT |
| H4C14 | Forward | ACATTCAGGGCATCACCAAGCC |
| Reverse | TCTCCAGGAACACCTTCAGCAC |
| GAPDH | Forward | GTCTCCTCTGACTTCAACAGCG |
| Reverse | ACCACCCTGTTGCTGTAGCCAA |

**Supplementary Table S2**: Literature report of the piRNAs selected for preliminary investigation.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **piRNA** | **Accession** | **Alias** | **Significantly Expressed piRNAs in CRC** | | **Role in Cancer** | **Reported Expression** |
| **Fold Change** | ***p*-Value** |
| piR-37524 | DQ599458 | piR-hsa-29715, PIR60569 | 3.64 | 1.78 × 10−3 | Bladder cancer [22] | Upregulation |
| Head and neck squamous cell carcinoma [23] | Upregulation |
| piR-31143 | DQ571031 | piR-hsa-1282, PIR32142 | 4.32 | 1.96 × 10−3 | Multiple Myeloma [47] | Upregulation |
| Renal cell carcinoma [48,49] | Downregulation |
| Prostate carcinoma [50] | Upregulation |
| Gastric cancer [26, 51] | Downregulation |
| Breast cancer [50, 52] | Upregulation |
| Hepatocellular carcinoma [53] | Upregulation |
| Colorectal cancer [54, 55] | Upregulation |
| piR-39614 | DQ601548 | piR-hsa-31788, PIR62659 | −10.51 | 1.88 × 10−2 | Bladder cancer [22] | Upregulation |
| piR-49145 | DQ581033 | piR-hsa-11362, PIR42144 | −7.57 | 3.59 × 10−7 | Head and neck squamous cell carcinoma [23, 56] | Downregulation |
| piR-42111 | DQ573999 | piR-hsa-4276, PIR35110 | −6.61 | 1.66 × 10−2 | Not reported |  |
| piR-35406 | DQ597340 | piR-hsa-27615, PIR58451 | −3.86 | 3.16 × 10−3 | Not reported |  |