

Figure S1. The schemes and characteristics of piRNAs and gRNAs interaction with involving canonical and non-canonical nucleotide pairs.

piRNA; BS, nt; Region; ΔG , kJ/mol; $\Delta G/\Delta G_m$, %; piRNA length, nt

piR-134104; 7176; CDS; -102; 80; 26

5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -GUUUUUGAUAUGUUAGAUGAUGGAGU-5'

piR-136315; 7176; CDS; -102; 80; 26

5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||

3' -AUUUUUGAUAUGUUUGGAUGAUGGAGU-5'

piR-140212; 7178; CDS; -93; 80; 24

5' -GAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -AUUUGAUAUGUUAGAUGAUGGAGU-5'

piR-146606; 7178; CDS; -100; 84; 24

5' -GAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -CUUUGAUAUGUUAGAUGAUGGAGU-5'

piR-151338; 7179; CDS; -96; 80; 24

5' -AAACUAUACAAAUUACCAUUUCAU-3'
 |||||

3' -CUUGAUAUGUUAGAUGAUGGAGUA-5'

piR-152752; 7177; CDS; -100; 81; 25

5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -ACUUUGAUAUGUUAGAUGAUGGAGU-5'

piR-156867; 7178; CDS; -93; 80; 24

5' -GAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -UUUUGUUAUGUUGAAUGAUGGAGU-5'

piR-158266; 7178; CDS; -98; 82; 24

5' -GAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -UUUUGACAUGUUUGAUGAUGGAGU-5'

piR-161744; 7178; CDS; -96; 80; 24

5' -GAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -AUUUGACAUGUUUGAUGAUGGAGU-5'

piR-170126; 7178; CDS; -102; 80; 25

5' -GAAACUAUACAAAUUACCAUUUCAU-3'
 |||||

3' -CUUUGAUAUGUUGGAUGAUGGAGUG-5'

piR-172551; 7176; CDS; -102; 80; 26

5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -ACUUUUGAUAUGUUAGAUGAUGGAGU-5'

piR-172553; 7176; CDS; -106; 81; 26

5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -GUCUUUGAUAUGUUGGAUGAUGGAGU-5'

piR-174280; 7177; CDS; -102; 80; 25

5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -UCUUUGGUAUGUUGGAUGAUGGAGU-5'

piR-175524; 7177; CDS; -106; 85; 25

5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||

3' -UCUUUGACAUGUUUGAUGAUGGAGU-5'

piR-175963; 7177; CDS; -100; 81; 24
 5'-AGAAACUAUACAAAUUACCAUUUC-3'
 |||||
 3'-CCUUUGACAUGUUUGAUGAUGGAG-5'
 piR-177814; 7176; CDS; -104; 80; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-GUUUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-178110; 7178; CDS; -98; 81; 24
 5'-GAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-CCUUGAUUUGUUAGAUGAUGGAGU-5'
 piR-178851; 7178; CDS; -98; 81; 24
 5'-GAAACUAUACAAAUUACCAUUUCA-3'
 | |||||
 3'-CAUUGACAUGUUUGAUGAUGGAGU-5'
 piR-179510; 7177; CDS; -102; 81; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-CCUUUGAUUUGUUAGAUGAUGGAGU-5'
 piR-179669; 7177; CDS; -102; 80; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-GCUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-179999; 7178; CDS; -96; 80; 24
 5'-GAAACUAUACAAAUUACCAUUUCA-3'
 | |||||
 3'-CAUUGAUUUGUUAGAUGAUGGAGU-5'
 piR-180563; 7177; CDS; -104; 83; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UCUUUGAUUUGUUGGAUGAUGGAGU-5'
 piR-181322; 7177; CDS; -100; 81; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 | |||||
 3'-UAUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-182676; 7176; CDS; -104; 80; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-AUGUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-183206; 7177; CDS; -102; 83; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UUUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-184425; 7178; CDS; -98; 81; 24
 5'-GAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-CUAUGACAUGUUUGAUGAUGGAGU-5'
 piR-184542; 7176; CDS; -108; 84; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-AUCUUUGAUUUGUUGGAUGAUGGAGU-5'
 piR-184841; 7177; CDS; -104; 85; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UCUUUGAUUUGUUAGAUGAUGGAGU-5'
 piR-185870; 7178; CDS; -100; 81; 24
 5'-GAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-CCUUGACAUGUUUGAUGAUGGAGU-5'

piR-186021; 7177; CDS; -102; 80; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-CCUUUGAUAUGUUGGAUGAUGGAGU-5'
 piR-186087; 7176; CDS; -104; 82; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-AUUUUUGAUAUGUUGGAUGAUGGAGU-5'
 piR-186642; 7178; CDS; -96; 80; 24
 5'-GAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-CUAUGAUAUGUUAGAUGAUGGAGU-5'
 piR-187824; 7177; CDS; -102; 80; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UCCUUGAUAUGUUGGAUGAUGGAGU-5'
 piR-188562; 7177; CDS; -102; 81; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UCUCUGAUAUGUUAGAUGAUGGAGU-5'
 piR-188611; 7176; CDS; -102; 80; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-AUGUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-188777; 7177; CDS; -104; 82; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UCUCUGACAUGUUUGAUGAUGGAGU-5'
 piR-189382; 7177; CDS; -102; 81; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UCCUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-189757; 7176; CDS; -104; 82; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UUCUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-189772; 7177; CDS; -102; 81; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-UCAUUGACAUGUUUGAUGAUGGAGU-5'
 piR-190320; 7176; CDS; -104; 80; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UUCUUUGAUAUGUUGGAUGAUGGAGU-5'
 piR-190595; 7176; CDS; -106; 81; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-CUCUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-190864; 7177; CDS; -102; 80; 25
 5'-AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UCUCUGAUAUGUUGGAUGAUGGAGU-5'
 piR-190896; 7175; CDS; -104; 80; 27
 5'-UUAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UAUUUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-191349; 7176; CDS; -108; 85; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-AUCUUUGAUAUGUUAGAUGAUGGAGU-5'

piR-191639; 7176; CDS; -102; 80; 26
 5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -UUUUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-193077; 7177; CDS; -102; 80; 25
 5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -UCUUCGAUAUGUUGGAUGAUGGAGU-5'
 piR-193433; 7176; CDS; -106; 83; 26
 5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -AUUUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-193777; 7177; CDS; -104; 82; 25
 5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -UCCUUGACAUGUUUGAUGAUGGAGU-5'
 piR-193805; 7177; CDS; -100; 81; 25
 5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3' -UCAUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-194123; 7176; CDS; -104; 80; 26
 5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -CUCUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-194172; 7177; CDS; -102; 80; 25
 5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3' -UCGUUGACAUGUUUGAUGAUGGAGU-5'
 piR-194321; 7175; CDS; -104; 80; 27
 5' -UUAGAAACUAUACAAAUUACCAUUUCA-3'
 | |||||
 3' -AUUUUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-194842; 7176; CDS; -102; 80; 26
 5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -AUUCUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-382458; 7176; CDS; -106; 81; 26
 5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -AUCUUUGGUAUGUUGGAUGAUGGAGU-5'
 piR-383400; 7176; CDS; -106; 81; 26
 5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -ACCUUUGAUAUGUUGGAUGAUGGAGU-5'
 piR-384721; 7177; CDS; -98; 81; 25
 5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 ||||| |||||
 3' -UUUUUGUUAUGUUGAAUGAUGGAGU-5'
 piR-390277; 7178; CDS; -98; 82; 24
 5' -GAAACUAUACAAAUUACCAUUUCA-3'
 ||||| |||||
 3' -CUUUGUUAUGUUGAAUGAUGGAGU-5'
 piR-394136; 7177; CDS; -98; 81; 25
 5' -AGAAACUAUACAAAUUACCAUUUCA-3'
 | |||||
 3' -UAUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-394484; 7176; CDS; -108; 82; 26
 5' -UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3' -GUCUUUGACAUGUUUGAUGAUGGAGU-5'

piR-399512; 7177; CDS; -98; 82; 24
 5'-AGAAACUAUACAAAUUACCAUUUC-3'
 |||||
 3'-UUUUUGACAUGUUUGAUGAUGGAG-5'
 piR-402116; 7176; CDS; -104; 82; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-AUUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-402789; 7176; CDS; -106; 81; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 | |||||
 3'-AGCUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-403633; 7176; CDS; -110; 85; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-AUCUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-403847; 7176; CDS; -106; 82; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-UUCUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-403884; 7176; CDS; -108; 82; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-ACCUUUGACAUGUUUGAUGAUGGAGU-5'
 piR-404198; 7175; CDS; -108; 82; 27
 5'-UUAGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-AAACUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-404909; 7176; CDS; -102; 81; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 || |||||
 3'-AUUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-409985; 7176; CDS; -106; 82; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 |||||
 3'-ACCUUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-410131; 7176; CDS; -104; 80; 26
 5'-UAGAAACUAUACAAAUUACCAUUUCA-3'
 ||| |||||
 3'-AUCGUUGAUAUGUUAGAUGAUGGAGU-5'
 piR-2498460; 7178; CDS; -98; 81; 25
 5'-GAAACUAUACAAAUUACCAUUUCAU-3'
 |||||
 3'-AUUUGAUAUGUUAGAUGAUGGAGUA-5'