Supplemental Tables

Supplemental Table S1. List of oligonucleotides and synthetic RNAs used in this study

Oligonucleotide	Sequence (5'-3')	Application
mrDNA (-21/-1), rev	ACCTATCTCCAGGTCCAATAG	ChIP
mrDNA (-21/-1)/T7, rev	TAATACGACTCACTATAGGGAGGG ACCTATCTCCAGGTCCAATAG	In vitro synthesis of PAPAS RNA
mrDNA (-56/-36), rev	GATCACAAGCATAAAAGAGAC	qPCR, RT-qPCR
mrDNA (-135/-117), for	TTCGTTATGGGGTCATTTT	qPCR, RT-qPCR
mrDNA (-160/-140), for	GTTGTTCCTTTGAGGTCCGG	ChIP
T7/mrDNA (-205/-183), for	TAATACGACTCACTATAGGGAGGG ACCTGTCGGTCTTATCAGTTC	cDNA synthesis of mouse PAPAS
mrDNA (-205/-183), for	GACCTGTCGGTCTTATCAGTTC	RT-qPCR
mrDNA (-239/-221), rev	CCCATAGCTTTCCCTCGGC	qPCR
mrDNA (-252/-234), rev	CTCGGCCTCAGACGTACAG	RT-qPCR
mrDNA (-333/-315), for	CGGTCAGCTGGAGCTTTGG	RT-qPCR
mrDNA (-355/-337), for	GGCTTCCAGGCCGATGTG	cDNA synthesis of mouse PAPAS
mrDNA (-365/-347), for	ATTATGGGCCCGGCTTCCA	qPCR
sgRNA1, for	CACCGCAAAGTGTCGCCCGGAGTAC	CRISPR activation
sgRNA1, rev	AAACGTACTCCGGGCGACACTTTGC	CRISPR activation
sgRNA2, for	CACCGCGGACAACTGGTCGACCTAA	CRISPR activation
sgRNA2, rev	AAACTTAGGTCGACCAGTTGTCCGC	CRISPR activation
sgRNA3, for	CACCGGTACTGGTCGACCTATATGA	CRISPR activation
sgRNA3, rev	AAACTCATATAGGTCGACCAGTACC	CRISPR activation

T7/hrDNA (-49/-30), for	TAATACGACTCACTATAGGGAGGG GTATATCTTTCGCTCCGAG	cDNA synthesis of human PAPAS
hrDNA (-49/-30), for (H0)	GGTATATCTTTCGCTCCGAG	ChIP, RT-qPCR
hrDNA (+13/+32), rev (H0)	GACGACAGGTCGCCAGAGGA	ChIP, RT-qPCR
h pre-rRNA for	TGTCAGGCGTTCTCGTCTC	RT-qPCR
h pre-rRNA rev	AGCACGACGTCACCACATC	RT-qPCR
18S rRNA, for	CGCCGCTAGAGGTGAAATTCT	RT-qPCR
18S rRNA, rev	CGAACCTCCGACTTTCGTTCT	RT-qPCR
HOTAIR, for	TGGCCAAGCACCTCTATCTC	RT-qPCR
HOTAIR, rev	TTAATTAGCGCCTCCCAGTC	RT-qPCR
Air, for	ACTTTGACAGAACAATCGGCTCAG	RT-PCR
Air, rev	GAACATTTGCAAAGGACAGTCGAG	RT-PCR
m7SK, for	ATTGATCGCCAGGGTTGATT	RT-qPCR
m7SK, rev	CGGGGAAGGTCGTCCTCTTC	RT-qPCR
mGAPDH, for	GCGGGGCAATCTCAGCTCCC	RT-qPCR
mGAPDH, rev	GCACCCGTAAAGCCGCGAGT	RT-qPCR
T7/IGS$_{16}$, for	TAATACGACTCACTATAGGG AGCATGTAGCAGTTGTAGGAC	In vitro synthesis of IGS$_{16}$ RNA
IGS$_{16}$, for	AGCATGTAGCAGTTGTAGGAC	PCR, qPCR
IGS$_{16}$, rev	TGGAGAGATGGCTCATCGGTT	In vitro synthesis of IGS$_{16}$ RNA, PCR, qPCR
PAPAS -21/-51 WT	AGGAACAGAUAGAAAAGAUCACAAGCAUAAAA	Competitive pulldown
PAPAS -21/-51 A/U	AGGUUCAGAUAGUUUUGUUCUCUUGCUUUUUU	Competitive pulldown

A-rich RNA	GGGGAGGAAAAAAGAAAAAAAAAAAAAAAGAU	Competitive pulldown
GC-rich RNA	GGGAGACUCACUCCACCCCUUCUUCC	Competitive pulldown
PAPAS En3-TFR RNA #1: -275/-336	GAGGGCUUCUGGAGGAAAAAAGAAAAAAAAA AAAAAAGAUCCAAAGCUCCAGCUGACCGGGC	Genomic and PCR DNA captures & competition
PAPAS RNA #2: +5/-55	CAGUUACCUAUCUCCAGGUCCAAUAGGAACAGA UAGAAAAGAUCACAAGCAUAAAAGAGA	Genomic DNA capture
PAPAS RNA -234/-333	CUCGGCCUCAGACGUACAGGGCCCCCGGUGA CAGGGACAGAGAGGGCUUCUGGAGGAAAAA AGAAAAAAAAAAAAAAAAGAUCCAAAGCUCC AGCUGACCG	EMSA
PAPAS RNA -182/-333	GAACUGAUAAGACCGACAGGUCAAUGAAAG AAAACCGCGCCCAUAGCUUUCCCUCGGCCUC AGACGUACAGGGCCCCCGGUGACAGGGACAG AGAGGGCUUCUGGAGGAAAAAAGAAAAAAAA AAAAAAAGAUCCAAAGCUCCAGCUGACCG	EMSA
IGS$_{16}$ RNA	AGCAUGUAGCAGUUGUAGGACACACUAGAC GAGAGCACCAGAUCUCAUUGUGGGUGGUUG UGAACCACCCACCAUGUGGUUGCCUGGGAU UUGAACUCAGGAUCUUCAGAAGACGAGUCA GGGCUCUAAACCGAUGAGCCAUCUCUCCA	EMSA, competition
rDNA -321/-277, sense	GCTTTGGATCTTTTTTTTTTTTTTCTTTTTTCCTC CAGAAGCCC	EMSA
rDNA -321/-277, antisense	GGGCTTCTGGAGGAAAAAAGAAAAAAAAAAAA AAAGATCCAAAGC	EMSA, 5'-labeled oligo

Supplemental Table S2. List of template oligonucleotides used for in vitro transcription of PAPAS

Bold italicized nucleotides denote the mutated regions.

PAPAS T7/-275/-336	GCCCGGTCAGCTGGAGCTTTGGATCTTTTTTTTTTTTTTCTTTTTTCCTCCAGAA GCCCTCCCTATAGTGAGTCGTATTA
PAPAS T7/+5/-55	TCTCTTTTATGCTTGTGATCTTTTCTATCTGTTCCTATTGGACCTGGAGATAGGTA ACTGCCTATAGTGAGTCGTATTA
T7 oligo, for	TAATACGACTCACTATAGGGAG
PAPAS WT (-1/-205)	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACAGGGAGGAAAGTGACAGGCCACAGAGA ATACCTGGAAGTCATACCTGGGGAGGTGGCCCAAAAATGACCCCATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA
PAPAS -60 Mut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACA***AAA***AGGAAAGTGACAGGCCACAGAGA ATACCTGGAAGTCATACCTGGGGAGGTGGCCCAAAAATGACCCCATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA
PAPAS -125 Mut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACAGGGAGGAAAGTGACAGGCCACAGAGA ATACCTGGAAGTCATACCTGGGGAGGTGGCCCAAAAATGAC***TTT***ATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA
PAPAS -60/-125 dMut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACA***AAA***AGGAAAGTGACAGGCCACAGAGA ATACCTGGAAGTCATACCTGGGGAGGTGGCCCAAAAATGAC***TTT***ATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA
PAPAS -72 Mut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACAGGGAGGAAAGTGACA***CACACA***AGAGA ATACCTGGAAGTCATACCTGGGGAGGTGGCCCAAAAATGACCCCATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA
PAPAS -109 Mut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACAGGGAGGAAAGTGACAGGCCACAGAGA ATACCTGGAAGTCATACCTGGGGAG***TGTGTG***CAAAAATGACCCCATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA

PAPAS -72/-109 dMut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACAGGGAGGAAAGTGACA***CACACA***AGAGA ATACCTGGAAGTCATACCTGGGGAG***TGTGTG***CAAAAATGACCCCATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA
PAPAS -87 Mut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACAGGGAGGAAAGTGACAGGCCACAGAGA ATA***CACAC***AAGTCATACCTGGGGAGGTGGCCCAAAAATGACCCCATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA
PAPAS -87/-101 dMut	TAATACGACTCACTATAGGGAGACCTATCTCCAGGTCCAATAGGAACAGATAG AAAAGATCACAAGCATAAAAGAGACAGGGAGGAAAGTGACAGGCCACAGAGA ATA***CACAC***AAGTCATAC***GTGTG***GAGGTGGCCCAAAAATGACCCCATAACGAAA AGAACCGGACCTCAAAGGAACAACTGGTCGACCTGACAACCCGGAGAACTGAT AAGACCGACAGGTCAA