

a

proPIF1a\_Slyc **GTAATTTTGGGGGCCCAACCAAGAC**-----  
 proPIF1a\_Spen -----T-----  
 proPIF1a\_Stub -----TTATCAAGAG-----  
 proPIF1b\_Slyc -----G-----  
 proPIF1b\_Spen -----GCTAAATAATTCACTTTT**GACATTTTGAACATTTGAACTTCTAATTTAAAGTGTGATGTTTTAAGTCAATTTAATTCACCTTATCTAATTTTACA**-----  
 proPIF1b\_Stub -----A-----

110 120 130 140 150 160 170 180 190 200

proPIF1a\_Slyc -----  
 proPIF1a\_Spen -----  
 proPIF1a\_Stub -----  
 proPIF1b\_Slyc -----  
 proPIF1b\_Spen **AAACATTTATCATTTCAATTCAAAGATATGTATTGTGATATTCAGTCTACAACCTTTAAAAATATAACAAATTAATGTCTTAATCTTTTAAAAGGCTCA**-----  
 proPIF1b\_Stub -----

210 220 230 240 250 260 270 280 290 300

proPIF1a\_Slyc -----  
 proPIF1a\_Spen -----  
 proPIF1a\_Stub -----  
 proPIF1b\_Slyc -----  
 proPIF1b\_Spen **AAATATCAAAATTTAAATTTAAGATCCCTCTCTCGATAAGGATATGTATTATTTATAGGAGAAATATGTTGACGTTTGATTGGATTGAAGGCCGATGAC**-----  
 proPIF1b\_Stub -----

310 320 330 340 350 360 370 380 390 400

proPIF1a\_Slyc -----  
 proPIF1a\_Spen -----  
 proPIF1a\_Stub -----  
 proPIF1b\_Slyc -----  
 proPIF1b\_Spen **AAAGCAACAATGATGTT-ATTAAGCAGTCTTATAT---G-CTTTCATAATCAATTAAGAAGAATTATTAAT**  
**AAGAA---CAAGAATTAA-GTTCTTTAATAGTAATATTT-ATTAAGAATCAACATGC**  
**AATAAAATGATGAAAGCT-TTGAAGAAAAGTTAAATAATAGCAATAAAATTAGTGATTGG**  
**AGGAAAAAAGATATTTTGTTCATCAATGATCAACTTCGTCTCAATGCTCATACTGCTCTCAGAA---AAAAAATATTATCTTAATTTAGTATATTTTA**  
**AAATCAATTTCTGCTCTTT-TGCTCATACTCTGCTCTCAG---AATAAATAATCTTAATAAAAATCTATTTCAT**

410 420 430 440 450 460 470 480 490 500

proPIF1a\_Slyc **TGGGTAACCTTTCACATATAGCAAATFAAAAAATATATTTCTATAATATAACAPACTTTTACATAAATGGCGTCCATAACAAA---CATAAAACTGTATA**  
 proPIF1a\_Spen -----TCGCATTTAAAAAAA---AATCTTAATAAACTATTTTAAA---AATGATTTCTTTTACTCATTTTCAGCGACAAAGAAAAATATAAATTAT  
 proPIF1a\_Stub -----TATTTGGTAGTTTAAAC-----TATGCAACAACAAATACCTTTAAAA---AATGACATTTTGTGACTCATTTGAGCAA---CAGATAGGCATCTTT  
 proPIF1b\_Slyc **TCTAA-ATCATAAAAAATTTTGAATAATACATACCTGATTATATGCATAAATAATTTGATTCTCATAACGAGATCAAC---CAAACATGAGTTAA**  
 proPIF1b\_Spen **TAAA-AAATTAATAAATACAAATATAATTTATTTAAATTTGTTATATTTAAGAAATACCCTTAAAAGTTAAATACTATA---CAAGAGAGAATATAA**  
 proPIF1b\_Stub **TAAAA-AAATTAATAAATATGATATAATTTATTTAAATTTATATATTTAAGACAATTTTCTTAAAAGTTAAATATCATT---CAAGAGAGAATATAA**

510 520 530 540 550 560 570 580 590 600

proPIF1a\_Slyc **ATTGCTATA**CATATAAAG**TGATAAATTCCTGGCCTA---TTTCACTGCAATTCATAATTAGCTTTACATACAGTTGAATCGAATTAATAA**ACTTTG**TATGT**  
 proPIF1a\_Spen **TAGCGATATAAATAT---TTTGGACCAACTCTTAAGTAGATATAATTTTAAAAGTTTCATGTAATAAAGATCTTTTAAACCTATTT**  
 proPIF1a\_Stub **GAACCAAAATATTAGCAATAFAAAATATTATAGACCAAACTAATAACTAGACATTTTTTTTAA---TTTCATGTAATAAAGATTTTATACCTTTTTT**  
 proPIF1b\_Slyc **AGAAAAACTA**AACTCAATC**---AAATGGCTAGAGAC---TCG---TGCTGAT**ACCTG**TATAAA**  
 proPIF1b\_Spen **GAGTATAAAT**AAGAAAGG**CAATTTTCATATA---TATTTATAA**ACTTTG**ATAA**ACTTTAT****  
 proPIF1b\_Stub **GAGTACAAT**AAAAAAAT**ACTTTATTAATATCTTGAATTTCTAAGATAA---TTT---TTATTTAATAA**ACTTTAT****

610 620 630 640 650 660 670 680 690 700

proPIF1a\_Slyc **ATATTGCATAATTATAAGTGTATAGCAAGAAGATATATGTTTTTCCCGCTTTATACAAAAACAGAA---ACACA-ATATA**ACTTTCTG****  
 proPIF1a\_Spen **T---TAAATAAATAATTTGGACTGCTCATCGCTCACGCCC-AGTCAGCTTTTAAATATTCGGAGGAT---CCACA-ATGGATAATGATATA**TTATAC****  
 proPIF1a\_Stub **TGT**AAATAAATAATTTGGACTGCTCAGCGCTCACGCCC**GAATCAGCTTTTAAATATGCAGAG**AT**---CCACA-ATGGATAATGATATA**TTATAC****  
 proPIF1b\_Slyc **A---TCAAGCTCATAAGAGATATAATTATAAAGAGAGAAG-AGAAGAGAT**GA****  
 proPIF1b\_Spen **T---TGAAATGAAA---TAATACTATTATAAAGGTAATGCC-AGCAAAGAGACTTAAGAGACAAGAAATCTCTAC**ACCGA**GAATTTATGATAGAG**GGATAA****  
 proPIF1b\_Stub **T---TGAAACGGAACTAATAGTATTATAATGGTAATGCC-AGCAAAGAGATATTAAAGACAAGAGGCTT**GACCAA**---AGGGTTACGATGGAG**GGTAA****

710 720 730 740 750 760 770 780 790 800

proPIF1a\_Slyc -----  
 proPIF1a\_Spen -----TGAACAAT**CACTACT**TTTTTAAC**TTTTG**TGACTAATTTAAAGT**GT**  
 proPIF1a\_Stub -----AGA-ACAAT**CACTACT**TTTTTAG**TTTTG**CGACTAAT-TAAAGT**GT**  
 proPIF1b\_Slyc -----GATAGAAATGAGGAAT**TT**  
 proPIF1b\_Spen **ATATTTTTTTTAAATTTTAAATCAACAGACAATTTGATCATATATTTT**CGCCACTCTTGGT**TACGAT**TTGCTCA**TATTAGGAAGCGTATT**TT****  
 proPIF1b\_Stub -----TCG**AGTCTCTTGGAT**TACGAAAT**CGCTA**TGTTAGAAAGCAGGAT**TACCCCAATAT**

810 820 830 840 850 860 870 880 890 900

proPIF1a\_Slyc -----  
 proPIF1a\_Spen -----TTGTATAA**ACTGAA**AAAAAT**GT**  
 proPIF1a\_Stub -----AATTTTAAAGTAA**CAATAA**T---TAAGTGT**ACTTTGAACATCTACTT**ACACAT**TATTTT**ATG**CAAAA**TT**ATTAT**TAC  
 proPIF1b\_Slyc -----ATTATTTAAAGTAA**CAATAA**CAAT**GATA**AGTGT**CTTAAACATCTACTT**AGCAAAT**TATTTT**ATT**TACATTC**ATTAC  
 proPIF1b\_Spen -----TTCA**ATATA**AA**ACTT**  
 proPIF1b\_Stub **GTTG**GTCTTACCCCTAAAT**GTGA**GACTTCT**CAACA**ATAA**TCCAAAT**TAGTCAA**ACT**TACCCA**ATAT**GTAGA**CGTCA**TTCTCA**AT**ATA**ACATTT**

910 920 930 940 950 960 970 980 990 1000

proPIF1a\_Slyc **ATTTCACTGCAATTTGTAA**ATTC**CGAATTTGATATA**TTCTTT**---CGCCTTT**CTCTG**CAATATT**CGA**CTAAAT**TTG**TGA**AAATTATA**AAAT  
 proPIF1a\_Spen **ATAAGAT**TGCAACTGT**AA**ACATAG**ATTATCATA**TTCTTTT**TGGT**GATAC**ATAGACT**TTGTT**CAAT**CAAT**AAAGT**ATTG**TACATA**ATTATA**AAAA  
 proPIF1a\_Stub **ATAAAA**CTGCAACTGT**CA**ACATAG**ATAATCATA**TTCTTTT**TGGT**GATAC**ATAGACT**TTCTGTT**CAAT**CAAT**AAAGT**ATTG**TACATA**ATTATA**---A**  
 proPIF1b\_Slyc -----  
 proPIF1b\_Spen -----  
 proPIF1b\_Stub -----****

1010 1020 1030 1040 1050 1060 1070 1080 1090 1100



proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2110 2120 2130 2140 2150 2160 2170 2180 2190 2200

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2210 2220 2230 2240 2250 2260 2270 2280 2290 2300

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2310 2320 2330 2340 2350 2360 2370 2380 2390 2400

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2410 2420 2430 2440 2450 2460 2470 2480 2490 2500

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2510 2520 2530 2540 2550 2560 2570 2580 2590 2600

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2610 2620 2630 2640 2650 2660 2670 2680 2690 2700

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2710 2720 2730 2740 2750 2760 2770 2780 2790 2800

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2810 2820 2830 2840 2850 2860 2870 2880 2890 2900

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

2910 2920 2930 2940 2950 2960 2970 2980 2990 3000

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc  
proPIF1b\_Spen  
proPIF1b\_Stub

3010 3020 3030 3040 3050 3060 3070 3080 3090 3100

proPIF1a\_Slyc  
proPIF1a\_Spen  
proPIF1a\_Stub  
proPIF1b\_Slyc

CA-hybrid  
CAArg

proPIF1b\_Spen -----TTTATC  
proPIF1b\_Stub -----TTATC

3110 3120 3130 3140 3150 3160 3170 3180 3190 3200  
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

proPIF1a\_Slyc G-CAG-----  
proPIF1a\_Spen G-CAG-----  
proPIF1a\_Stub TCCAG-----  
proPIF1b\_Slyc A-TAAAGGCCAAATACATAAACAGATCCCTAAATTTGTGGCTTTTTTCCTCAGGTACCTCAACTATGTCATTTTTCTATTGAATCATTGAATTATCCGT  
proPIF1b\_Spen A-TAA-----  
proPIF1b\_Stub A-TAA-----

3210 3220 3230 3240 3250 3260 3270 3280 3290 3300  
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

proPIF1a\_Slyc -----  
proPIF1a\_Spen -----  
proPIF1a\_Stub -----  
proPIF1b\_Slyc AATTTATTACTTTTAAACACCTGTGGTTGATTTTGATCGGCTTTTCTATTGTAAATGCCTTCAATTTGTGTTGGAATTGTAATAATTTTGATGAAGGAAT  
proPIF1b\_Spen -----  
proPIF1b\_Stub -----

3310 3320 3330 3340 3350 3360 3370 3380 3390 3400  
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

proPIF1a\_Slyc -----  
proPIF1a\_Spen -----  
proPIF1a\_Stub -----  
proPIF1b\_Slyc GAAGAAAACCGTGTAGTCTCATTGTTTTTCCAATGTGTTCAAATGACTTAAGTAAAACACAATTTATCTCGAACATTTTCACATCAATTGAAGTAAT  
proPIF1b\_Spen -----  
proPIF1b\_Stub -----

3410 3420 3430 3440 3450 3460 3470 3480 3490 3500  
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

proPIF1a\_Slyc -----  
proPIF1a\_Spen -----  
proPIF1a\_Stub -----  
proPIF1b\_Slyc GAATTTTGAACAACGTATGTATCCTTTATCGATACCCCTCAAAAATTCGATTCCACATCAAAACACGGTGTGTTTAAACACCAAATTTATGAGGGTTC  
proPIF1b\_Spen -----  
proPIF1b\_Stub -----

3510 3520 3530 3540 3550 3560 3570 3580 3590 3600  
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

proPIF1a\_Slyc -----GTTGTTA  
proPIF1a\_Spen -----GTTGTTA  
proPIF1a\_Stub -----GTTGTTA  
proPIF1b\_Slyc AACGATTCAATAGAAAAA GACGTA GTTGGGTACCTGAGGAAAAAACCCAACAATTTAGAAATCTGCTTATGTATTGGCGTTTTTTATATTAATATA  
proPIF1b\_Spen -----TAATATA  
proPIF1b\_Stub -----TAATATA

CA-hybrid

3610 3620 3630 3640 3650 3660 3670 3680 3690 3700  
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

proPIF1a\_Slyc AAGACGCTTTTAAACAGTAGCAG---CCTTTTCTGTGTGA---  
proPIF1a\_Spen AAGACGCTTTTAAACAGTAGCAG---CCTTTTCTG---TGA---  
proPIF1a\_Stub AAGACGCTTTTAAACAGTAGCAGCCCGCCTTTTGTG---TGA---  
proPIF1b\_Slyc AATAAATTAATAAATTTGAGG---CTAGCTAAGTCGGTAGCAACTCAAAAATAAAACACACATATTTATAACAAGTCAAAAACACTACTAAAACAGTT  
proPIF1b\_Spen AATAAATTAATAAATTTGAGG---CTAGCTAAGTCGGTAGCAACTCAAAAATAAAACACACATATATATAACAAGTCAAAAACACTACTAAAACAGTT  
proPIF1b\_Stub AATAAATTAATAAATTTGAGG---CTAGCTAAGTCGGTAGCAACTCAAAAATAAAACACACATATATATAACAAGTCAAAAACACTACTAAAACAGTT

3710 3720 3730 3740 3750 3760 3770 3780 3790 3800  
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

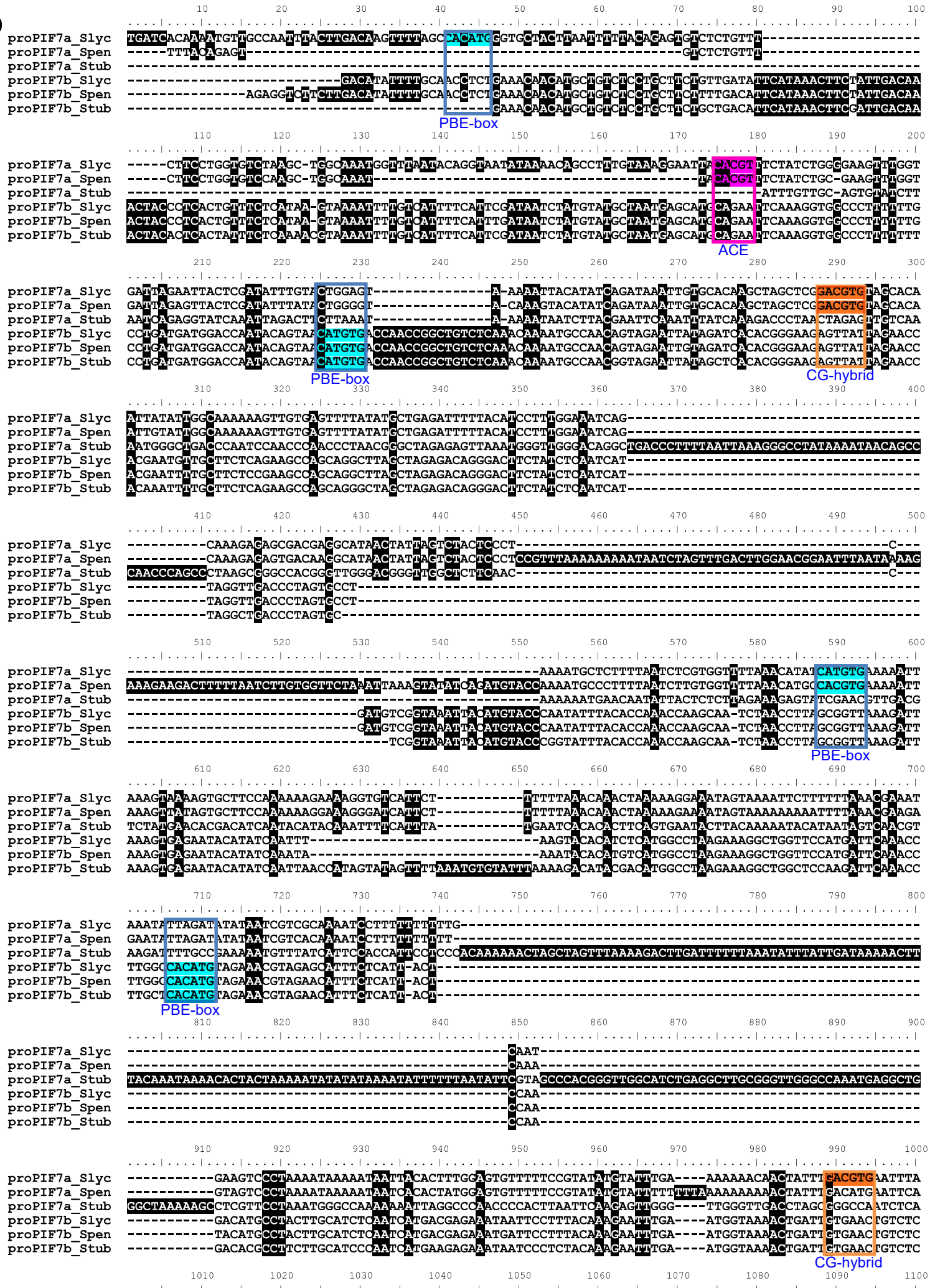
proPIF1a\_Slyc -----GCTTTTGATT-----TATGGGCGGAGCAAT-AA---GCTCCAGTGTATGGTGAGTTGGGACTGCTTCTTGCGGCTGTGCCTGAC  
proPIF1a\_Spen -----GCTTTTGATT-----TATGGGCGGAGCAATATA---GCTCCAGTGTATGGTGAGTTGGGACTGCTTCTTGCGGCTGTGCCTGAC  
proPIF1a\_Stub -----GCTTTTGATTTCGTAGATTTTATGGGCGGAGCAATATA---GCTCCAGTGTATGGTGAGTTGGGACTGCTTCTTGCGGCTGTGCCTGAC  
proPIF1b\_Slyc CTCATGAGAGCAAAAACACTCAAAATGAGTT-----  
proPIF1b\_Spen CGA-----CAAAAACACTCAAAACGAGTT-----  
proPIF1b\_Stub CTCACA---ACAGCAGCTCAAAACGAGTT-----

3810 3820 3830 3840 3850 3860 3870  
.....|.....|.....|.....|.....|.....|.....|

proPIF1a\_Slyc CAATTTGAATATTTTTTGGCTT-TTTTTTTTGG-----GACATTTGAGCTGCCAAGCTACGTCACG---  
proPIF1a\_Spen CAATTTGAATATTTTTTGGCTTTTTTTTTTTGG-----GACATTTGAGCTGCCAAGCTACGTCACG---  
proPIF1a\_Stub CAATTTTGA-----TTTTTTTATTTGG-----GACATTTGAGCTGCCAAGCTACGTCACG---  
proPIF1b\_Slyc -CATG-----AATAAATCTCAAGTGAGTTTCTGATCATATAAATCAATTAACACTCACAAAG  
proPIF1b\_Spen -CATG-----AATAAATCTCAAGTGAGTTTCTGATCATATAAATCAATTAACACTCACAAAG  
proPIF1b\_Stub -CATA-----TAAAGAAGAACA-----AATATTTAATTTGAATTAATCAAG---

CA-hybrid

**b**



proPIF7a\_Slyc AATTT--TGTCAAAG-----ATCCTAATATAAATAATCGCTGCACAAAATTTCAAAAAAATTAATTCAAAAATGGGCTCTCC  
proPIF7a\_Spen AATTT--TGTCAAAG-----ATCCTAATATAAATAATCGCTGTACAAAATTTCAAAAAAATTAATTCAAAAATGGGCTCTCC  
proPIF7a\_Stub TTTTGTAGAGCTCTA-----ACCCTAATACAAAATACTCGTGACACAGATTC--AAAGAAATTAATTCAAAAATGGGCTCTCC  
proPIF7b\_Slyc TGTTT--AGCTATTGATGCTGATCCATAATAAACCCCATTTTCAACATCTAAGCTGGCCGTGCAATTTCCAGATATTGTATATCAATATATGAACATC  
proPIF7b\_Spen TGTGT--AGCTATTGATGCTGATCCATAATAAACCCCATTTTCAACATCTAAGCTGGCCGTGCAATTTCCAGATATTGTATATTAATATATGAACATC  
proPIF7b\_Stub TATTT--AACTATTGATGATGATCCATAATAAACCCCATTTTCAACATCTAAGCTGGCCGTGCAATTTCCAGGATTCGTATATCAATATCTGAGACATC

1110 1120 1130 1140 1150 1160 1170 1180 1190 1200

proPIF7a\_Slyc AAWATTMTGGGACC-----TAAAACCCATGCTTTAGTTGCTTCACCCCC  
proPIF7a\_Spen AATATTMTGGGACC-----TAAAACCCATGCTTTAGTTGCTTCACCCCC  
proPIF7a\_Stub AATATTMTGGGACC-----TAAAACCCATGCTTTAGTTGCTTCACCCCC  
proPIF7b\_Slyc AATTAATATGATCACATGSAACAAGAAATACTACAAAATTTATTGATCACACAGGT---TAGGTAATTCCTTTTCTGTTGAAATGATTAAGGTACCC  
proPIF7b\_Spen AATTAATATGATCACATGSAACAAGAAATACTACAAAATTTATTGATCACACAGGT---TAGGTAATTCCTTTTCTGTTGAAATGATTAAGGTACCC  
proPIF7b\_Stub AATTAATATGATCACATGSAACAAGAAATACTACAAAATTTATTGATCACACAGGTCTACTAGGTAATTCCTTTTCTGTTGAAATGATTAAGGTGCCC

1210 1220 1230 1240 1250 1260 1270 1280 1290 1300

proPIF7a\_Slyc TTGTAGCTGGCCATGTAATTGGACCTAAGTATGGAATGGACATGACATATAAATGATTTGAAGCTTCAGTAAAATATACCACAGTCAACTTATTTGGATATA  
proPIF7a\_Spen TTGTAGCCGGCCATGTAATTGGACCTAAGTATGGAATGGACATGACATATAAATGATTTGAAGCTTCAGTAAAATATACCACAGTCAACTTATTTGGATATA  
proPIF7a\_Stub A-GTTCGCCGCGCATGTAATTGGACCTAAGTATGGAATGGACATGACATATAAATGATTTGAAGCTTCAGTAAAATATACTACAGTCAACTTATTTGGATATA  
proPIF7b\_Slyc A-CCTGACTTCCCTACATGAGACC---ATGCTCTAATTAAGATCTTACAAATGAGTGTGCAATAAGTTCGAAATGTTTGTGTTGTCTGTTAAGAACATTC  
proPIF7b\_Spen A-CCTGACTTCCCTACATGAGACC---ATGCTCTAATTAAGATCTTACAAATGAGTGTGCAATAAGTTCGAAATGTTTGTGTTGTCTGTTAAGAACATTC  
proPIF7b\_Stub A-CCTGACTTCCCTACATGAGACC---ATGCTCTAATTAAGATCTTACAAATGAGTGTGCAATAAGTTCGAAATGTTTGTGTTGTCTGTTAAGAACATTC

CArg

1310 1320 1330 1340 1350 1360 1370 1380 1390 1400

proPIF7a\_Slyc TATTTTGTGGTCACTGGTCA-----AATCAGCOAAAACCCAG--CA-ATGTATTCGTTTCA  
proPIF7a\_Spen TATTTTGTGGTCACTGGTCA-----AATCAGCOAAAACCCAGGCCA-ATGTATTCGTTTCA  
proPIF7a\_Stub TGTTTGTGGTCACTGGTCA-----AAGCATTCAAAATCCACAACTCACCACACTTGTGTTCA  
proPIF7b\_Slyc AAAATGCTATCCAGAAATCAACTGTGACTTGCATGCTCCAGAACCAGGGCCATAATGGCAAAGTTCAAGTTTGACACAACAAATCATGTCGCTTGCA  
proPIF7b\_Spen AAAATGCTATCCAGAAATCAACTGTGACTTGCATGCTCCAGAACCAGGGCCATAATGGCAAAGTTCAAGTTTGACACAACAAATCATGTCGCTTGCA  
proPIF7b\_Stub AAAATGCTATCCAGAAATCAACTGTGACTTGCATGCTCCAGAACCAGGGCCATAATGGCAAAGTTTAAAGTTTGACACAACAAATCATGTCGCTTGCA

1410 1420 1430 1440 1450 1460 1470 1480 1490 1500

proPIF7a\_Slyc TTTACTTATCTTATTTT-TTGATATTAATGATATCAAAAATCTCTTTTAAATTTTATGCTATTAAAGCATATCAGTGAAGTTGACATCAAAATCTGTAGGA  
proPIF7a\_Spen TTTATTATCTTATTTT-TGATACIAAAAATGATATCAAAAATCTCTTTTAAATTTTATGCTATTAAAGCATATCAGTGAAGTTGACATCAAAATCTGTAGGA  
proPIF7a\_Stub ATTGTTTGTCTTATTTGACATGACACAATATTTAAAAAG-----  
proPIF7b\_Slyc AAGTAAATACCGCTATATCTCTATACTAAAATGCA-----  
proPIF7b\_Spen AAGTAAATACCGCTATATCTCTATACTAAAATGCA-----  
proPIF7b\_Stub AAGTAAATACCGCTATATCTCTATACTAAAATGCA-----

CArg

1510 1520 1530 1540 1550 1560 1570 1580 1590 1600

proPIF7a\_Slyc GTTGGTGTTCCAATTAATTTTAAAAGAAAT--TAAATCACA--TGTTAAAAGTTTGA AAAATACAAA-----GTGAATGGCAATATTTATTT  
proPIF7a\_Spen GTTGGTGTTCCAATTAATTTTAAAAGAAAT--TAAATCACA--TGTTAAAAGTTTGA AAAATACAAAACACATGACTGTGAATGGCAACATTTATTT  
proPIF7a\_Stub -----TAAAATAAAA--CTTTTAAATCTTTGTAAT-----ACTCCCTC  
proPIF7b\_Slyc TTGACTAGCTGGTAAAATAT-----CTATGTCAGGTTAAACT-----ACAGCAGT  
proPIF7b\_Spen TTGACTAGCTGGTAAAATATGATTAACCAACTACTATGTCAGGTTAAACT-----ACAGCAGT  
proPIF7b\_Stub TTGCAAGCTGGTAAAATAAGTAAACCAACTACTATGTCAGGTTAAACT-----ACAGAAC

PBE-box

1610 1620 1630 1640 1650 1660 1670 1680 1690 1700

proPIF7a\_Slyc TTATTTTAAATGCT-----TTAAGTTTACTCGTGGAAAGAGATTAACAATCTCAAAAAATATATAGCGTGCCTCTAAACCAAACAGTTTATTTTGGATT  
proPIF7a\_Spen TTATTTTAAATGCT-----TTAAGTTTACTCGTGGAAAGAGATTAACAATCTCAAAAAACATATAGCGTGCCTCTAAACCAAACAGTTTATTTTGGATT  
proPIF7a\_Stub CGTCCCATTTAAGTGGAGTATTTGATT-CGGCACGGAAATTAAGAAAGAAAGGAAGACTTTTAAACTTGTGGTCCAAAATGAAATGATATTTTGTGTG  
proPIF7b\_Slyc AGTGTA AAAAT-----GTTATATAACTTAAATCCAATTTGGCAAACCTGGAGGTACTTTGGCAAGTCCCTAAAACAAAG  
proPIF7b\_Spen AGTGTA AAAAT-----GTTATATAACTTAAATCCAATTTGGCAAACCTGGAGGTACTTTGGCAAGTCCCTAAAACAAAG  
proPIF7b\_Stub AGTGTA AAAAT-----TGTT-ATGCTATCAGTATATAACTTAAATCCAATTTGGCAAACCTGGAGGTACTTTGGCAAGTCCCTAAAACAAAG

1710 1720 1730 1740 1750 1760 1770 1780 1790 1800

proPIF7a\_Slyc ACTTCGATTTTTTGTCACTTTGTTCCAACAAAACGAACTTTAAAAAAAACCTGGGTCCCCCAACCAACATGCTCTTCAACAAAATAATTTTCC  
proPIF7a\_Spen ACTTTGATTTTTTGTCACTTTGTTCCAACAAAACGAACTTTAAAAAAAACCTGGGTCCCCCAACCAACATGCTCTTCAACAAAATAATTTTCC  
proPIF7a\_Stub GCTGTAATAGTTTAAAGGCC-----AACCTTAAAAAAAACCTGGGTCCCCCAACCAACATGCTCTTCAACAAAATAATTTTCC  
proPIF7b\_Slyc GGATCCATAAACGAGGAGT-----AAAATCTTCTACGTGATGACAA-----GGTT  
proPIF7b\_Spen GGATCCATAAACGAGGAGT-----AAAATCTTCTACGTGATGACAA-----GGTT  
proPIF7b\_Stub GGATCCATAAATGAGGAGT-----AAAATCTTCTACATGATGACAA-----GGTG

ACE

1810 1820 1830 1840 1850 1860 1870 1880 1890 1900

proPIF7a\_Slyc ATCTATATAACAT--GTTT--CTCCGTGGAAAGTTTAAAGCCGATTTAACTTTAAACATATCAAAGTACTTTTCAATATCTACTTGTGTCAGTAAGAAATTOA  
proPIF7a\_Spen ATCTATATAACATGTTT--CTCCGTGGAAAGTTTAAAGCCGATTTAACTTTAAACATATCAAAGTACTTTTCAATATCTACTTGTGTCAGTAAGAAATTOA  
proPIF7a\_Stub ATCTAT--GTTT--CTCCGTGGAAAGTTTAAAGCCGATTTAACCTG-AAATATCAAATTACTCTCATCTACTTGTGTCAGTAAGAAATTA  
proPIF7b\_Slyc TTGCAAAAAC--T-TGGCAAGTTGATTCAACAACAAACATACCAACTT-AGAGAAAAGATGTTGTCCCTGCATCTGCTGCTGCTAAGCCAGCAA  
proPIF7b\_Spen TTGCAAAAAC--T-TGGCAAGTTGATTCAACAACAAACATACCAACTT-AGAGAAAAGATGTTGTCCCTGCATCTGCTGCTGCTAAGCCAGCAA  
proPIF7b\_Stub TTGCAAAAAC--TTTGGCAAGTTGATTCAACAACAAACATACCAACTT-AGAGAAAACATGTTGTCACTGCATCTGCTGCTGCTAAGCTAAGCA

ACE

1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

proPIF7a\_Slyc ACAAAATGCAATAGCACTTATGA-----AATCTATTTTACGTTGGTGCATAACGCGA  
proPIF7a\_Spen ACAAAATGCAATAGCACTTATGA-----AATCTATTTTACGTTGGTGCATAACGCGA  
proPIF7a\_Stub ACAAAATGCAATAGCACTTATGA-----AATCTATTTTACGTTGGTGCATAACGCGA  
proPIF7b\_Slyc GTGAATGACATGAAACAAAAGAGTCTGATGTTTTCAGTAAGAAATTTCTAATTACATTAATGCTTTTATA  
proPIF7b\_Spen GTGAATGACATGAAACAAAAGAGTCTGATGTTTTCAGTAAGAAATTTCTAATTACATTAATGCTTTTATA  
proPIF7b\_Stub GTGAATGACATGTAACAAAAGAGTCTGATGTTTTCAGTAAGAAATTTCTAATTACATTAAC--T-TATACTAAGGATA

2010 2020 2030 2040 2050 2060 2070 2080 2090 2100

proPIF7a\_Slyc TCACATTTGATTCATTATGCACCA-----  
proPIF7a\_Spen TCACATTTGATTCATTATGCACCA-----

proPIF7a\_Stub TCAAAATTCATTCGCAATTAAGCACCACTTAAATATGATAGGAATAAATCAGGCTTAAAGAAATAGATTTTGAATCATCTTTCCCTTAAGGAATATCGTGAT  
proPIF7a\_Slyc CC AAAAATCTAATCTAACAGCACTTG-----  
proPIF7a\_Spen CC AAAAATTTAATCTAACAGCACTTG-----  
proPIF7a\_Stub CC AAAAATTTAATCTAACAGC-----G

2110 2120 2130 2140 2150 2160 2170 2180 2190 2200

proPIF7a\_Slyc -----ACTTCGATTTTAAACCCAAAAGCTCATACTTATAAAAAAA-ACAAAAGTTGAGCGGACTTTCTGTGAGA-AAAATTCATA  
proPIF7a\_Spen -----ACTTCGATTTTAAACCCAAAAGCTCATACTTATAAAAAAAATAAAGTTGAGCGGACTTTCTGTGTAGA-AAAATCA---  
proPIF7a\_Stub AACAAACTCTCCAGAAGTCACTCACTTAAATTTTAAACCCAAAAGCTCATACTGTAFAAAAATC--ATAGTTGAGCGGACTTTAGTCTAA-AAAAGTTCATA  
proPIF7b\_Slyc -----ATTAGAACTTTATACCAATGTTTATACGA-----AATC--ATGGATGAGAATGACAAAAGATAAACCAAAATTA  
proPIF7b\_Spen -----ATTAGAACTTTATACCAATGTTTATACGA-----AATC--ATGGATGAGAATGACAAAAGATA-ACCACAAATTA  
proPIF7b\_Stub -----CTTAGAACTTTATTCGAATGTTTATACGA-----ATTC--AGGATGAAAGTACAAAAGATA-ACTACAAAGTA

2210 2220 2230 2240 2250 2260 2270 2280 2290 2300

proPIF7a\_Slyc ATTGAGTGACAATAAGCCATGTTATCTCTGATTTGAGGGGATCTCTCAAATTTTAAAGCCCCATCTAGCAGGTTGTTGTTCAACATTT-AAAATTCGATGG  
proPIF7a\_Spen -----GTGATATTATTTCTGATTAAGGGGATCTATCAAATTTTAAAGCCCCATTCTAGCAGGTTGTTGTTCAACATTT-AAAATTCGATGG  
proPIF7a\_Stub GTTGAAGTACCATCTGTGAT-TAATCTCTGATTTGAGGGGATCTCTCAAATTTTAAAGCCCCATCTAGCAGGTTGTTGTTCAACATTTAAATTTTCGATGG  
proPIF7b\_Slyc CCAGCCCCACCTCATCTTAT-GAAGTCGGGATAACTTCTATGTTGATTGAAATTA-----TTATATTTT  
proPIF7b\_Spen CCAGCCCCACCTCATCTTAT-GAAGTCGGGATAACTTCTATGTTGATTGAAATTA-----TTATATTTT  
proPIF7b\_Stub CCAGCCCCACCTCATCTTAT-GAAGTCGGGATAACTTCTATGTTGATTGAAATTA-----TTATATTTT

2310 2320 2330 2340 2350 2360 2370 2380 2390 2400

proPIF7a\_Slyc C-TCCC GCCCTCTAAAAGCTTCTGGTGGAGGAATGACTACTACTATTTTATGTAGGTTCCAAAACAGTAAAAOCTAG-----AAATCTAAATGCATTGA  
proPIF7a\_Spen C-TCCC GCCCTCTAAAAGCTTCTGGTGGAGGAATGACTACTACTATTTTATGTAGGTTCCAAAACACTGAAAACCTAG-----AAATCTAAATGCATTGA  
proPIF7a\_Stub A-TCCC GCCCTCTAAAAGCTTCTGGTGGAGGAATGACTACTACTATTTTATGTAGGTTCCAAAACAGTAAAAOCTAG-----AAATCTAAATGCATTGA  
proPIF7b\_Slyc CTCAAATGCGTCAATTTAATTT-----GAATGATGTTGCATCACTAGTCAGAGCAACCAAAATCAGATAGAGGGCGGCAAAATTTCAACGCATTGA  
proPIF7b\_Spen CTTAAAGTACTATCAATTTAATTT-----GAATGATGTTGCATCAATAGTCAGAGCAACCAAAATCAGATAGAGGGCGGCAAAATTTCAACGCATTGA  
proPIF7b\_Stub T-TAAATGTTCTCAATTTAATTT-----GAATGATGTTGCATCAATAGTCAGAGCAACCAAAATCAGATAGAGGGCGGCAAAATTTCAACGCATTGA

2410 2420 2430 2440 2450 2460 2470 2480 2490 2500

proPIF7a\_Slyc GTGCTTCTAACCCACCTAACATCAAAATACTTAAATGGAATGAAGGTA-----  
proPIF7a\_Spen GTGCTTCTAACCCACCTAACATCAAAATACTTAAATGGAATGAAGGTA-----  
proPIF7a\_Stub GTGCTTCTAACCCACCTAACCTTCAACAAA-TCTTAAATGGAATGAAGGTA-----  
proPIF7b\_Slyc ATGTTTTTAAACCCATCAAAATGCAAA-TA-TCTTTGTTTGAAGTTACTAATTACATGAAGAAATCAGTTCCTGATCTTTAGGTGGATAAAAAATTTTGC  
proPIF7b\_Spen ATGTTTTTAAACCCATCAAAAGCAAAATA-TCTTTGTTTGAAGTTACTAATTACATGAAGAAATCAGTTCCTGATCTTTAGGTGGATAAAGATTTTGC  
proPIF7b\_Stub ATGTTTTTAAACCCATCAAAAGCAAAATA-TCTTTGTTTGAAGTTACTAATTACATGAAGAAATCAGTTCCTGATCTTTAGGTGGATAAAAAATTTTGC

2510 2520 2530 2540 2550 2560 2570 2580 2590 2600

proPIF7a\_Slyc -----AGAAGAAAT--CACATATATGAAAGATATCCATTTGAAATCCAGGCTTTCTTGCTGT  
proPIF7a\_Spen -----AGAAGAAAT--CACATATATGAAAGATATCCATTTGAAATCCAGGCTTTCTTGCTGT  
proPIF7a\_Stub -----AGAAGAAACTGCACATATATGAAAGATATCCATTTGAAATCCAGGCTTTCTTGCTAT  
proPIF7b\_Slyc TCTTTCTTCTTTAGAGTTTCTATCATCAAGAAAAAGAGTAAAACAGATACACTAAATGCCAAACTTATCCATTTGAAATCCAGGCTTTTAT-----T  
proPIF7b\_Spen TCTTTCTTCTTTAGAGTT-CTATCATCAAGAAAAAGAGTAAAACAGATACACTAAATGCCAAACTTATCCATTTGAAATCCAGGATTTTAT-----T  
proPIF7b\_Stub TCTTTCTTCTTTAGAGTT-CT-----ATCATCTAAATGCCAAACTTATCCATTTGAAATCCAGGCTTTTAT-----T

2610 2620 2630 2640 2650 2660 2670 2680 2690 2700

proPIF7a\_Slyc GTCACATGTTGTGTGTTTCAGTATAAATGGTCAATTCGAATGCCGACAAATCAAAAAGGGGACCAGAAAACAATAAATAAATTAAGTTTITAG-----  
proPIF7a\_Spen GTCACATGTTGTGTGTTTCAGTATAAATGGTCAATTCGAATGCCGACAAATCAAAAAGGGGACCAGAAAACAATAAATAAATTAAT-TITTAG-----  
proPIF7a\_Stub GTCACATGTTGTGTGTTTCAGTATAAATTAGTCAATTCGAATGCCGACAAATCAAAAAGGGGACCAGAAAACAATAAATAAATTAAT-TITTAG-----  
proPIF7b\_Slyc GCTACACACACAGTCTGCATACATTAATATTCAGCTAAATATGACAATCCTGTAGGGGACCAGAAATACTGAAAGACATTTTITAGTATAAAGAGGGG  
proPIF7b\_Spen GCTACACACATAGTCTGCATACATTAATATTCAGCTAAATATGACAATCCTGTAGGGGACCAGAAATACTGAAAGACATTTTITAGTATAAAGAGGGG  
proPIF7b\_Stub GCTACACACATAGTCTGCATACATTAATATTCAGCTAAATATGACAATCCTGTAGGGGACCAGAAATACTGAAATA CGTTTTTITAGTATAAAGAGGGG

PBE-box

2710 2720 2730 2740 2750 2760 2770 2780 2790

proPIF7a\_Slyc -----TATATAAACTGACGAAGAGCAGAGACTTCAACATTCGGGAAACAGAGAAAACAATAGATTACTCAATAATATATTAATCATC  
proPIF7a\_Spen -----TATATAAACTGACGAAGAGCAGAGACTTCAACATTCGGGAAACAGAGAAAACAATAGATTACTCAATAATATATTAATCATC  
proPIF7a\_Stub -----TATATAAAACAGAGAAATAGCAGA-GTTCACATTTGGGAAACAGAGAAAACAATAGATTACTCAATAATATATTAATCATC  
proPIF7b\_Slyc AAAGCCAACCTCAATATATTAAGACTGCAAGTAACTGAGAAATTAACAGAGTACACCTATCAAAAGCCATCAAC  
proPIF7b\_Spen AAAGCCAACCTCAATATATTAAGACTGCAAGTAACTGAGAAATTAACAGAGTACACCTATCAAAAGCCATCAAC  
proPIF7b\_Stub AAAGCCAACCTCAATATATTAAGACTGCAAGTAACTGAGAAATTAACAGAGTACACCTATCAAAAGCCATCAAC