LINE\_R2\_526 ------------------------------------------------------------ 0

LOC110375617 AAGCCTGTATGTATAAAAACTTATTTTATGCTTCGTAATGGACTAGTTGGTCAGTGGAAT 60

LINE\_R2\_526 ------------------------------------------------------------ 0

LOC110375617 GGTAAATACCATGTCCATAGCCGTGCGTGGAATTCATTTCATATAGTTCACAAAGAGGTT 120

LINE\_R2\_526 ------------------------------------------------------------ 0

LOC110375617 GTATAGTGACCATACTTGCTTTAAGAGTAGCGCAGTGAAAAGGCCTAATACGGAAAGCCT 180

[….]

LINE\_R2\_526 ------------------------------------------------------------ 0

LOC110375617 TGGGGGGGCTTAGAGGAGGCATGAGCAATTAATATAGAGGTCCTAACAACTAGACCCACC 6480

LINE\_R2\_526 --TGGAATATAGCCAGGAGGTACGAAATCAGTCACTAACACCTTGACACACCCTTCCAAC 58

LOC110375617 CCTGGAATATAGCCAGGAGGTACGAAATCAGTCACTAACACCTTGACACACCCTTCCAAC 6540

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 TAACGGTCCCAAACCAACCCCTCCAATATGGAAACCAGATCTAGAAAGAAACGTATAGGG 118

LOC110375617 TAACGGTCCCAAACCAACCCCTCCAATATGGAAACCAGATCTAGAAAGAAACGTATAGGG 6600

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LINE\_R2\_526 CCGCTGCCCGGGGGCGATCGCCGGGGCACACCTGGAGCTGACGCTGGGTGTCTCAGCATG 178

LOC110375617 CCGCTGCCCGGGGGCGATCGCCGGGGCACACCTGGAGCTGACGCTGGGTGTCTCAGCATG 6660

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 CGATCCGTCAGTGGTGAGGAGTTGAGCAGGCGGGCTCCCACCATGCAATATGCTACAGCC 238

LOC110375617 CGATCCGTCAGTGGTGAGGAGTTGAGCAGGCGGGCTCCCACCATGCAATATGCTACAGCC 6720

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GACGAAGAAGTAGATAGGATAAATAGCCCATTAGAACCATTCAGTCCAAGCACCGCTTCT 298

LOC110375617 GACGAAGAAGTAGATAGGATAAATAGCCCATTAGAACCATTCAGTCCAAGCACCGCTTCT 6780

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LINE\_R2\_526 TATGTCCCGTCACTATCATCATCCCCCTCCACAGTTAGTTTAAATGCCGAAAGTATAGTT 358

LOC110375617 TATGTCCCGTCACTATCATCATCCCCCTCCACAGTTAGTTTAAATGCCGAAAGTATAGTT 6840

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LINE\_R2\_526 TTTCACCAACATGTATCATCTGATACGCCCACGCCTGAGGATGTTGTGCAGGAGGCACTC 418

LOC110375617 TTTCACCAACATGTATCATCTGATACGCCCACGCCTGAGGATGTTGTGCAGGAGGCACTC 6900

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GCCACTGAGCTTGCACCCGCCCCAGGCACAAGTCGTGCGCGCAAACGATGGTCAGAAGAA 478

LOC110375617 GCCACTGAGCTTGCACCCGCCCCAGGCACAAGTCGTGCGCGCAAACGATGGTCAGAAGAA 6960

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LINE\_R2\_526 ATGAATAAATTCATCTGGCGCACGTACCTAATAGCTACAAAACTGAATACAAATAAAATT 538

LOC110375617 ATGAATAAATTCATCTGGCGCACGTACCTAATAGCTACAAAACTGAATACAAATAAAATT 7020

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LINE\_R2\_526 TATCTCCAACAACTCCATACCGAATTCTCGTTAAAATTCCCTGATATGCAAGCATCTAGA 598

LOC110375617 TATCTCCAACAACTCCATACCGAATTCTCGTTAAAATTCCCTGATATGCAAGCATCTAGA 7080

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LINE\_R2\_526 CAAAGACTCGGAGATCAATGTAGGGCCATAGTAAGAAATAAATTACTGCCACAGGAAACA 658

LOC110375617 CAAAGACTCGGAGATCAATGTAGGGCCATAGTAAGAAATAAATTACTGCCACAGGAAACA 7140

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 CTTGACCAAATAAGGGAAGAAGTCACAACTCATCTACAAACAAACAGCACACTACAAACT 718

LOC110375617 CTTGACCAAATAAGGGAAGAAGTCACAACTCATCTACAAACAAACAGCACACTACAAACT 7200

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LINE\_R2\_526 CACACAGAAACAAATACACAAATACACACAAATTCTCAGCAAGTGGGTGGACAGAGACGA 778

LOC110375617 CACACAGAAACAAATACACAAATACACACAAATTCTCAGCAAGTGGGTGGACAGAGACGA 7260

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LINE\_R2\_526 AGATGGACTACTGAACAAAATGAATCAATTATTAGACACTACTATAAAATAACAGCGATG 838

LOC110375617 AGATGGACTACTGAACAAAATGAATCAATTATTAGACACTACTATAAAATAACAGCGATG 7320

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GAACAAAATAGATCAGCTTATCGTCAACCTCTCCATCAGGCAGTCATAACAGAACATCCA 898

LOC110375617 GAACAAAATAGATCAGCTTATCGTCAACCTCTCCATCAGGCAGTCATAACAGAACATCCA 7380

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LINE\_R2\_526 GAACTAAGTGGTGTAACAGAACAGAGAATCTCAGACCAACTACGGGTAATATTGAATAAC 958

LOC110375617 GAACTAAGTGGTGTAACAGAACAGAGAATCTCAGACCAACTACGGGTAATATTGAATAAC 7440

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LINE\_R2\_526 AAAATGATAACCGACCAGAGGCTCGACGAAATACGAAGTGAGATTGCCCAGGAAATTAAC 1018

LOC110375617 AAAATGATAACCGACCAGAGGCTCGACGAAATACGAAGTGAGATTGCCCAGGAAATTAAC 7500

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 TCTTACAATAACGAAAATATCACGCTGCCAACAACGCAAAACGGAACACACACATCTCAG 1078

LOC110375617 TCTTACAATAACGAAAATATCACGCTGCCAACAACGCAAAACGGAACACACACATCTCAG 7560

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LINE\_R2\_526 TCAGAAGACACCCAAGAAACACAAATGCACTTGTTACAAAATATACCTTCACATGAATTG 1138

LOC110375617 TCAGAAGACACCCAAGAAACACAAATGCACTTGTTACAAAATATACCTTCACATGAATTG 7620

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LINE\_R2\_526 AATCTATCAATACACACGCAGTCACATTCCCTCCCAACAGATAGTCAGAACCCAGAACTT 1198

LOC110375617 AATCTATCAATACACACGCAGTCACATTCCCTCCCAACAGATAGTCAGAACCCAGAACTT 7680

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LINE\_R2\_526 CATCAAAATCAATTACCTGATACCGATGATTTAGAGAAAATTAAAGATCAATTCAAAAAC 1258

LOC110375617 CATCAAAATCAATTACCTGATACCGATGATTTAGAGAAAATTAAAGATCAATTCAAAAAC 7740

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 ACTTTTGATAGGTTTCGTAACACTAGTCCTACCGACCGACCTTATATTCCAAAGCAAAAA 1318

LOC110375617 ACTTTTGATAGGTTTCGTAACACTAGTCCTACCGACCGACCTTATATTCCAAAGCAAAAA 7800

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 ACCTCTCGAAGACTAGCTGTTATTGTAGATGTAATAAACACCAAAATACTTCCTCAATAC 1378

LOC110375617 ACCTCTCGAAGACTAGCTGTTATTGTAGATGTAATAAACACCAAAATACTTCCTCAATAC 7860

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LINE\_R2\_526 ATTGCAAGAGATCAAGATTTCGAAACAACACATACAATCACCTATTGTGCAGCCTACACA 1438

LOC110375617 ATTGCAAGAGATCAAGATTTCGAAACAACACATACAATCACCTATTGTGCAGCCTACACA 7920

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GCTGCTATCTGTAACGGAGCTAAAATCAGAGAATCTGTTCTACCTACCCAGCCCACACAA 1498

LOC110375617 GCTGCTATCTGTAACGGAGCTAAAATCAGAGAATCTGTTCTACCTACCCAGCCCACACAA 7980

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 ACAAGAAAACCCGCGTGGCAGAAGAGACTAGAGAAAAAGATAGAGTCTCTGAGAAGAGAT 1558

LOC110375617 ACAAGAAAACCCGCGTGGCAGAAGAGACTAGAGAAAAAGATAGAGTCTCTGAGAAGAGAT 8040

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 ATTGCTAGGCTGTCTGAATATGCAAGGGGAACTAGAAGCAATAGACTAATCTTACTAATA 1618

LOC110375617 ATTGCTAGGCTGTCTGAATATGCAAGGGGAACTAGAAGCAATAGACTAATCTTACTAATA 8100

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GAGATAATAAAAAACAAATATCGTATACACTCCCAACATGAAGAACCCAACTTAAGCAAT 1678

LOC110375617 GAGATAATAAAAAACAAATATCGTATACACTCCCAACATGAAGAACCCAACTTAAGCAAT 8160

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GATGATTATCTCGACACACTCAAACAAAAACTTAATGCAGCTTGTAGTAGATTAAAAAGA 1738

LOC110375617 GATGATTATCTCGACACACTCAAACAAAAACTTAATGCAGCTTGTAGTAGATTAAAAAGA 8220

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 TATGTTACCTGTACTTTACGAAAGAAACAAAACTCCCGATTTGTTAATAATGAAAAGCAA 1798

LOC110375617 TATGTTACCTGTACTTTACGAAAGAAACAAAACTCCCGATTTGTTAATAATGAAAAGCAA 8280

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LINE\_R2\_526 TTCTATAGAACACTCGCATCAAACACACAGAATAACACAAGCACAGAGGCACAAGAGATA 1858

LOC110375617 TTCTATAGAACACTCGCATCAAACACACAGAATAACACAAGCACAGAGGCACAAGAGATA 8340

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LINE\_R2\_526 CTAACACCACCCGCAGAGGAACTTCATAGGTTTTGGTCAGGGATCTGGGCAGAGCCAGTA 1918

LOC110375617 CTAACACCACCCGCAGAGGAACTTCATAGGTTTTGGTCAGGGATCTGGGCAGAGCCAGTA 8400

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LINE\_R2\_526 CAACATAATGCAGACGCTGAATGGTTAGACGCAGACGCTGACATAGTTGATAAAATTACA 1978

LOC110375617 CAACATAATGCAGACGCTGAATGGTTAGACGCAGACGCTGACATAGTTGATAAAATTACA 8460

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LINE\_R2\_526 CCGATGCAATTTGATCATATACCAATAGATGTATTCGTGACAGTTCTTTGTAAAGCTCAT 2038

LOC110375617 CCGATGCAATTTGATCATATACCAATAGATGTATTCGTGACAGTTCTTTGTAAAGCTCAT 8520

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LINE\_R2\_526 AACTGGAAAGCACCTGGTAGTGATCGAATACACAACTATTGGTATAAGAAACTTACAATC 2098

LOC110375617 AACTGGAAAGCACCTGGTAGTGATCGAATACACAACTATTGGTATAAGAAACTTACAATC 8580

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LINE\_R2\_526 CTACACCCTTTACTCCACAACCACATAAATAATTTCGTTCAGACTCCAAATTCTATGCCC 2158

LOC110375617 CTACACCCTTTACTCCACAACCACATAAATAATTTCGTTCAGACTCCAAATTCTATGCCC 8640

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LINE\_R2\_526 CACTTTGTCACGCAAGGCTTAACTTACCTGATACCAAAGGATAGCGACTACCAAAATCCA 2218

LOC110375617 CACTTTGTCACGCAAGGCTTAACTTACCTGATACCAAAGGATAGCGACTACCAAAATCCA 8700

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LINE\_R2\_526 GCAAAATATCGTCCCATAACCTGCCTACAAACAATATATAAAATACTTACAGGATGCATT 2278

LOC110375617 GCAAAATATCGTCCCATAACCTGCCTACAAACAATATATAAAATACTTACAGGATGCATT 8760

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LINE\_R2\_526 GCAGAACTTTTACACCAACATATCACTATAGATAATAACATTCTCGCAGAGGAGCAAAAA 2338

LOC110375617 GCAGAACTTTTACACCAACATATCACTATAGATAATAACATTCTCGCAGAGGAGCAAAAA 8820

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LINE\_R2\_526 GGCTGCCGCAAGAGTAGCCAGGGTTGTAAAGAACAGTTAATAATAGATTCCGTTGCCATG 2398

LOC110375617 GGCTGCCGCAAGAGTAGCCAGGGTTGTAAAGAACAGTTAATAATAGATTCCGTTGCCATG 8880

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LINE\_R2\_526 AAAACTGCCTTCAGCAAGAAGAAGAATATAAACACAATGTATATTGATTACAAGAAAGCT 2458

LOC110375617 AAAACTGCCTTCAGCAAGAAGAAGAATATAAACACAATGTATATTGATTACAAGAAAGCT 8940

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LINE\_R2\_526 TTTGATTCCGTTCCGCATAGCTGGCTTTTAAACATCCTTCATCGCTATAAAATACACCCA 2518

LOC110375617 TTTGATTCCGTTCCGCATAGCTGGCTTTTAAACATCCTTCATCGCTATAAAATACACCCA 9000

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LINE\_R2\_526 CAAATAACCAACTTCCTTGAGAACTCCATGAAACATTGGACCACGACCTTAAAAACATTA 2578

LOC110375617 CAAATAACCAACTTCCTTGAGAACTCCATGAAACATTGGACCACGACCTTAAAAACATTA 9060

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GGACCTAACACTACGGCTACAAACGACATTCCGATACGTAGGGGCATTTTCCAAGGGGAT 2638

LOC110375617 GGACCTAACACTACGGCTACAAACGACATTCCGATACGTAGGGGCATTTTCCAAGGGGAT 9120

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LINE\_R2\_526 GCCCTGAGCCCTCTGTGGTTTTGCCTTGCACTAAATCCGCTCTCCCATATGCTGAATAAA 2698

LOC110375617 GCCCTGAGCCCTCTGTGGTTTTGCCTTGCACTAAATCCGCTCTCCCATATGCTGAATAAA 9180

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LINE\_R2\_526 TCTCAAATCGGTTACACCATTAAGACACCACAAAAACACACCAATCTTACTCACCTCATG 2758

LOC110375617 TCTCAAATCGGTTACACCATTAAGACACCACAAAAACACACCAATCTTACTCACCTCATG 9240

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LINE\_R2\_526 TACATGGACGACATAAAACTATACAGTGACACAACACACTCGCTACATCGCCTTGCAGAC 2818

LOC110375617 TACATGGACGACATAAAACTATACAGTGACACAACACACTCGCTACATCGCCTTGCAGAC 9300

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LINE\_R2\_526 ATCACTCAATCTTTCTCCAACGATATACACATGGAATTCGGAATCGATAAATGCAAGACC 2878

LOC110375617 ATCACTCAATCTTTCTCCAACGATATACACATGGAATTCGGAATCGATAAATGCAAGACC 9360

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LINE\_R2\_526 TTCTCTGTCAGCAGCGGCAAAATAACCGAAAACAGTTACACTCTAGATTCAGGCAACATA 2938

LOC110375617 TTCTCTGTCAGCAGCGGCAAAATAACCGAAAACAGTTACACTCTAGATTCAGGCAACATA 9420

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LINE\_R2\_526 ATCGAACCGTTAGAACCACACACAACATACAAATATTTAGGCTTCCAACAAGCTAGACAG 2998

LOC110375617 ATCGAACCGTTAGAACCACACACAACATACAAATATTTAGGCTTCCAACAAGCTAGACAG 9480

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LINE\_R2\_526 ATCAACCAAAAAGAAACAAAAGACAACCTGAAAAAGAAATTTAAGCACCGCCTAAATACC 3058

LOC110375617 ATCAACCAAAAAGAAACAAAAGACAACCTGAAAAAGAAATTTAAGCACCGCCTAAATACC 9540

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LINE\_R2\_526 ATAAGCAGATCTCAATTAAATTCACGCAACTCATCTAAAGCCATTAATAGCTTCGCTATC 3118

LOC110375617 ATAAGCAGATCTCAATTAAATTCACGCAACTCATCTAAAGCCATTAATAGCTTCGCTATC 9600

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LINE\_R2\_526 CCCGTCCTCACCTACTCGTTTGGGATAATCAACTGGTCCCAAGGCGACCTACTTAACCTG 3178

LOC110375617 CCCGTCCTCACCTACTCGTTTGGGATAATCAACTGGTCCCAAGGCGACCTACTTAACCTG 9660

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LINE\_R2\_526 CAAAGAGTCATAAACACCACTCTCACAGCTCACCGGAAGCACCATCCAAGATCTTGTGTG 3238

LOC110375617 CAAAGAGTCATAAACACCACTCTCACAGCTCACCGGAAGCACCATCCAAGATCTTGTGTG 9720

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LINE\_R2\_526 CAAAGGATGACTCTCCCAAGACGTGAAGGCGGAAGGGGAATCATAGACGTTGTTAATCTA 3298

LOC110375617 CAAAGGATGACTCTCCCAAGACGTGAAGGCGGAAGGGGAATCATAGACGTTGTTAATCTA 9780

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LINE\_R2\_526 CACAATAGACAGATCACCAATCTTAGACAATATTTCTACCATCATTCAGAACACTCAACA 3358

LOC110375617 CACAATAGACAGATCACCAATCTTAGACAATATTTCTACCATCATTCAGAACACTCAACA 9840

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LINE\_R2\_526 CTACACGAAACTGTAACCCTCGCTGATACCCACCTAACTCCCTTGAACCTAGCCGATCGA 3418

LOC110375617 CTACACGAAACTGTAACCCTCGCTGATACCCACCTAACTCCCTTGAACCTAGCCGATCGA 9900

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LINE\_R2\_526 AACCCGCAGAAGAATGAGAAAATTACCGATGCAAAGGAGAAGATCGCCACATGGAGGCAG 3478

LOC110375617 AACCCGCAGAAGAATGAGAAAATTACCGATGCAAAGGAGAAGATCGCCACATGGAGGCAG 9960

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LINE\_R2\_526 AAGTCTCTACACGGGCGGCACTACCACGACCTGCAGCAACCCCATGTCGACAAGAATGCG 3538

LOC110375617 AAGTCTCTACACGGGCGGCACTACCACGACCTGCAGCAACCCCATGTCGACAAGAATGCG 10020

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LINE\_R2\_526 TCGAACGCCTGGCTGCAGCGTGGTGAGCTGTTCCCTGAGACGGAAGCCTTCATGATGGCA 3598

LOC110375617 TCGAACGCCTGGCTGCAGCGTGGTGAGCTGTTCCCTGAGACGGAAGCCTTCATGATGGCA 10080

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LINE\_R2\_526 ATTCAAGACCAGGTCATCGATACCCGCAATTACCAAAAACACATAATGCGAGTCCGTAAC 3658

LOC110375617 ATTCAAGACCAGGTCATCGATACCCGCAATTACCAAAAACACATAATGCGAGTCCGTAAC 10140

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LINE\_R2\_526 CTCCCCACAGATGCATGCCGACACTGCCACTCATCCCCTGAAACCATTCAACACATTACG 3718

LOC110375617 CTCCCCACAGATGCATGCCGACACTGCCACTCATCCCCTGAAACCATTCAACACATTACG 10200

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LINE\_R2\_526 TCTGCCTGCAGATCTCTGGCGCAAACAGATTATAAACACCGCCATGATCAAGTAGCATCA 3778

LOC110375617 TCTGCCTGCAGATCTCTGGCGCAAACAGATTATAAACACCGCCATGATCAAGTAGCATCA 10260

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LINE\_R2\_526 ATAGTCCACCAGCATCTCGCTCATAAACTTAAATTCATTGACAAAAAAATAGCCTATTAC 3838

LOC110375617 ATAGTCCACCAGCATCTCGCTCATAAACTTAAATTCATTGACAAAAAAATAGCCTATTAC 10320

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LINE\_R2\_526 AAGTACAAACCAAACACAATATTCGAGAACAATAACCACAGACTTTACTGGGACAGAACC 3898

LOC110375617 AAGTACAAACCAAACACAATATTCGAGAACAATAACCACAGACTTTACTGGGACAGAACC 10380

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LINE\_R2\_526 ATCATCACTGACAAAACCATACATTTTAATAGACCTGACATCACATTATACGATAAAATC 3958

LOC110375617 ATCATCACTGACAAAACCATACATTTTAATAGACCTGACATCACATTATACGATAAAATC 10440

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LINE\_R2\_526 AATAGAATTGCCTACCTTATCGACATAGCCATCCCAAATACACATAACGTACAATCTACA 4018

LOC110375617 AATAGAATTGCCTACCTTATCGACATAGCCATCCCAAATACACATAACGTACAATCTACA 10500

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LINE\_R2\_526 ATATCTGATAAACTGACCAAATACCAAGATCTAGCAATAGAATTAAAACGCCAATGGCAA 4078

LOC110375617 ATATCTGATAAACTGACCAAATACCAAGATCTAGCAATAGAATTAAAACGCCAATGGCAA 10560

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LINE\_R2\_526 GCGCTANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN 4138

LOC110375617 GCGCTANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN 10620

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LINE\_R2\_526 NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN 4198

LOC110375617 NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN 10680

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LINE\_R2\_526 NNNNNNNNNNNNGTTTTTCTTTCTTCCTATTTTGTTTATTTTGTGATTACACGTTGTTCA 4258

LOC110375617 NNNNNNNNNNNNGTTTTTCTTTCTTCCTATTTTGTTTATTTTGTGATTACACGTTGTTCA 10740

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LINE\_R2\_526 CTAGGTATCAATTTATTTATTTTTGGCACAGTTTTAAGGTATAGGTTTTCGTCTACAGAT 4318

LOC110375617 CTAGGTATCAATTTATTTATTTTTGGCACAGTTTTAAGGTATAGGTTTTCGTCTACAGAT 10800

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LINE\_R2\_526 ATGTATATAGCACACACAAATTAATGCAGATTTAACCAACTTTACGAATTTATAAGCACA 4378

LOC110375617 ATGTATATAGCACACACAAATTAATGCAGATTTAACCAACTTTACGAATTTATAAGCACA 10860

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LINE\_R2\_526 AGCACACGGAAACAACCGTCTGACTCACACGGGCGCGCGCGGGGAACCATATTGAACCCT 4438

LOC110375617 AGCACACGGAAACAACCGTCTGACTCACACGGGCGCGCGCGGGGAACCATATTGAACCCT 10920

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LINE\_R2\_526 ACACTTTAAAGACAAAGTTTAAAATTGATTACAGAAAGACAGGTTGTAGCAGGTTGTTGT 4498

LOC110375617 ACACTTTAAAGACAAAGTTTAAAATTGATTACAGAAAGACAGGTTGTAGCAGGTTGTTGT 10980

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LINE\_R2\_526 TCTACCGTATACATATATTTAAATTAATTAACTTTACTTCTTACTCCACAGCATGTACCA 4558

LOC110375617 TCTACCGTATACATATATTTAAATTAATTAACTTTACTTCTTACTCCACAGCATGTACCA 11040

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GCTAATCTTCGAAAGGATGACAAAATGGTGGCTGCAAATACCCCTCATCTACTGGCTGGG 4618

LOC110375617 GCTAATCTTCGAAAGGATGACAAAATGGTGGCTGCAAATACCCCTCATCTACTGGCTGGG 11100

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GGGGAAGAAGAAGAAGCAACTATACTTCCAAAAGCTGGTCGATGATTTCTCCAGCGATAT 4678

LOC110375617 GGGGAAGAAGAAGAAGCAACTATACTTCCAAAAGCTGGTCGATGATTTCTCCAGCGATAT 11160

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 CGTGAGAAGAAGAAGAAAGGCCCTAGAGGTTTCTACACCTGATGAAGAATGTATGGGAGT 4738

LOC110375617 CGTGAGAAGAAGAAGAAAGGCCCTAGAGGTTTCTACACCTGATGAAGAATGTATGGGAGT 11220

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 TGCAGATCGATATATATTGCAAGGGGATTTGACTGAAAATGAAATTAAGAGGGATACCTT 4798

LOC110375617 TGCAGATCGATATATATTGCAAGGGGATTTGACTGAAAATGAAATTAAGAGGGATACCTT 11280

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 TACTTTATTTACTACGGTGAGGATTTTTTATGTTTAAGAATAATGTAAAACATACTTATG 4858

LOC110375617 TACTTTATTTACTACGGTGAGGATTTTTTATGTTTAAGAATAATGTAAAACATACTTATG 11340

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GGGCTAGTGGGGCTAAGTATCAGACGTGGGGATCGATCATGAGATCCTGGAACGCTGAGC 4918

LOC110375617 GGGCTAGTGGGGCTAAGTATCAGACGTGGGGATCGATCATGAGATCCTGGAACGCTGAGC 11400

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 GCGGTCGATTCTTGTCTGATAATTTCCTCGATGTTTCGGAAAATTGACCCTAAACATGAG 4978

LOC110375617 GCGGTCGATTCTTGTCTGATAATTTCCTCGATGTTTCGGAAAATTGACCCTAAACATGAG 11460

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 ACTCAGAAACAAGTTAATCTGGCAACCAGTCCTAAAACAGTACTGATAGACTGTTGCTAC 5038

LOC110375617 ACTCAGAAACAAGTTAATCTGGCAACCAGTCCTAAAACAGTACTGATAGACTGTTGCTAC 11520

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 AGGTAAAACTCTGGTATTCAGCTGCATTCGTTTAGAGTTTAGACTGAGAGCCAAACCCAA 5098

LOC110375617 AGGTAAAACTCTGGTATTCAGCTGCATTCGTTTAGAGTTTAGACTGAGAGCCAAACCCAA 11580

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 CATAATTGGGAAAAGGTTAGGTAATTGATAAGATGATCAATTTAAATCAATTTCTACATA 5158

LOC110375617 CATAATTGGGAAAAGGTTAGGTAATTGATAAGATGATCAATTTAAATCAATTTCTACATA 11640

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LINE\_R2\_526 TGCTATCTCTAGAGTGTAGTAGAACATGTGTACTATTCAACGTAGATATTATTACTTTTC 5218

LOC110375617 TGCTATCTCTAGAGTGTAGTAGAACATGTGTACTATTCAACGTAGATATTATTACTTTTC 11700

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 AGAGCCAAGAAGCAGCAGCAAAAATCGCATCAGGAGTTCTTATGTTCCTCGCCCATTTAC 5278

LOC110375617 AGAGCCAAGAAGCAGCAGCAAAAATCGCATCAGGAGTTCTTATGTTCCTCGCCCATTTAC 11760

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 CGGATTGGCAGGTA---------------------------------------------- 5292

LOC110375617 CGGATTGGCAGGTACTAACATCTTATATTGGGATGTCACATGTCACATTTCTCGCTGAAG 11820

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_R2\_526 ------------------------------------------------------------ 5292

LOC110375617 AAAGATAAGTCTTAATTGCTGCTGTTTCCCATCCTCTCAACCGCATCCTGAGGAACTTCT 11880

LINE\_R2\_526 ------------------------------------------------------------ 5292

LOC110375617 TCGCGAATCAAGATATCAAGATAGCCTATGTTACCTAAGAAAAGTGTAGCTTTCACATCC 11940

[….]

**Figure S1. Alignment of LINE\_R2526 element with Cytochrome P450 4g15-like gene**

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 ------------------------------------------------------------ 0

LOC113006340 CAGACGGACAGACGGACAGACGGACAGACGGACAGACGGACATGACGAAACTATAAGGGT 60

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 ------------------------------------------------------------ 0

LOC113006340 TCCGTTTTTGCCATTTTGGCTACGGAACCCTAAAAAGTTATTCTATATAAAGAGTGTACA 120

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 ------------------------------------------------------------ 0

LOC113006340 AAATTCTTAAATTATTTGTTGAAGAGAAGAACGGAAAAATAAGACATGATAAATGCGAAC 180

[….]

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 --------------ACCCGCAGAGCATTGTATGTTCTCTGAGTATAGTTAGCCCACAGAG 46

LOC113006340 CGTTATTAAATTGTACCCGCAGAGCATTGTATGTTCTCTGAGTATAGTTAGCCCACAGAG 5700

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 CTCCCGTGTACAGTGATGTACAATATGCTTTAAATAATGTAATTTTAACTGCGTCTGTAC 106

LOC113006340 CTCCCGTGTACAGTGATGTACAATATGCTTTAAATAATGTAATTTTAACTGCGTCTGTAC 5760

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 AACGGGAGAATCTGCGGGCCAACATATTCGCCCGAACTGACAATGATCTGCGTTCTCTCT 166

LOC113006340 AACGGGAGAATCTGCGGGCCAACATATTCGCCCGAACTGACAATGATCTGCGTTCTCTCT 5820

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 CCATATCAACATCATCTTTTAAATCATCGGTGACCCAATGTCCAAGGTATTTAAATTGGT 226

LOC113006340 CCATATCAACATCATCTTTTAAATCATCGGTGACCCAATGTCCAAGGTATTTAAATTGGT 5880

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 ACACTCTAGATAACGCTTCACCGTTCAGGTGAAGTGGCTGTACTGGTGGACTTTTGGGAC 286

LOC113006340 ACACTCTAGATAACGCTTCACCGTTCAGGTGAAGTGGTTGTACTGGTGGACTTTTGGGAC 5940

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 CCGATTTAAAAACCATGTATACAGTCTTTTTCACGTTATATATAAGTCCGTGTGAAGCCA 346

LOC113006340 CCGATTTAAAAACCATGTATACAGTCTTTTTCACGTTATATATAAGTCCGTGTGAAGCCA 6000

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 CAAAAGACTCACAAGCTGCGAGCAACTTCCGGAGAGCTCCGATTGAGGGGGCCAGCAGCA 406

LOC113006340 CAAAAGACTCACAAGCTGCGAGCAACTTCCGGAGAGCTCCGATTGAGGGGGCCAGCAGCA 6060

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 CCATGTCGTCCGCATAGCTGAAGTTGTTACAACAAACACCATCAACATAGCAGCCGACAT 466

LOC113006340 CCATGTCGTCCGCATAGCTGAAGTTGTTACAACAAACACCATCAACATAGCAGCCGACAT 6120

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 GCATGCCGCTGAGCTCCTCAACCAGGGCGTTTACGTACAGGTTGAAGAGTAGGGGTGAGC 526

LOC113006340 GCATGCCGCTGAGCTCCTCAACCAGGGCGTTTACGTACAGGTTGAAGAGTAGGGGTGAGC 6180

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 TCAAACCACCCTGTCGCACCCCACACTCCAACCCACTCGCATCCGAAAGTTCACCCGCCC 586

LOC113006340 TCAAACCACCCTGTCGCACCCCACACTCCAACCTACTCGCATCCGAAAGTTCACCCGCCC 6240

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 ACTTCACACGGTTCTCTTGGTTGAGATACCAGTA-------------------------- 620

LOC113006340 ACTTCACACGGTTCTCTTGGTTGAGATACCAGTACCTCAGGATTGATGCCAACTCTGGTG 6300

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 GCACTCCAGTATCTGCTAACTTCTGCCACAGAACATCGTATGAGACTAAATCAAATGCCT 6360

[….]

LINE\_RTE84107 ------------------------------------------------------------ 0

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 CTATTATTCGTACATTTCCAAAAATTTTTAAAATCGGACTTTGAATGGTGCTTAGCTAAG 7020

LINE\_RTE84107 ATATCCATCTTGATTTGTTCCTGGTGGTTCTGACACCACTTTAATTTACTTTTAAATTCT 60

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 ATATCCATCTTGATTTGTTCCTGGTGGTTCTGACACCACTTTAATTTACTTTTAAATTCC 7080

LINE\_RTE84107 TTACGTGCCTGTGTCATTTCAGTAAACGTATCCGAGTTACTTGGTTTACCACTAGATGCC 120

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 TTACGTGCCTGTGACATATCAATAAATGTTTCAGAGTTACTTGGTTTACCACTAGATGCC 7140

LINE\_RTE84107 CATATGTTGAACTTTAGCCTAGCATTCCTGTAAGCCTCGCTTACATGTTTATTCCAACCT 180

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 CATATGTTAAACTTTAGCCTAGCATTCCTGTAAGCCTCGCTCACATGCTTATTCCAACCT 7200

LINE\_RTE84107 GCCAGCAGCTTTTTACGTCTACCCTTATTTGTTACGTAAGAGAAACGTGCAGCGTCACAT 240

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 GCCAGCAGCTTCTTACGTCTACTCTTATTTGTTACGTAAGAGAAACGTGCAGCGTCACAT 7260

LINE\_RTE84107 AAAATATTTACTACATTTATATACATTCTATCTATAATTTGCTTATGACTATATAAATTA 300

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 AAAATACTTACTACATTTATATACATTTTATCTATAATTTGCTTATGACTATATAAATTA 7320

LINE\_RTE84107 CAATGTTTACCACTACAAGATTGAAACTCTATCGGGAAATCTACATATTTTAACTTAGCA 360

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 CAATGTTTACCACTACAAGATTGAAACTCTATAGGGAAATCTACATATTTTAACTTAGAA 7380

LINE\_RTE84107 TTACATATATTTTTAAATTTATTAATTTGAGATCCATTTCTATTACCCCAGTGTACTTTA 420

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 TTACATAAATTATGATATTTATTAATTTGAGATCCATTTCTATTACCCCAGTGTACTCTA 7440

LINE\_RTE84107 TTACATGGTGATGTTTTTAATTGAGTTTTATGCAATACTATAT-----TTAAATTACACT 475

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 TTACATGGTGATGTTTTTAATTGAGTTTTATGCAATACTATATTTTATTTAAATTACACT 7500

LINE\_RTE84107 TTATAACTAGTGGGTAGTGATCAGACCAATATATGTCATGTTTCACATATATATATCTGT 535

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 TAATAACTAGTGGGTAGTGATCAGACCAATATATGTCATGTTTAACATA--TATATCTGT 7558

LINE\_RTE84107 AATACAGATAGCAGCTGCCTGAGTAACAATACAGTGGTCTAACCACCTTTTACTATTATG 595

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 AATACAAATGGCAGCTGCCTGAGTAACAATACAGTGGTCTAACCACCTTTTACTGTTATG 7618

LINE\_RTE84107 TGCTTCACTAATGAAAGTAAAAGTACCTTGCAAATTGTGATGATTTAGATCCGCACATGT 655

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 TGCTTCACTAATGAATGTAAAAGTACCTTGCAAATTCTGGTGATTTAGATCCGCACAAAT 7678

LINE\_RTE84107 CCACCTTTGCTCGCGTGAAAAGCTTAGGAGCTCATCACAAAAACGTTCACCGGGATGTGC 715

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 CCACCTTTGCTCACGTGAAAAGCTTAGGAGCTCATCACAAAAACGTTCACCGGGATGTGC 7738

LINE\_RTE84107 GTTAAAATCCCCCAATACAAATACT----------------------------------- 740

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 GTTAAAATCCCCCAATACAAATACTGACTCTACATTGCTGTCCTGTATGATTGCACTAAT 7798

LINE\_RTE84107 ------------------------------------------------------------ 740

LINE\_RTE17512 ------------------------------------------------------------ 620

LOC113006340 TGCGCCTAAACAGTCCGTAAACTCGGGTAAGTTCTCACTGCAGTCAACGGGCATATAAAC 7858

[….]

**Figure S2. Alignment of LINE\_RTE84107 and LINE\_RTE17512 elements with Cytochrome P450 4C-like gene**

TIR\_CACTA3565 ------------------------------------------------------------ 0

LOC110381376 TCAGACATGGTGTTGTTAGTACTGGCCATAGCTTGTTGCGTGTTGTTCGCTGTATGGAGA 60

TIR\_CACTA3565 ------------------------------------------------------------ 0

LOC110381376 CTGGTGAAGCCGAGGTCTCCATCATCTCCCGAAAGCCCTGAGAAGATAGCTGACTCTTTT 120

TIR\_CACTA3565 ------------------------------------------------------------ 0

LOC110381376 TGTAAGACATTCACTTCATTATTTGTTTAACTTCGTTTTTAATCATATCAAGATGTACCT 180

TIR\_CACTA3565 ------------------------------------------------------------ 0

LOC110381376 ATTTTCAAATTACAACCACACTGGCCTTATTTTCGGCCGTATGGACACATTTCTTCTTTA 240

[….]

TIR\_CACTA3565 ----------------------------------------------------------TA 2

LOC110381376 TGTCCTCTTAAAACCGGTGGCTGGCCATTTCATAAGTTTGGAGTTGAGGGTGTAATAATA 6900

\*\*

TIR\_CACTA3565 ACACTAGTTTACACGGTTTTTATACCCCAGATGAAAGTTGTTGAATTTTATCTATCTATC 62

LOC110381376 ACACTAGTTTACACGTTTTTTATACCCCAGATGAAAGTTGTTGAATTTTATCTATCTATC 6960

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TIR\_CACTA3565 TATAGGTACTCTAGGAAAAATATTTAAAAAAAATCTATCACGTCCACATTTGGAATTATA 122

LOC110381376 TATAGGTACTCTAGGAAAAATATTTAA-AAAAATCTATCACGTCCACATTTGGAATTATA 7019

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 TTTAATTTAAAAAACACGAGAAAACGGACCATAAACAACTAAAAATTATTAATTTTGGAC 182

LOC110381376 CTTAATTTAAAAAACACGAGAAAACGGACCATAAGCAACTAAAAATTATTAATTTTGGAC 7079

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 TTCTTTTTGTAGGTTTCGGAATCGGTTTCTCTTAATATAGACCAGGAAGTAGTCTCCCAA 242

LOC110381376 TTCTTTTTGTAGGTTTAGGAATCGGTTTCTTTTAATATAGACCAG-CAGTAGTCTCCCAA 7138

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 CATATTTTCGTCCCAATAGCCTTGATGACGATCTTCAAAAGCCTTTAAATCCTGGTGAAA 302

LOC110381376 CATATTTTCGTCCTAATAGCCTTGATGACGATCTTCAAAAGCCTTTAAATCCTGGTGAAA 7198

\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 ATGCTCTCCTTGTTCGTCGCTCATGCTTCCTAAGTTTTCCGGAAAAAAATCCAAGTGGGA 362

LOC110381376 ATGCTCTCCTTGTTCGTCTCTGATGCTTCCTAAGTTTTCCGGAAAAAAATCCAAGTGGGA 7258

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 ATGTAGAAAATGAATCTTTTGACATGTTAACACCCATCTTATGATAATTTTGTAATGAAT 422

LOC110381376 ATGTAGAAAATTAATCTTTTGACATGTTAACACCCATCTTATGATAATTTTGTAATGAAT 7318

\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 CACTCACTATCTCTTTATTGTTTTCACTTTTATTATTGCTTTAAAAAGTCTCTAACAACA 482

LOC110381376 CACTCACGATCTCTATTGTTTT--CACTTTT-ATTATCGCTTAAAAGGTCTCTAACAACA 7375

\*\*\*\*\*\*\* \*\*\*\*\*\* \* \* \*\* \*\*\*\*\*\*\* \* \* \*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 GTTTTGAATGAATTCCAAGCAACTCTTTCAGTCGTAGATAAAAGAGTATCAAACTTAAAA 542

LOC110381376 GTTTTGAATGAATTCCAAGCAACTCTTTCAGTCGTAAATAAAAGAGTATCAAACTTAAAA 7435

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 TCACTTATGATTTTGCGTACTTGTGGGACGCCAAACACCCCCTTTTTAA-----GTGACA 597

LOC110381376 TCACTTATGATTTTGCGTACTTGTGGGACGCCAAACACAGTGGCCCATCTTTAAATGACA 7495

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*

TIR\_CACTA3565 TATGCATATGAAACAATACCCGACTTAGTTTTCCCTATTAAAACCCGAAGTCTTAGTAAC 657

LOC110381376 TATGCATAT----ACAATACCCGACTTAGTTTTCCTATTAAAACCCGAAGTCTTAGTGAC 7551

\*\*\*\*\*\*\*\*\* \* \*\* \* \*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*

TIR\_CACTA3565 ACAAAAGTAACAGTCATTTTCGTGATTAGTTGGTTCCCTGCACAACATTGGTGTACCAAA 717

LOC110381376 ACAAAATTAACAGTCATTTTCGTGATTAGTTGGTTCCCTGCACAACATTGGTGTACCAAA 7611

\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 TGACAGGTGTACGTTTTCGCCGGATGACCATCACAGTAAAGTGATTCTACAGCTCTCACA 777

LOC110381376 TGACAGGTAAACGTTTTCGCCAGATGTCCATCACAGTAAAGAGATTCTACAGCTCTCACA 7671

\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\* \*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 AAACACATAGTGAGTCCAGTTTTTTTCTTGATTGGCCACAGGAAATCCGAAATAATGAAG 837

LOC110381376 AAACACATAGTAGGCCCAGTTT-TTTCTTTATTGGCCACAGGAAATCCGAAATAATGAAG 7730

\*\*\*\*\*\*\*\*\*\*\* \* \*\*\*\*\*\*\* \*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 ATATGCAATTTTCAACGATTCTGTCATATGTCTTTTCTTTTTTATAAATATAAATTGTCC 897

LOC110381376 ATATGCAATTTTCAACGATTCTGTCATGT--CTTTTCTTCTTTATAAATATAAATTGTCC 7788

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \* \*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 ACAAACATAACAAAAGCGATCACAACTTTGTTTACACTGTCTACGCGACATTTTATTTGA 957

LOC110381376 ACAAACATAACAAAATCGATCACAACTTTGTTTACACTGTCTACGCGACATTTTTTTTAA 7848

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\* \*

TIR\_CACTA3565 ATTAAACAAAAAATATCTCCTAAACTAAACAAGTAATGCAACACCAAAGATCGAGTAGTT 1017

LOC110381376 ATTAAACAAAAAATATCTCCTAAACTAAACAAGTAATGCAACACCAAAGATCGAGAGT-T 7907

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*

TIR\_CACTA3565 AAGAATGATTCCTAAAAACAAATATTTGAGGGTAGAAAAAAAAATGTGACGTGATAGAAT 1077

LOC110381376 AAGAATGATTCCTAAAAACAAATATTTGAGGGTAGAA-AAAAAATTTGGCGTGATAGAAT 7966

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\* \*\* \*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 TTTTATGTTGTTACTTTTAGAATGTACAAAGGTGGCGGAGAGTACTGGTATAGATTTTGT 1137

LOC110381376 TTTTATGTTGTTACTTTTAGAAAGTACAAAGGTGGCAGAGAGTACTGGTATAGATTTTGT 8026

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_CACTA3565 GAGGGGTATATAAAAAAAATAAAAATTTGTAAACTAGTGTTA------------------ 1179

LOC110381376 GAGGGGTATATGAAAAAAATAAAAAATTGTAAACTAGTGTAATAATTGTCAGTGGGCGGA 8086

\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\* \*

TIR\_CACTA3565 ------------------------------------------------------------ 1179

LOC110381376 CTGAAGGATTGCCACAAAAGGTTTTACAGACTATTGGTTGCCTTATAGTTTCAAAAGATT 8146

TIR\_CACTA3565 ------------------------------------------------------------ 1179

LOC110381376 TTTTAGTTCATTAATGATCGGAATTACCATCCTATTGCCACCCGCTTTTTAAATAAAGCA 8206

TIR\_CACTA3565 ------------------------------------------------------------ 1179

LOC110381376 AGGCTATCCATAAATGGGCTATTTAAACATCATTTTCTATTTACATTTATATCTACATAC 8266

TIR\_CACTA3565 ------------------------------------------------------------ 1179

LOC110381376 ATACATCTACATAACAGTAAACTGTCAACGTAAACTGACATTTCCATAATATACCTATTA 8326

TIR\_CACTA3565 ------ 1179

LOC110381376 AGTACA 8332

**Figure S3. Alignment of TIR\_CACTA3565 element with Cytochrome P450 4C-like gene**

LINE\_Jockey2199 ------------------------------------------------------------ 0

LOC110381042 AAATTGTCTATCATTCGACAAGCTTTAGACAGCTGAAGTTTCTTACGGGACACCAATACT 60

LINE\_Jockey2199 ------------------------------------------------------------ 0

LOC110381042 TCTTCTTGGTCCAAGGTTTTATTTTTGTCATTCTAAAATTGATCTTATTCCTAATCGTTT 120

LINE\_Jockey2199 ------------------------------------------------------------ 0

LOC110381042 TTTGGTCTAATTTCCTTCAGAGCTTCATCAGCGTTTTTCTGGTCATCTTCACGACTGTTG 180

[….]

LINE\_Jockey2199 CCATAAGGGCGGGGACAGAGACGATGTCAATAACTACAGACCCATATCAGTTTTGCCATC 680

LOC110381042 NNNNNNNNNNGGGGACAGAGACGATGTCAATAACTACAGACCCATATCAGTTTTGCCATC 9480

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 AATATCTAAAGTAATAGAAAAGCTAATAAATAATAGACTATTAAAATATCTAAATAAATA 740

LOC110381042 AATATCTAAAGTAATAGAAAAGCTAATAAATAATAGACTATTAAAATATCTAAATAAATA 9540

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 TGACTTACTTTCATCGACTCAATTTGGATTCAGGCAGGGTATTTCTACTGAGGATGCAGT 800

LOC110381042 TGACTTACTTTCATCGACTCAATTTGGATTCAGGCAGGGTATTTCTACTGAGGATGCAGT 9600

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 AACCGCCCTAACTTCAGTAGTAACTGATGAGCTTGATAATGGAAATAAATGTGTTACAGT 860

LOC110381042 AACCGCCCTAACTTCAGTAGTAACTGATGAGCTTGATAATGGAAATAAATGTGTTACAGT 9660

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 ATTCCTAGACTTAAAAAAAGCGTTTGACACCGTCTCTGTCCCAACCCTGGTAAACAAATT 920

LOC110381042 ATTCCTAGACTTAAAAAAAGCGTTTGACACCGTCTCTGTCCCAACCCTGGTAAACAAATT 9720

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 GGAAAATATGGGAAT---------TAGAGGAATGCCACTTAATCTCTTAAAAAGTTATCT 971

LOC110381042 GGAAAATATGGGAATTAGAGGAATTAGAGGAATGCCACTTAATCTCTTAAAAAGTTATCT 9780

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 TTCAAAAAGGAAACAGAAGATTAGAATAGGAGAGTTCACCAGTGAAGACGCAGAGGTATC 1031

LOC110381042 TTCAAAAAGGAAACAGAAGATTAGAATAGGAGAGTTCACCAGTGAAGACGCAGAGGTATC 9840

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 ATACGGCGTACCGCAAGGAAGCGTATTAGGCCCTACACTATTCTTAACGTATATAAATGA 1091

LOC110381042 ATACGGCGTACCGCAAGGAAGCGTATTAGGCCCTACACTATTCTTAACGTATATAAATGA 9900

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 TCTTTCTAGCTTAAAAATCAGAAATGCAAAAATTTTCTCATACGCCGATGATACCGCTGT 1151

LOC110381042 TCTTTCTAGCTTAAAATTCAGAAATGCTAAAATTTTCTCATACGCCGATGATACCGCTGT 9960

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 TGTCTTCTCAGGGAAATCCTGGCAAGAAGTTGAATATGCGGCTGAGGTGGGCATGGCTAA 1211

LOC110381042 TGTCTTCTCAGGGAAATCCTGGCAAGAAGTTGAATATGCGGCTGAGGCGGGCATGGCTAA 10020

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 AATAGCTAAATGGCTAATAAATAACCTACTCACATTAAACACTTCCAAAACTAATTTTAT 1271

LOC110381042 AATAGCTAAATGGCTAATAAATAACCTACTCACATTAAACACTTCCAAAACTAATTTTAT 10080

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 ATGCTTCAGCATTAGTAATCGGACACAGCCTAGTGAGAATTTTAAAATTAAAATCCATCA 1331

LOC110381042 ATGCTTCAGCATTAGTAATCGGACACAGCCTAGTGAGAATTTTAAAATTAAAATCCATCA 10140

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 CTGTGACAACATAAAAAGCCGAAATTGTGACTGTCCAAATATAGCCAAAGTAACACAAGC 1391

LOC110381042 CTGTGACAACATAAAAAGCCGAAATTGTGACTGTCCAAATATAGCCAAAGTAACACAAGC 10200

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 CAAATACTTAGGTGTACTGGTAGACCAAAGACTATCTTGGTACCCCCACCTTGAACACGT 1451

LOC110381042 CAAATACTTAGGTGTACTGGTAGACCAAAGACTATCTTGGTACCCCCACCTTGAACACGT 10260

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 AGCTTGTAGGGTTAGAAAATTGGGCTGGTTATTCAGCGTACTAAGACACGTTGTACCAAG 1511

LOC110381042 AGCTTGTAGGGTTAGAAAATTGGGCTGGTTATTCAGCGTACTAAGACACGTTGTACCAAG 10320

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 GAAAGTGACTAGTCGCCATAACTCATTTAGAAATGTGTTAAATGAGATATATGTCTCTTT 1571

LOC110381042 GAAAGTGACTAGTCACCATAACTCATTTAGAAATGTGCTAAATGAGATATATGTCTCTTT 10380

\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_Jockey2199 GGTGCAATCTGTCTTGGTGTACTGCATTCCTATTTGGGGCGGGTCTGCAAAAACTAAA-- 1629

LOC110381042 GGTGCAATCTGTCTTGGTGTACTGCATTCCTATTTGGGGCGGGTCTGCAAAAAGTAAATT 10440

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*

LINE\_Jockey2199 ------------------------------------------------------------ 1629

LOC110381042 CATTGAGGTGGAGCGAGCTCAACGCGCTCTTATAAAAACAATGTATTTTAAAAAACGAAG 10500

LINE\_Jockey2199 ------------------------------------------------------------ 1629

LOC110381042 GTACCCTACAGAAAATCTCTATCAGATTAGTTATCTACTCTCGGTAAGAAAATTATATAT 10560

LINE\_Jockey2199 ------------------------------------------------------------ 1629

LOC110381042 TATACAAAGCATATTAAAAACACATAAGACCCTACCTTATGATGCATCCAAATTAAATAA 10620

[….]

**Figure S4. Alignment of LINE\_Jockey2199 element with Cytochrome P450 6k1-like gene**

TIR\_Mariner2770 ------------------------------------------------------------ 0

LOC110371343 GAAGCGGTTCGATCGTCTCTGCGAATAAGGGAGCTTGGATTTTCATTTGAACAAAATCTA 60

TIR\_Mariner2770 ------------------------------------------------------------ 0

LOC110371343 AAAGATACTTTATTACTATGTCCAATGTGTTCAGAATGCTGGTGGGGCTGTCACGTTTTT 120

TIR\_Mariner2770 ------------------------------------------------------------ 0

LOC110371343 GCAGTGCTTCGGGAATGTTCGCTGAGGCGAGGAAAGTTGGTATGAAATCCTCATTAAATT 180

[….]

TIR\_Mariner2770 ------------------------------------------------------------ 0

LOC110371343 GTGAATCCTCAACACACTGTGCCGCTTTTAAAAGATGATGACTTTTACATTTGGGACAGG 5640

TIR\_Mariner2770 -----------------ATACGAGGGCGGGTCAATAAGTCCGTGACTTTTTGAATTTCTG 43

LOC110371343 TATGTATAGATAGACATATACGAGGGCGGGTCAATAAGTCCGTGACTTTTTGAATTTCTG 5700

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 ACCTCTTTACTGAAAAAGCAACACTACTCCTGTTAACAGGCATCTATCAGGTGACTCCTG 103

LOC110371343 ACCTCTTTACTGAAAAAGCAACACTACTCCTGTTAACAGGCATCTATCAGGTGACTCCTG 5760

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 ACAAAATTTGAACTTGCTGCGTCAGTTAGATTGTGTTTGACAACTATCTTTATCAGACTA 163

LOC110371343 ACAAAATTTGAACTTGCTGCGTCAGTTAGATTGTGTTTGACAGCTATCTTTATCAGACTA 5820

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 CCCAGTAATCTGAGGAAAAAATGGAACAAAGTGAATTTCGTGTGCTCATTAAGCATTATT 223

LOC110371343 CCCAGTAATCTGAGGAAAAAATGGAACAAAGTGAATTTCGTGTGCTCATTAAGCATTATT 5880

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 TTTTGCGAAAAAAAACCATTACCGAAACCAAGGCTAAGCTTGATAAATACTATGGGGACT 283

LOC110371343 TTTTGCGAAAAAAAACCATTACCGAAACCAAGGCTAAGCTTGATAAATACTATGGGGACT 5940

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 CTGCACCATTGATTTCAATCGTAAAAAAGTGGTTTACTGAATTTCGTTGTGGCCGTACAA 343

LOC110371343 CTGCACCATTGATTTCAATCGTAAA-AAGTGGTTTACTCAATTTCGTTGTGGCCGTACAA 5999

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 GCACTGAAGATGCCGAACGCCCTGGACGCCCAGTTGAAGTCTCTTCACCCGAAACAATCG 403

LOC110371343 GCACTGAAGATGCCGAACGCCCTGGACGCCCAGTTGAAGTCTCTTCACCCGAAACAATCG 6059

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 AAAAAATCCACGGTATGGTGTTGGCCGACCGAAGATTGAAAGTGCAAGAGATTGTGGAAG 463

LOC110371343 AAAAAATCCACGGTATGGTGTTGGCCGACCGAAGATTGAAAGTGCAAGAGATTGTGGAAG 6119

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 CCGTAGGGATCTCGCATGGCTCAGTGGTTTCAATTTTGAATGATCACTTGGGCATGAGAA 523

LOC110371343 CCGTAGGGATCTCGCATGGCTCAGAGGTTTCAATTTTGAATGATCACTTGGGCATGAGAA 6179

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 AGCTTTCCGCAAGATGGGTGCCGCGTTTGCTCACAGTCGACCACAAACGCAATCGTGTAA 583

LOC110371343 AGCTTTCCGCAAGATGGGTGCCGCGTTTGCTCACAGTCGACCACAAACGCAATCGTGTAA 6239

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 CAACTTCACAGGAAGGTTTGGCGTTGTTTGATCGCAATAAGGAGGAGTTTTTGCGCCGTT 643

LOC110371343 CAACTTCACAGGAAGGTTTGGCGTTGTTTGATCGCAATATGGAGGAGTTTTTGCGCCGTT 6299

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 TTGTAACAGTGGACGAAACATGGATCCATCACAACACACCAGAGACCAAACAACAGTCAA 703

LOC110371343 TTGTAACAGTGGACGAAACATGGATCCATCACAACACACCAAAGACCAAACAACAGTCAA 6359

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 AACAGTGGGTTTCTAAGGGTGAATCGGCACCAAAGAAGGCCAAGGTGAGTTTGTCAGCCA 763

LOC110371343 AACAGTGGGTTTCTAAGGGTGAATCGGCACCAAAGAAGGCCAAGGTGAGTTTGTCAGCCA 6419

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 ATAAAGTTATGGCGACTGTTTTTTGGGATGCACGCGGGATAATCCACATTGACTACCTTC 823

LOC110371343 ATAAAGTTATGGCGACTGTTTTTTGGGATGCACGCGGGATAATCCACATTGACTACCTTC 6479

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 AAAAGGGAAGAACAATCAATGGGGAATATTATGCCACCTCATTACCTACCGCTTCAAATA 883

LOC110371343 AAAAGGGAAGAACAATCAATGGGGAATATTATGCCACCTCATTACCTACCGCTTCAAATA 6539

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 CGATTTGAAAAAAAAACCGACCTCATTTGGCCAAGAAAAAAGTTCTTTTCCACCAAGACA 943

LOC110371343 CGATTTGAAAAAAAAACCGACCTCATTTGGCCAAGAAAAAAGTTCTTTTCCACCAAGACA 6599

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 ATGCAAGCACACATGTGCAGTTGCCATGGCAAAAATCCATGAATTCGGCTATGAATTGCT 1003

LOC110371343 ATGCAAGTAAACATGTGCAGTTGCCATGGCAAAAATCCATGAATTGGGCTATGAATTGCT 6659

\*\*\*\*\*\*\* \* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 CCCTCATCCGCCCTATTCTCCAGATTTGGCTCCGAGTGACTACTTCTTGTTCCCAAACCT 1063

LOC110371343 CCCTCATCCGCCCTATTCTCCAGATTTGGCTCCGAGTGACTACTTCTTGTTCCCAAACCT 6719

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 GAAGAAATGGCTTGGTGGAAAAAGATTTGACTCCAATGATGAAGTCATCTCGCAAACAAG 1123

LOC110371343 GAAGAAATGGCTTGGTGGAAAAATATTTGACTCCAATGATGAAGTCATCTCGCAAACAAG 6779

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 GGCCTATTTTGAGGACCTCGACAAATCCTAT------TTTTTGGAAGGGATAAAAAAATT 1177

LOC110371343 GGCCTATTTTGAGGACCTCGACAAATCCAATCAAAAAAATTTGGAAGGGATAAAAAAATT 6839

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 GGAGAAGCGTTGGACAAAGTGTATAGAGCTCAAGGGGGACTACGTTGAAAAATAAAATGA 1237

LOC110371343 GGAGAAGCGTTGGACAAAGTGTATAGAGCTCAAGGGGGACTACGTTAAAAAATAAAATGA 6899

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 TTTATTTATCAAAAAATCTGTGTTTTATTCCAAAAGTCACGGACTTATTGACCCGCCCTC 1297

LOC110371343 TTTATTTATCAAAAAATCTGTGTTTTATTCCAAAAGTCACGGACTTATTGACCCGCCCTC 6959

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TIR\_Mariner2770 GTA--------------------------------------------------------- 1300

LOC110371343 GTATTTATCGTGTAATCGTGGTATAACGACAATTATTGTAATCTTTGCAGTCACGCCATT 7019

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TIR\_Mariner2770 ------------------------------------------------------------ 1300

LOC110371343 GCTATATATTTGGTGACCAAATATGGAGCCGACGATTCTCTATACCCAGCTGATCCGAAA 7079

TIR\_Mariner2770 ------------------------------------------------------------ 1300

LOC110371343 AAGAGGGCCGTCATTGATCAACGTCTCCACTTTGATAGTGGGATTCTGTTTCCAGCCTTA 7139

[….]

**Figure S5. Alignment of TIR\_mariner2770 element with glutathione S-transferase 1-like gene**

LINE\_RTE63004 ------------------------------------------------------------ 0

LOC110377844 TCGCGCCGCGGTCGACCCGCGAACAGCGCATTTAAAAAACCTACTCGGTATCGCGCGGGA 60

LINE\_RTE63004 ------------------------------------------------------------ 0

LOC110377844 AAATAGTGACAGTTCGATTTTTTAATTCCATAGTCAACGTCAGATATTATTTGTCAAAAC 120

LINE\_RTE63004 ------------------------------------------------------------ 0

LOC110377844 TCGGACATTATGACAGATTGATTTTTTAATTTAATTAAATAGTCAAAGTCAGTTTATTTT 180

[….]

LINE\_RTE63004 ------------------------------------------------------------ 0

LOC110377844 AACTTATGTATCCTAAAATACACCAATCCTTAGGTGGTAGGAGAGTGACCACCAACAATT 38580

LINE\_RTE63004 ---------AAGAGGGTTGACGTCAGGCAGGCGGCCGGTCGTAAAAACACAATGCCAAAT 51

LOC110377844 GCATTCCCAAAGAGGGTTGACGTCAGGCAGGCGGCCGGTCGTAAAAACACAATGCCAAAT 38640

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 CATATAGCAATATGTCGAATGTTGAAGAGATGAGCGATAGGGCTAGGGCGTACCCCTCAG 111

LOC110377844 CATATAGCAATATGTCGAATGTTGAAGAGATGAGCGATAGGGCTAGGGCGTACCCCTCAG 38700

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 GCGACGCGCAGGGGCAGCACCCGGCCCCTGTGGGAAGTGGACAAGGGTTTTTGCACCAAC 171

LOC110377844 GCGACGCGCAGGGGCAGCACCCGGCCCCTGTGGGAAGTGGACAAGGGTTTTTGCACCAAC 38760

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 CTGGGCGGGTGCAATGTAAGAAGCGAGTCCGGGAAGTAAGATTGAGGTATGCAAGTTGGA 231

LOC110377844 CTGGGCGGGTGCAATGTAAGAAGCGAGTCCGGGAAGTAAGATTGAGGTATGCAAGTTGGA 38820

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 ATGTAGGAACGATGACTGGAAGAGCCAGAGAGTTAGCGGATGTATTAAAGAGAAGACGAA 291

LOC110377844 ATGTAGGAACGATGACTGGAAGAGCCAGAGAGTTAGCGGATGTATTAAAGAGAAGACGAA 38880

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 TAAATGTGGCATGTTTGCAAGAGACTAAATGGAAGGGCACGAAAGCTAGAGAAATTGGGG 351

LOC110377844 TAAATGTGGCATGTTTGCAAGAGACTAAATGGAAGGGCACGAAAGCTAGAGAAATTGGGG 38940

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 AAGGATACAAGTTTTATTATTGTGGAAGTGATGGGAAAAGGAATGGGGTAGGCATTGTGT 411

LOC110377844 AAGGATACAAGTTTTATTATTGTGGAAGTGATGGGAAAAGGAATGGGGTAGGCATTGTGT 39000

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 TAGATAAGAACTTGAAAAAAAGTGTGATAGATGTAAAGAGAGTGAATGATAGAATAATAG 471

LOC110377844 TAGATAAGAACTTGAAAAAAAGTGTGATAGATGTAAAGAGAGTGAATGATAGAATAATAG 39060

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 TTGTTAAAATAATGTATGAAAGTTTGATAATAAATGTTATAAGTGTGTATGCTCCTCAAG 531

LOC110377844 TTGTTAAAATAATGTATGAAAGTTTGATAATAAATGTTATAAGTGTGTATGCTCCTCAAG 39120

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 TCGGTTGTGATGACAGGGTGAAAGAACAATTTTGGATGGATTTCGATGCAGTAATGATGA 591

LOC110377844 TCGGTTGTGATGACAGGGTGAAAGAACAATTTTGGATGGATTTCGATGCAGTAATGATGA 39180

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 ATGTGCCGACGAATGAACAGGTATTTGTGGGAGGAGACTTTAATGGCCATGTTGGCAGAA 651

LOC110377844 ATGTGCCGACGAATGAACAGGTATTTGTGGGAGGAGACTTTAATGGCCATGTTGGCAGAA 39240

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 TGAGAGGGAATTACGAAAGAGTGCATGGAGGGTGGGGGTTCGGTTGCCAGAATGACGAGG 711

LOC110377844 TGAGAGGGAATTACGAAAGAGTGCATGGAGGGTGGGGGTTCGGTTGCCAGAATGACGAGG 39300

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 GTGAAGCCTTGCTACAGGCTGCTACTGCGTTTGACCTAGCAGTGGTAAATACGTGGTTTC 771

LOC110377844 GTGAAGCCTTGCTACAGGCTGCTACTGCGTTTGACCTAGCAGTGGTAAATACGTGGTTTC 39360

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 AAAAGAACATCGAACATCTGATCACCTATAAAAGCGGTCACCACGTGACACAAATAGATT 831

LOC110377844 AAAAGAACATCGAACATCTGATCACCTATAAAAGCGGTCACCACGTGACACAAATAGATT 39420

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 ACTTTTTGGTCAGACGCAGTAGTTTAAAGAACATCAAAGACTGCAAGGTGATACCAGGCG 891

LOC110377844 ACTTTTTGGTCAGACGCAGTAGTTTAAAGAACATCAAAGACTGCAAGGTGATACCAGGCG 39480

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LINE\_RTE63004 AAG--------------------------------------------------------- 894

LOC110377844 AAGCTTTAGTCTCGCAGCACCGACCCCTAATTATGGATGTGATTTTAACTTCCCGGCCAA 39540

\*\*\*

LINE\_RTE63004 ------------------------------------------------------------ 894

LOC110377844 AAGCCAAAGAGAGACGGGCCCCCAAAATTAAATGGCATCTGTTGGGGAAGGCTGAGTTGG 39600

LINE\_RTE63004 ------------------------------------------------------------ 894

LOC110377844 CCCAGGAATTTAGAAAAGTAGTGGTTGATAAGATGATTGAAATGGGAGAAATGAATGAAA 39660

[….]

**Figure S6. Alignment of LINE\_RTE63004 element with ABC-C1 homolog 49-like gene**

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 ------------------------------------------------------------ 0

LOC110376033 CTTACCACAACCGGCGACGCCACTGTCCGTAACGTACGTGGCGACCGTAGTCACCGACTC 60

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 ------------------------------------------------------------ 0

LOC110376033 GTGTACCAATTGTTTATGTTGTGTTCCGTTTTTTAATTCCGTTTAATTATTGAAAAAGAA 120

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 ------------------------------------------------------------ 0

LOC110376033 AGTGTTTGTGCACGCGCGGTTTCGCGCCAAAATATTGTGACAGTGACTTTTTGTGATCAG 180

[….]

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 ---------------------------------------------CAGTAGTTCCCAAAC 15

LOC110376033 GCCTCAGCTAACCGAAGACTGCAGAGACCAGTGCTTTATTTAGAGCAGTAGTTCCCAAAC 1500

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 TTATTTTTCTCGTGGACCACTTTCAAAATTTTACTGGTTTCGGTGGACCCCCTGCTGCTA 75

LOC110376033 TTATTTTTCTCGTGGACCACTTTCAAAATTTTACTGGTTTCGGTGGACCCCCTGCTGCTA 1560

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 CATTTCTACCACATTCTTAAAGTCGCCAAAAAATAAAAATTGTGTCACTTCTGAGTTCTG 135

LOC110376033 CATTTCTATCACATTCTTAAAGTCGCCAAAAAATAAAAATTGTGTCACTTCTGAGTTCTG 1620

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 TCCCTATATTCCGATATGTAAAATAAAAACGAAAAATGGTACATTTTATATCACTTTATT 195

LOC110376033 TCCCTATATTCCGATATGTAAAATAAAAACGAAAAATGGTACATTTTATATCACTTTATT 1680

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 TATTAAAAGAATAGAATAAGACAAGAAAAAAATATTAAGGTAATAAGTATAGGTTCAGGT 255

LOC110376033 TATTAAAAGAATAGAAGAAGACAAGAAAAAAATATTAAGGTAATAAGTATAGGTTCAGGT 1740

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 CATAATTTTAATTAATGGGAAGGATGTATCTGATGGAGTGTCAGCAAACGATCAATGTTT 315

LOC110376033 CATAATTTTAATTAATGGGAAGGATGTATCTGATGGAGTGTCAGCAAACGATCAATGTTT 1800

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 GGCTTTATTTTTGTGAGCAATAACCGCAAATCCCCCCGCTCTGTGATGTTTAATTTGCTC 375

LOC110376033 GGCTTTATTTTTGTGAGCAATAACCGCAAATCCCCCCGCTCTGTGATGTTTAATTGGCTC 1860

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 CTTTTTTTTGTTAAGAGGTTTGTAACGGCACTAAAACTCCTTTCGACAAGGTATGACGAG 435

LOC110376033 CTTTTTTTTGTTAAGAGGTTTGTAACGGCACTAAAACTCCTTTCGACAAGGTATGGCGAG 1920

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 GGAAAAGCTATTAAAAATTTCCTTGCGATTTCCCACAGTCCAGGATATTTTTCGGGTATT 495

LOC110376033 GGAAAAGCTATTAAAAATTTCCTTGCGATTTCCCACAGTCCAGGATATTTTTCGGGTATT 1980

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 TCTGCTTGCAGCCAAAATGTTGGGTAGCCTTTTCTAAATTTCACCTTCAGCTCCTCATTA 555

LOC110376033 TCTGCTTGCAGCCAAAATGTTGGGTAGCCTTTTCTAAATTTCACCTTCAGCTCCTCATTA 2040

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 GTGCTTAGCTCGAGCAGCTCCTCTTGTAATACAACATTGGCCACTTCCGTTTCATCAAAT 615

LOC110376033 GTGCTTAGCTCGAGCAGCTCCTCTTGTAATACAACATTGGCCACTTCCGTTTCATCAAAT 2100

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 GGATTTATGATCCATGGTGGTATATCCATCGTCAGTATATCTTCAAACCTGGTTTGAAAT 675

LOC110376033 GGATTTATGATCCATGGTGGTATATCCATCGTCAGTATATCTTCAAACCTGGTTTGAAAT 2160

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 TGTACGTAATATCGAATACGCAAGTTTGGACAAGTAACAGTCGCTTGCCTTATTAAAATA 735

LOC110376033 TGTACGTAATATCGAATACGCAAGTTTGGACAAGTAACAGTCGCTTGCCTTATTAAAATA 2220

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 TTATCTGCTTAGATAGGTACTTAAAACAATGTAGGTAGGCCCTTATAAAAACTATGCTTA 795

LOC110376033 TTATCTGCTTAGATAGGTACTTAAAACAATGTAGGTAGGCCCTTATAAAAACTATGCTTA 2280

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 CATTTTTGCTCTTTACTATCAAAAGCAGAAAAATTTTCGTGGACCCCCATTAACATCTTA 855

LOC110376033 CATTTTTGCTCTTTACTATCAAAAGCAGAAAAATTTTCGTGGACCCCCATTAACATCTTA 2340

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 TGGACCCCCATTTTTTGTTCACGCCTACGTAGACCCCCAGCAAGTCTCCCGTGGACCCCT 915

LOC110376033 TGAACCCCCATTTTTTGTTCACGCCTACGTAGACCCCCAGCAAGTCTCCCGTGGACCCCT 2400

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 GGGGGTCCACCTGGACCACTTTGGGAATCACTGATT------------------------ 951

LOC110376033 GGGGGTCCACCTGGACCACTTTGGGAATCACTGATTTAGAGCGACTACCTATCTGAAGTC 2460

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 CTTCAAACCGTTACCGGGGCCTTTTTGCTTTTTCAGTCCCGTTGTCCCGTTGTACGCTTA 2520

[….]

TIR\_Mariner419 ------------------------------------------------------------ 0

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 TTTAAGCATGTTCCAGACATGTTATACAGGATTCATGGCTGGGTTTCTTGCAGGCCAGTC 91980

TIR\_Mariner419 -----------------CCTCGAACAAGTAATCGGTTACGCAAAGAGCTGTGTGAGGTCG 43

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 CAATTTTTGAATACCGACCTCGAACAAGTAATCGGTTACACAAAGAGCTGCGTGAGGTCG 92040

TIR\_Mariner419 AGCATTGTCCTGCATTATACGAAATTCTTCACTTCCTATGAATCCCTGACTAGGGTAAAA 103

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 AGCATTGTCCTGCATTATACGAAAATATTCACTTCCTATGAATCCCTGACA-GGGTAAAA 92099

TIR\_Mariner419 CATGATTTTGAAGGATCTCTTCAATATACCGCACTGTTGTCAGACGACTTTCGACAACCA 163

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 CATGATTTTGAAGGATTTCTTCAATATACAGCACTATTGTCAGACGATTTTCGACAACCA 92159

TIR\_Mariner419 ATAATTCAGTACGGGCTTCTGAACTTATGCCTCGCCAAACCAAGATGGACCCACCATGAA 223

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 ATAATTCAGTACGGGATTCTGAACTTATGCCTCGCCAAACCAAAACGGACCCACCATGAA 92219

TIR\_Mariner419 AACCGACTGTTTGCTTGGTAGTGGTGGGAAGAAACCATTCTCCGCGCTTTCTCCATTCAC 283

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 AACCGACTGTTTGCTTGGTAGTAGTGGGAAGAAGCCGTTCTCCGCGCTTTCTCCATTCAC 92279

TIR\_Mariner419 ATTCACGGCCGTCTGGAGCTCTTAAGACGACTCTGCATTCATCGGTCCATAAAATTTTAC 343

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 ATTTACGGCCGTCTGGAGCTATTAAGACGACTCTGCATTCATCGGTCCATAAAATTTTAC 92339

TIR\_Mariner419 TCCATTGGTCATGCGTCCAATTTGCATGTTCTCTTGCAAACCTAAGTCTGGCTATGCGAT 403

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 TCCATTGGTCATGCGTCTAATTTGCATGTTTTCTTGCAAACCTAAGTCTGGCTATGCGAT 92399

TIR\_Mariner419 GGTGCGGGAGAAGTTCCGGGCCTCGAGTTGGTCTTCGAGCACGCAGATCCCGTTCCTCCA 463

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 AGTGCGGGAGAAGTTCCGGGCCTCGAGTTGGTCTTCGAGCACGCAGATCCCGTTCCTCCA 92459

TIR\_Mariner419 TCCTTCTTCTTATTGTGCACTTACGGACGTTGACTTCTCTTGCTGTTTGCAAAGGCTGGC 523

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 TCCTTCTTCTTATTGTGCGCTTACGGACATTGACTTCTCTTGCTGTTTGCAAAGCCTGGC 92519

TIR\_Mariner419 GTATCTCTAACGCAGTGAGAAACCGATTTTTTCATTATTGCACGTACGATAAATCGGTCG 583

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 GTATCTCTAACGCAGTGAGAAACCGATT-TTTCATTATTGCACGTACGATAAATCGGTCG 92578

TIR\_Mariner419 TCGTGCGCCGACGAACACCTTACACCCCCACTTTCTGGTCTTCTTGTGTAAAGGCCAGTC 643

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 TCGTGCGCCGACGAACACCTTACACC-CCACTTTCTGGTCTTCTTGTGTAAAGGCCAGTC 92637

TIR\_Mariner419 TGGTCATACATTTTCTATGCATATCTTTAACTTGTACGCGGTGCACTTAAAGTTTCAACC 703

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 TGGTCATACATTTTCTATGCATATCTTTAACTTGTACGCGGCGCACTTAAAGTTTCAACC 92697

TIR\_Mariner419 ATCTTCCGCTGCGTACGCCCTTGACGTCTTAGCAACACTACTTGAGCAACTTGAGCTGCA 763

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 ATCTTCCACTGCTTCCGCCCTTGACGTCTTAGCAACACTACTTGAGCAACTTGAGCTGCA 92757

TIR\_Mariner419 GTAAGGGTAATTTTCAGATCAAATTGTGAAAAAAAAGAGAAACAAAAAACGATCATAATC 823

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 GTAAGGGTAATTTTCAGATCAAATTGTGAAAAAAAGAGAAAC-AAATAACGATCATAAAC 92816

TIR\_Mariner419 ATTATTTTTTTTTTTGGAACGTGCTTAGTACTTCGGCAATTTCTATCTGAATTTAAACTT 883

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 A--TAAATTTTTTTTGGAACGTGCTTAGTACTTCAGCAATTTCTATCTGAATTTAAACTT 92874

TIR\_Mariner419 AACTTTCTGCTTTGTGTTCCAACAACGGAATCTGTTTCTAGTGTTATAAAAGTTAAACAG 943

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 AACTTTCTGCTTTGTGTTCCAATAAAGGAAGCTGTTTCTAGTGTTACAAAAGTTAAACAG 92934

TIR\_Mariner419 ACACACATTTTTCTGTATTTTAATTAACAATTACGAAAGGACTGACAATATGTCATATGA 1003

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 ACAGACATTTTTCTGTATTTTAATTAACAATTACGAAAGGACTGACAATATGTCATATGA 92994

TIR\_Mariner419 AATTAGAATTTACAACAGCTATCTGGGCTGATATCTACTTGTGTTTGTTTGGGCCAAATT 1063

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 AATTAGAATTTACAACAGCTATCTGGGCTGATATCTACTTGTATTTGTTTGGGCCAAATT 93054

TIR\_Mariner419 CCGTGCCGCTGAGTGTAGTTTC-------------------------------------- 1085

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 CCGTGCCGCTGAGTGTAATTAATTATACAAATAGTCCTTTTTCTAATTTTGAATTCTGTA 93114

TIR\_Mariner419 ------------------------------------------------------------ 1085

TIR\_hAT2824 ------------------------------------------------------------ 951

LOC110376033 AACTGCGTTATATTGATTTAACAATAGAAACTATTTGAAAAACCACTTTCGGCTTCAAGT 93174

**Figure S7. Alignment of TIR\_mariner419 and TIR\_hAT824 elements with ABCG member 20 gene**