

Genomic instability of the sex-determining locus in Atlantic salmon (*Salmo salar*)

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BT_sdY -----CTCCCTT--ACTAATCATT TTTACATGAAAAAATGCATATC
AS_Tasmanian_Ssa02_sdY -----CTCCCCTTAAC TAATCATT TTTACATGAAAAAATGCATATC
AS_Tasmanian_Ssa03_sdY -----ACTCCCCTT- ACTAATCATT TTTACATGAAAAAATGCATATC
AS_European_sdY GAGAGAAACACTCCCCTTAAC TAATCATT TTTACATGAAAAAATGCATATC
AS_Tasmanian_Ssa06_sdY -----ACTCCCCTTAAC TAATCATT TTTACATGAAGAAATGCATATC
Chinook_sdY -----CTCCCCTTAAC TAATACT TTTTACATGAAAACATGCACATA
RT_sdY -----AACACTCCCCTTAAC TAATACT TTTTACATGAAAACATGCTCATA
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BT_sdY AAAAACTCCAGCGCATGTTTAAAAGCAGTCCTTAGAGGTTTTGAATCCAC
AS_Tasmanian_Ssa02_sdY AAAAACTCCAGCGCATGTTTAAAACAGTCCTTAGAGGTTTTGAATCCAC
AS_Tasmanian_Ssa03_sdY AAAAACTCCAGCGCATGTTTAAAACAGTCCTTAGAGGTTTTGAATCCAC
AS_European_sdY AAAAACTCCAGCGCATGTTTAAAACAGTCCTTAGAGGTTTTGAATCCAC
AS_Tasmanian_Ssa06_sdY AAAAACTCCAGCGCATGTTTAAAACAGTCCTTAGAGGTTTTGAATCCAC
Chinook_sdY AAAAACTCCAGCTCATGTTTAAAAGCCGTCCTTAGAATAGTTGAGTCCAT
RT_sdY AAAAACTCCAGCTCATGTTTAAAAGCCGTCCTTAGAATATTTGAGTCCAT
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          |                exon1                |
          |-----Exon 1F----->             |
BT_sdY   CTGCCCTTCA | ATGGCTGACAGAGAGGCCAGATTCCAAG | GTACAGAACACA
AS_Tasmanian_Ssa02_sdY CTGCCCTTCA | ATGGTTGACAGAGAGGCCAGATTCCAAG | GTACAGAACACA
AS_Tasmanian_Ssa03_sdY CTGCCCTTCA | ATGGTTGACAGAGAGGCCAGATTCCAAG | GTACAGAACACA
AS_European_sdY CTGCCCTTCA | ATGGTTGACAGAGAGGCCAGATTCCAAG | GTACAGAACACA
AS_Tasmanian_Ssa06_sdY CTGCCCTTCA | ATGGTTGACAGAGAGGCCAGATTCCAAG | GTACAGAACACA
Chinook_sdY CTGCCCTTCA | ATGGCTGACAGAGAGGCCAGAATCCAAG | GTACAGAACACA
RT_sdY   CTGCCCTTCA | ATGGCTGACAGAGAGGCCAGAATCCAAG | GTACAGAACACA
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BT_sdY CAAATATTCAGTATGTTATCTAAGAGTGTTTTGATTTTCATTATTTTGGG
AS_Tasmanian_Ssa02_sdY CAAATATTCAGTATGTTATCTAAGAGTGTTTTGATTTTCATTATTTTGGG
AS_Tasmanian_Ssa03_sdY CAAATATTCAGTATGTTATCTAAGAGTGTTTTGATTTTCATTATTTTGGG
AS_European_sdY CAAATATTCAGTATGTTATCTAAGAGTGTTTTGATTTTCATTATTTTGGG
AS_Tasmanian_Ssa06_sdY CAAATATTCAGTATGTTATCTAAGAGTGTTTTGATTTTCATTATTTTGGG
Chinook_sdY CAAACATTCAGTATGTTATGTAAGACTG-TTTGGTTTTTCATTATTTTGGG
RT_sdY CAAACATTCAGTATGTTATGTAAGACTG-TTTGGTTTTTCATTATTTTGGG

BT_sdY CCTATGAATTTCTGATGTTAA-----GGACTGTATCTATGTGGTT
AS_Tasmanian_Ssa02_sdY CCTATGCATTTCTGATGTTGAACAGCTTAA-GGACTGTGTCTATGTGGTT
AS_Tasmanian_Ssa03_sdY CCTATGCATTTCTGATGTTGAACAGCTTAA-GGACTGTGTCTATGTGGTT
AS_European_sdY CCTATGCATTTCTGATGTTGAACAG--AA-GGACTGTGTCTATGTGGTT
AS_Tasmanian_Ssa06_sdY CCTATGCATTTCTGATGTTGAACAGCTTAA-GGACTGTGTCTATGTGGTT
Chinook_sdY CCTATGAATGTCTGATGTTATAACAGCTTACTGTGCTGTGTACATGTGGTT
RT_sdY CCTATGAATGTCTGATGTTGTACAGCTTACTGTGCTGTGTATATGTGGTT
***** ** ***** * **** * *****

BT_sdY ATTTCCATGTCTGATCTTTTGAGGGAAATGCTCAAAATGAGTATATAGCA
AS_Tasmanian_Ssa02_sdY ATTTCCATGTCTGATCTTTTGAGGGAAATGCTCAAAATGAGTATATAGCG
AS_Tasmanian_Ssa03_sdY ATTTCCATGTCTGATCTTTTGAGGGAAATGCTCAAAATGAGTATATAGCG
AS_European_sdY ATTTCCATGTCTGATCTTTTGAGGGAAATGCTCAAAATGAGTATATAGCG
AS_Tasmanian_Ssa06_sdY ATTTCCATGTCTGATCTTTTGAGGGAAATGCTCAAAATGAGTATATAGCG
Chinook_sdY ATTTCCATGTCTGATTTT-----CATGTCT
RT_sdY ATTTCCATGTCTGA-----

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BT_sdY          TTTTGGGAATTAG---CTTCAGTTGTACAATTTTCATTACTATAACGTTTTTTT
AS_Tasmanian_Ssa02_sdY  TTTTGGGAATTAG---CTTCAGTTGTACAATTTTCATTACTATACTTTTTTTT
AS_Tasmanian_Ssa03_sdY  TTTTGGGAATTAG---CTTCAGTTGTACAATTTTCATTACTATACTTTTTTTT
AS_European_sdY      TTTTGGGAATTAG---CTTCAGTTGTACAATTTTCATTACTATACTTTTTTTT
AS_Tasmanian_Ssa06_sdY  TTTTGGGAATTAG---CTTCAGTTGTACAATTTTCATTACTATACTTTTTTTT
Chinook_sdY        AATTGGAATGAAACTTTTCAGTTGTACAATTTTCATTACTTAACTTTTTTTT
RT_sdY           --TTGGAATGAAACTCTTCAGTTGTACAATTTTCATTATTTAACTTTTTTTT
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BT_sdY          GTGCTAATTTTATAATGTTTCATGTCGCAAATCTGTTATAAAAAGTCAGGA
AS_Tasmanian_Ssa02_sdY  GTGCTAATTTTATAATGTTTCATGTTGCAAATCTGTTATAAAAAGTCAGGA
AS_Tasmanian_Ssa03_sdY  GTGCTAATTTTATAATGTTTCATGTTGCAAATCTGTTATAAAAAGTCAGGA
AS_European_sdY      GTGCTAATTTTATAATGTTTCATGTTGCAAATCTGTTATAAAAAGTCAGGA
AS_Tasmanian_Ssa06_sdY  GTGCTAATTTTATAATGTTTCATGTTGCAAATCTGTTATAAAAAGTCAGGA
Chinook_sdY        GTGCTCATT-----GGATCATATCACAAATCTCTTATAAAAAGTCAGGA
RT_sdY           GTGCTCATT-----GGATCATATCACAAATCTCTTATAAAAAGTCAGGA
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BT_sdY          GCTGTTCTTCTGCGAGA---CTCATTGAAATTATTTTTTTTCTCTCTCTCC
AS_Tasmanian_Ssa02_sdY  GCTGTTCTTCTGCGGGACTGCTCATTGAAATTTTGTTTTTTCTCTCTCTCT
AS_Tasmanian_Ssa03_sdY  GCTGTTCTTCTGCGGGACTGCTCATTGAAATTTTGTTTTTTCTCTCTCTCT
AS_European_sdY      GCTGTTCTTCTGCGGAGACTGCTCATTGAAATTTTGTTTTTTCTCTCTCTCT
AS_Tasmanian_Ssa06_sdY  GCTGTTCTTCTGCGAGACTGCTCATTGAACTTTTGTTTTTTCTCTCTCTCT
Chinook_sdY        GCTGTTCTTCTGCATAACTGCTCATTGCAAGTA---TTTTTTATCTC---
RT_sdY           GCTGTTCTTCTGCATAACTGCTCATTGCAAGTATTTTTTTTTTATCTC---
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BT_sdY	CCC-----
AS_Tasmanian_Ssa02_sdY	CCCTCTCTCCCCCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCCCTAACTCTC
AS_Tasmanian_Ssa03_sdY	CCCTCTCTCCCC--CTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCCCTAACTCTC
AS_European_sdY	CCCTCTCTCCCCA-----
AS_Tasmanian_Ssa06_sdY	CCCTCTCTCCCC-----CCCTCTCTCTCTCTCTCTCTCTCCCTAACTCTC
Chinook_sdY	-----
RT_sdY	-----
BT_sdY	-----CCCTCTCTCTCTCTCTCTATTTCTCTGTCTCTCCCTAACTCTCTC
AS_Tasmanian_Ssa02_sdY	TCTCTCCCTCTCTCTCTCTCTCTTTTCTCTCTCTCTCTCTCTCTCCCTCTCTCTCTC
AS_Tasmanian_Ssa03_sdY	TCTCTCCCTCTCTCTCTCTCTCTTTTCTCTCTCTCTCTCTCTCTCCCTCTCTCTCTC
AS_European_sdY	-----CTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCCCTAACTCTCTC
AS_Tasmanian_Ssa06_sdY	TCTC-CCCTCTCTCTCTCTCTTTTCTCTCTCTCTCTCTCTCTCTCCCTCTCTCTC
Chinook_sdY	-----
RT_sdY	-----
BT_sdY	TCTCCCTCTCTCTCTCT-----CTCCC
AS_Tasmanian_Ssa02_sdY	TCTCTCTCTCTCTCTCTCTCTCTATCACTCTCCCTCTCTCTCTCTCTCTCTCCC
AS_Tasmanian_Ssa03_sdY	TCTCTCTCTCTCTCTCTCTCTCTATCACTCTCCCTCTCTCTCTCTCTCTCTCCC
AS_European_sdY	TCTCCCTCTCTCTCTCT-----
AS_Tasmanian_Ssa06_sdY	TCTCTCTCTCTCTCTCT-----CTCTCACTCTCCCTCTCTCTCTCTC
Chinook_sdY	-----
RT_sdY	-----
BT_sdY	TCTCTCTCTCTCTCTCTCCCTCCCTCTCTCTCTCTCTTTTCTCTCTCTCTCTCTC
AS_Tasmanian_Ssa02_sdY	TCCCT--CTC
AS_Tasmanian_Ssa03_sdY	TCCCTC
AS_European_sdY	-----CTCTCTCTCTCTCTCTCTCTCTCTC
AS_Tasmanian_Ssa06_sdY	TCCCTCCCTC
Chinook_sdY	-----CTCCCTCTA-----
RT_sdY	-----CTCCCTCTATCTCTGTCTC

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BT_sdY          TCCTCCCTCTCTTTCTATGTC CCTCTGTCACTCTCTCTCTCCCCAG | ----
AS_Tasmanian_Ssa02_sdY  TCCTCCCTCTCTTTCTATGTC CCTCTGTCACTCTCTCTCTCCCCAG | CCCA
AS_Tasmanian_Ssa03_sdY  TCCTCCCTCTCTTTCTATGTC CCTCTGTCACTCTCTCTCTCCCCAG | CCCA
AS_European_sdY        TCCTCCCTCTCTTTCTATGTC CCTCTGTCACTCTCTCTCTCCCCAG | CCCA
AS_Tasmanian_Ssa06_sdY  TCCTCCCTCTCTTTCTATGTC CCTCTGTCACTCTCTCTCTCCCCAG | CCCA
Chinook_sdY          -----TCTCTCCCCAG | CCCA
RT_sdY            TGTTCCCTCTGTT-----TCTCTCTCCCCAG | CCCA
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      exon2
--Exon 2F----->

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BT_sdY          GCACTCTTTTCTTGTCTCAGTGGAGTACTGCGAAGAGGAGGTGCTTAGTC
AS_Tasmanian_Ssa02_sdY  GCACTCTTTTCTTGTCTCAGTGGAGTACTGCGAAGAGGAGGTGCTTAGTC
AS_Tasmanian_Ssa03_sdY  GCACTCTTTTCTTGTCTCAGTGGAGTACTGCGAAGAGGAGGTGCTTAGTC
AS_European_sdY        GCACTCTTTTCTTGTCTCAGTGGAGTACTGCGAAGAGGAGGTGCTTAGTC
AS_Tasmanian_Ssa06_sdY  GCACTCTTTTCTTGTCTCAGTGGAGTACTGCGAAGAGGAGGTGCTTAGTC
Chinook_sdY          GCACTGTTTTTCTTGTCTCAGTGGAGTACTGCGAAGAGGAGGTGCTTAGTC
RT_sdY            GCACTGTTTTTCTTGTCTCAGTGGAGTACTGCGAAGAGGAGGTGCTTAGTC
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      exon2
<-----Exon 1R-

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BT_sdY          ATGAGGTTATGGGGAGTGATGTCAGAATTGCCTACAAGCCCTTCTCCCTG
AS_Tasmanian_Ssa02_sdY  ATGAGGTTATGGGGAGTGATGTCAGAATTGCCTACAAGCCCTTCTCCCTG
AS_Tasmanian_Ssa03_sdY  ATGAGGTTATGGGGAGTGATGTCAGAATTGCCTACAAGCCCTTCTCCCTG
AS_European_sdY        ATGAGGTTATGGGGAGTGATGTCAGAATTGCCTACAAGCCCTTCTCCCTG
AS_Tasmanian_Ssa06_sdY  ATGAGGTTATGGGGAGTGATGTCAGAATTGCCTACAAGCCCTTCTCCCTG
Chinook_sdY          ATGAGGTCATGGGGGGTGATGTCAGAATTGCCACAAGAC---CTCCCTA
RT_sdY            ATGAGGTCATGGGGGGTGATGTCAGAATTGCCACAAGAC---CTCCCTA
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exon2

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BT_sdY ATGATGGATGGGATCCCCGTCATCTCTCTCCCAAAGCCCCCGACACCAT
AS_Tasmanian_Ssa02_sdY ATGATGGATGGCATCCCCGTCATCTCTCTCCCAAAGCCCCCGACACCAT
AS_Tasmanian_Ssa03_sdY ATGATGGATGGCATCCCCGTCATCTCTCTCCCAAAGCCCCCGACACCAT
AS_European_sdY ATGATGGATGGGATCCCCGTCATCTCTCTCTCCCAAAGCCCCCGACACCAT
AS_Tasmanian_Ssa06_sdY ATGATGGATGGGATCCCCGTCATCTCTCTCCCAAAGCCCCCGACACCAT
Chinook_sdY ATGATGGATGGGATCCCCTTCATTTCTCTCTCCCAAAGCCCCCAACACCCT
RT_sdY ATGATGGATGGGATCCCCTTCATCTCTCTCTCCCAAAGCCCCCAACACCCT
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exon2

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BT_sdY TCCCATCTCCTCTGACCGTTCAACCCTCTCCAACCTGCTTTCCCTCATGG
AS_Tasmanian_Ssa02_sdY TCCCATCTCCTCTGACCGTTCAATCCTCTCCAACCTGCTTTCCCTCATGG
AS_Tasmanian_Ssa03_sdY TCCCATCTCCTCTGACCGTTCAATCCTCTCCAACCTGCTTTCCCTCATGG
AS_European_sdY TCCCATCTCCTCTGACCGTTCAATCCTCTCCAACCTGCTTTCCCTCATGG
AS_Tasmanian_Ssa06_sdY TCCCATCTCCTCTGACCGTTCAATCCTCTCCAACCTGCTTTCCCTCATGG
Chinook_sdY TCCTATCTCCTCTGATCGTTCAATCCTCTCCAACCTGTTGTCCCTCATGG
RT_sdY TCCTATCTCCTCTGATCGTTCAATCCTCTCCAACCTGTTGTCCCTCATGG
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exon2

```
BT_sdY AGGGTGGAGTGGTTTTAAGCTCTAGGGAGGAAGGCATCTATGCTGAACGG
AS_Tasmanian_Ssa02_sdY AGGGTGGAGTGGTTTTAAGCTCTAAGGAGGAAGGCATCTATGCTGAACGG
AS_Tasmanian_Ssa03_sdY AGGGTGGAGTGGTTTTAAGCTCTAAGGAGGAAGGCATCTATGCTGAACGG
AS_European_sdY AGGGTGGAGTGGTTTTAAGCTCTAAGGAGGAAGGCATCTATGCTGAACGG
AS_Tasmanian_Ssa06_sdY AGGGTGGAGTGGTTTTAAGCTCTAAGGAGGAAGGCATCTATGCTGAACGG
Chinook_sdY AGGGTGGAGTAGTTTTAAGCTCTAGGGAGGAAGGTATCTATGCTGAACGG
RT_sdY AGGGTGGAGTGGTTTTAAGCTCTAGGGAGGAAGGTATCTATGCTGAACGG
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                exon2
BT_sdY          CATAGCCAAGCCATAGTCTCCTGGATGGGCGGCACGGGGGATGAGATGCA
AS_Tasmanian_Ssa02_sdY  CATAGCCAAGCCATAGTCTCCTGGATGGGCGGCACGGGGGATGAGATGCA
AS_Tasmanian_Ssa03_sdY  CATAGCCAAGCCATAGTCTCCTGGATGGGCGGCACGGGGGATGAGATGCA
AS_European_sdY        CATAGCCAAGCCATAGTCTCCTGGATGGGCGGCACGGGGGATGAGATGCA
AS_Tasmanian_Ssa06_sdY  CATAGCCAAGCCATAGTCTCCTGGATGGGCGGCACGGGGGATGAGATGCA
Chinook_sdY          CATAGCCAAGCCACAGTCTCCTGGATGGGTGGCACC GGAGATGAGATGCA
RT_sdY            CATAGCCAAGCCACAGTCTCCTGGATGGGTGGCACC GGAGATGAGATGCA
                ***** ** *****

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                exon2
                <--Exon 2R-
BT_sdY          CGTGATGGAGCGTGATGTGGATCCTGTGATGCTCTTCAACAGGGAGACCT
AS_Tasmanian_Ssa02_sdY  CGTGATGGAGCGTGATGTGGATCCTGTGATGCTCTTCAACAGGGAGACCT
AS_Tasmanian_Ssa03_sdY  CGTGATGGAGCGTGATGTGGATCCTGTGATGCTCTTCAACAGGGAGACCT
AS_European_sdY        CGTGATGGAGCGTGATGTGGATCCTGTGATGCTCTTCAACAGGGAGACCT
AS_Tasmanian_Ssa06_sdY  CGTGATGGAGCGTGATGTGGATCCTGTGATGCTCTTCAACAGGGAGACCT
Chinook_sdY          CGTGATGGACCGTGATGTGGACCCTGTGATGCTCTTCAACAGAGAGACCT
RT_sdY            CGTGATGGAGCGTGATGTGGACCCTGTGATGCTCTTCAACAGAGAGCACT
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BT_sdY   TCAGACAGG | GTGAGTGA -----
AS_Tasmanian_Ssa02_sdY  TCAGACAGG | GTGAGTGA -----
AS_Tasmanian_Ssa03_sdY  TCAGACAGG | GTGAGTGA -----
AS_European_sdY        TCAGACAGG | GTGAGTGA -----
AS_Tasmanian_Ssa06_sdY  TCAGACAGG | GTGAGTGA -----
Chinook_sdY          TCAGACAGG | GTGAGTGAACCTGTTAGTGGTAAATTCTAATGATTCTTGAA
RT_sdY            TCAGACAGG | GTGAGTGAATCTGTTAGTGGTAAATTCTAATGATTCTTGAA
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BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GAGCATAACTTATAATAGGGAGGATGTTCCCTCGGGGGGATCAAATCAGC
RT_sdY GAGCATAACTTATAATAG-----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GGGTAGTCAGCGGATATTTTAGAGCGTCACTGATCGTTTTTCGATAAAAT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TCAAACCTTTCATTAAAACACACATGCAAGGTATTGAATTAAAGCTACACT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CGTTGTGAATCTAGTCAGATTTGTAAAATGCTTTTCGGCGAAAGCATGAG
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY AAGCTATTATCTGATAGCATGTAACACCCCAAAAGACCCGTAGAGGATGT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY AAACAAAATAATTAGCGTAGTCGGCGCTACACAAACCGCACAATAAAAT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY ATAAAACATTCATTACCTTTGACCATCTTCTTTCTTGGCACTCCTTGATG
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TCCCATAATCAATACTGGGTCTTTTTTTGGATTAAATCGGTCCATATATA
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GCCTAGATATCGATCTATGAAGACTGTGTGATAAACGGAAAAAATAGCG
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TTTCATAACGTAACGTCATTTTTTAAAAGTTAAAAGTCGACGATAAACT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TTCACAAAACACTTCGAAATACCTTTCTAATGCAACTTTAGGTATTACTA
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CACGTTAATAAGCTATAAAAATCATCAGGAGGCGATGTAAATTCGATAGT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TGGCGTGTGGAAAAAATGTCCGGAAAAACACAGAGACAATGCCTCAGGTC
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GGTGGTTCGGAGGGAATCGGTTCCCTTTGGTCGGATCTACCAAGAATCAAA
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TCAGAATCAAATGAGGAGACTCTATACATCCTGTGGAAGCTGTAGGTACT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GCAAGCTCGGCCTCATTTAATACGGTTACCTTTAACAATTCATGGAAGT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GGCGCATGGATATTTTTTTTCCATCTCCAGTKATCAGATTTTCCTGCGCTT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TTCGATGAAACAGACGTTCTGTTATAGTCACAGCCGTGATTTAAACAGTT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TTAGAAACGTCTGAGTGTTTTCTATCCACACATACTAATCATATGCATAT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY ACTATATTCCTGGAATGAGTAGCAGGGCGCTGAAATGTTGCGCGATTTTT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY AACAAAAAGCTGCGAAAATTTCGCAGCCTCCCCAAGAGGTTTTAATTAAAC
RT_sdY -----TAAAC

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY AACCCAAAATATAAGCTTATTTAAATCCTATGTTTGTGAACTTTGTAAT
RT_sdY AACCCAAAATATAAGCTTGTTTAAATCCTATGTTTGTGAACTTTGTAAT

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GTAAACAAACACTATATAGCCTTAAAAATGTTACTTATGTGATAATGCCT
RT_sdY GTAAACAAACACTATATAGCCTTAAAAATGTTACTTATGTGATAATGCCT

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GAAAAAATGGTGTGGAGGGTATATTGGCACAGTGTGTTAGGCCTATA
RT_sdY GAAAAACAGTGTGGAGGGTATATTGGCGCAGTGTGTTAGGCCAATA

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BT_sdY -----TA
AS_Tasmanian_Ssa02_sdY -----TA
AS_Tasmanian_Ssa03_sdY -----TA
AS_European_sdY -----TA
AS_Tasmanian_Ssa06_sdY -----TA
Chinook_sdY ATTTTGATAAATCTATTCATACTATTTTCATCCTTCTATTTTCATCCTTCTA
RT_sdY ATTTTGATAAATGTATTCATAC-----TA

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BT_sdY TG-----
AS_Tasmanian_Ssa02_sdY TT-----
AS_Tasmanian_Ssa03_sdY TT-----
AS_European_sdY TT-----
AS_Tasmanian_Ssa06_sdY TT-----
Chinook_sdY TTTCATCCTTCCACAAGATATAGTCCCGACACAACCATATGGTTGCTACC
RT_sdY TTTCATCCTTCCACAAGATATAGTCCCGACACAACCATATGGTTGCTACC

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BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CAAACTGGATGGTCATCCATTGGTTTTGGTTGCCAAAGACACAACCCAGT
RT_sdY CAAACTGGATGGTCATCCATTGG-TTTGGTTGCCAAAGACGCTACCCAGT

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BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TGTTTCAGATTTTTTGTCTGTATCTATGGACACGACCTGGTTGTTTCATTT
RT_sdY TGTTTCAGATTTTTTGTCTGTAACTATGGACACGACCCGGTTGTTTCATTT

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BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TAAATGTTCCATTGCCATTCTGGCTGGCAACATTCTTATCCTTTGCTTGC
RT_sdY TAAATGTTCCATTGCCATTCTGGCTGGCAACATTCTTATCCCTTG-TTGC

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TAGCTAGCCAAGTGCAGTAACTTACAGTTACGTCAAACAGTGCAGTCAG
RT_sdY TAGCTAGTCAACTATGGCTAACTTACAGTTACGTCAAACAGTGCAGTGAG

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CAACAAAGTATATTGCATTTGCATTTGTTTAAGATGTTTTCTAATGACAT
RT_sdY CACAAGTATATGCATTTGCATTGTTAG-----ACTTTTCTAAT

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TTATTTGGATATAACAATGACTTACACAGTTTGGCCTGCCATAGAAAATG
RT_sdY TACATTTATTGGATGTAACATGACTCATGGTTGGCCTGCCATAGAAAATG

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TTCTCTCTCATCAGGACACTGTTTACAGAGGAG-----CAACAACACAGC
RT_sdY TTCTCTCTCGTCAGGACACTGTTTACAGAGGAGCTAGTCAACAATACAGC

BT_sdY -----AAGGGAATCTG-----
AS_Tasmanian_Ssa02_sdY -----AAGGGAATCTG-----
AS_Tasmanian_Ssa03_sdY -----AAGGGAATCTG-----
AS_European_sdY -----AAGGGAATCTG-----
AS_Tasmanian_Ssa06_sdY -----AAGGGAATCTG-----
Chinook_sdY TAACACAATCACTTCAAACGGAAGCTGAAAAGACTGAAAAGCTGGCTGCAC
RT_sdY TAACACAATCACTTCAAACGGAAGCTGAAAAGACTCAAAGCTGGCTGCAC
** ***** **

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TTTGTTTCCTTTTACCTGTTTTTTATTGATATTTTTTGTATATACAGTAT
RT_sdY TTTGTTTCCTTTTACCTGTTTTTTATTGATATTTTTTGTATATAGAGTAT

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CCATAAAAATTATGCTGATTCATGATTTTGGCTGGCTGAGAAAAGCTGCC
RT_sdY CCATAAAAATTATGCTGATTCGTGATTTTGGCTGGCTGAGAAAAGCTGCC

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY AGCCTATCTGTCTCTTCCCGACTCCCGACACATTCGTTACTATGGGACAG
RT_sdY TGCCTATCTGTCTCTTCCCGACTCCCGACACATTCGTTACTATGGGACAG

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CTGGAGAAATAATTTGAATTTTGAACAATGTTGCAATATATCAGAGAGA
RT_sdY CTAGAGAAATAATTTGAATTTTGAACAATGTTCCAATATATCAGAGAGA

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CAGATAGTAAGGGTTATACAAATCTCCGCTGTTTAAACTAAATGTTAGT
RT_sdY CAGATAGTAAGGTTTATACAAATCTCCGCTGTTTAAACTAAA-----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY CTAAATGGAATGTGAGATAATGTCTAGATGCTTTTAAATATTGGAGGTCAA
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY GTTTATACATTGCCTGGCTGGGCTGATGAGACAGTGGATTGTGCTGTCAG
RT_sdY -TTTATACATTGCCTGGCTGGGCTGATGAGACAGTGGATTGTGCTGTCAG

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY ATGGAACAGAGTAAATAGGCATTTTAAACAACATAGATTTAGCTGGTAGTA
RT_sdY ATGGAGCAGAGTAAATAGGCATTTTACATAGATAGATTTAGCTGGTAGTA

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY ACTTGTTGGAATAGATACTGGCTTGAATGCATTTTTTAACCAATCAGCATTC
RT_sdY ACTTGTTGGAATAGATACTGGCTTGAATGCATTTTTTAACCCATCAGCATTC

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY ATGATTACACACACACGTTGTATAAAACGTATATTGCCAACGATAATGTT
RT_sdY ATGATTACACCCACACGTTGTATAAAACGTATATTGCCAACTATAATGTT

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BT_sdY          -----TTACGGGTAAT-----TCACAACAGATTCCACGAAACACTAATTG
AS_Tasmanian_Ssa02_sdY  -----TTACGGGTAAT-----TCACAACAGATTTTCACGAAACACTAATTG
AS_Tasmanian_Ssa03_sdY  -----TTACGGGTAAT-----TCACAACAGATTTTCACGAAACACTAATTG
AS_European_sdY        -----TTACGGGTAAT-----TCACAACAGATTTTCACGAAACACTAATTG
AS_Tasmanian_Ssa06_sdY  -----TTACGGGTAAT-----TCACAACAGATTTTCACGAAACACTAATTG
Chinook_sdY          GATATTATGGTTAGTCAGTCCTCACAAACAGGTTTCACAAAACACTAAGTG
RT_sdY            GATATTATGGTTAGTCAGTCCTCACAAACAGGTTTCACAAAACACTAAGTG
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BT_sdY          TGTGCCCTCAGGCCCTACTCCGCTACCACGTAACTACAACACAAAATCA
AS_Tasmanian_Ssa02_sdY  TGTGCCCTCAGACCCTTACTCCGCTACCACGTAACTACAACACAAAATCA
AS_Tasmanian_Ssa03_sdY  TGTGCCCTCAGACCCTTACTCCGCTACCACGTAACTACAACACAAAATCA
AS_European_sdY        TGTGCCCTCAGACCCTTACTCCGCTACCACGTAACTACAACACAAAATCA
AS_Tasmanian_Ssa06_sdY  TGTGCCCTCAGACCCTTACTCCGCTACCACGTAACTACAACACAAAATCA
Chinook_sdY          TGTGCCCTCAGACCCTACTCCACTACCCTATATCTACAACACAAAATSC
RT_sdY            TGTGCCCTCAGACCCTACTCCACTACCCTATATCTACAACACAAAATCC
                  *****  ***  *****  *****          **  *****

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BT_sdY          ATGTGTAAATTTTTGTATTGTGCGTATGTTATCTTGTGTGTGTATGCGTG
AS_Tasmanian_Ssa02_sdY  ATGTGTACATTTTTGTATTGTGCGTATGTTATCTTGTGTGTGTATGCATG
AS_Tasmanian_Ssa03_sdY  ATGTGTACATTTTTGTATTGTGCGTATGTTATCTTGTGTGTGTATGCATG
AS_European_sdY        ATGTGTACATTTTTGTATTGTGCGTATGTTATCTTGTGTGTGTATGCATG
AS_Tasmanian_Ssa06_sdY  ATGTGTACATTTTTGTATTGTGCGTATGTTATCTTGTGTGTGTATGCATG
Chinook_sdY          ATGTGTACGTGTGTGTATTGTGAGTATGTTATCGTGTGCGTTTATGCATG
RT_sdY            ATGTGTACGTGTGTGTATTGTGAGTATGTTATTGTGTGCGTTTATGCATG
                  *****  *  *  *****  *****          *****  **  *****  **

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BT_sdY          TGTCGGTGCCTATGATTGTGTTGCTTCACAGACCCCGCTGTTCCATAATG
AS_Tasmanian_Ssa02_sdY  TGTCGGTGCCTATGATTGTGTTGCTTCACAGACCCCGCTGTTCCATAATG
AS_Tasmanian_Ssa03_sdY  TGTCGGTGCCTATGATTGTGTTGCTTCACAGACCCCGCTGTTCCATAATG
AS_European_sdY      TGTCGGTGCCTATGATTGTGTTGCTTCACAGACCCCGCTGTTCCATAATG
AS_Tasmanian_Ssa06_sdY  TGTCGGTGCCTATGATTGTGTTGCTTCACAGACCCCGCTGTTCCATAATG
Chinook_sdY        TGTCAGTGCCTATSTTTGTGTTGCTTCACAGTCCCGCTGTTCCATAAGG
RT_sdY          TGTCAGTACCTATGTTTGTGTTGCTTCACAGTCCCGCTGTTCCATAAGG
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BT_sdY          TGTATTTTTT-----ATCTGATTTTATTGA-TGCATCA
AS_Tasmanian_Ssa02_sdY  TGTATTTTTT-----ATCTGATTTTATTGC-TGCATCA
AS_Tasmanian_Ssa03_sdY  TGTATTTTTT-----ATCTGATTTTATTGC-TGCATCA
AS_European_sdY      TGTATTTTTT-----ATCTGATTTTATTGC-TGCATCA
AS_Tasmanian_Ssa06_sdY  TGTATTTTTT-----ATCTGATTTTATTGC-TGCATCA
Chinook_sdY        TGTATTTTTTTAAATCTTTTTTTTTT---ATCTGATTCT--TGCATTTATCA
RT_sdY          TGTATTTTTTTTATCTGTTTTTTTTTTAAATCTGATTCTACTGCTTGCATCA
*****          *****  *  **  *  ****

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BT_sdY          GTTACC-----TGATGTGGAATAGTGTTCATGTAGTCATGGCTCTAT
AS_Tasmanian_Ssa02_sdY  GTTACC-----TGATGTGGAATAGAGTTCCATGTAGTCATGGCTCTAT
AS_Tasmanian_Ssa03_sdY  GTTACC-----TGATGTGGAATAGAGTCCCATGTAGTCATGGCTCTGT
AS_European_sdY      GTTACC-----TGATGTGGAATAGAGTTCCATGTAGTCATGGCTCTAT
AS_Tasmanian_Ssa06_sdY  GTTACC-----TGATGTGGAATAGAGTTCCATGTAGTCATGGCTCTAT
Chinook_sdY        TTTACCACACATTTTATGTGGAATAGAGTTCCATGTAGTCATGGCTCTAT
RT_sdY          TTTACC-----TGATGTGGAATAAAGTTCCATGTAGCCATGGCTCTAT
*****          *  *****  **  *****  *****  *

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BT_sdY          GTAGTACTGTGCTCCTCCCATAG-----TCTGTTCTGGACTTGGGGACTG
AS_Tasmanian_Ssa02_sdY  ATAGTACTGTGCTCCTCCCATAA-----TCTGTTCTGGACTTGGAGGACTG
AS_Tasmanian_Ssa03_sdY  ATAGTACTGTGCTCCTCCCATAA-----TCTGTTCTGGACTTGGAGGACTG
AS_European_sdY        ATAGTACTGTGCTCCTCCCATAA-----TCTGTTCTGGACTTGGAGGACTG
AS_Tasmanian_Ssa06_sdY  ATAGTACTGTGCTCCTCCCATAA-----TCTGTTCTGGACTTGGAGGACTG
Chinook_sdY          GTAGTAATGATTGCCTCTCATGGTCTGTTCTGTTCTGGACTTGGGGACTG
RT_sdY            GTAGTAATGATCGCCTCCCATGG-----TCTGTTCTGGACTTGGGGACTG
                ***** **      ***** ***      *****

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BT_sdY          TGAAGAGACCTCTGGTGACATGTCTTGTGGGGTATGGATGGGTGTCTGAG
AS_Tasmanian_Ssa02_sdY  TGAAGAGACCTCTGGTGGCATGTCTTGTGGGGTA-----
AS_Tasmanian_Ssa03_sdY  TGAAGAGACCTCTGGTGGCATGTCTTGTGGGGTA-----
AS_European_sdY        TGAAGAGACCTCTGGTGGCATGTCTTGTGGGGTA-----
AS_Tasmanian_Ssa06_sdY  TGAAGAGACCTCTGGTGGCATGTCTTGTGGGGTA-----
Chinook_sdY          TGAAGAGACCTCTGGTGGCATGTCTTGTGGGGTA-----
RT_sdY            TGAAGAGACCTCTGGTGGCATGTCTTGTGGGGTA-----
                *****

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BT_sdY          CTGTGAGCCAGTAGTTTAAACAGACCTCTGGTGGCATGTCTTGTGGGGTA
AS_Tasmanian_Ssa02_sdY  -----
AS_Tasmanian_Ssa03_sdY  -----
AS_European_sdY        -----
AS_Tasmanian_Ssa06_sdY  -----
Chinook_sdY          -----
RT_sdY            -----

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```

BT_sdY          TGGATGGGTGTCTGAGCTGTGAGCCAGTAGTTTAAACAGACCTCTGGTGA
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY    -----
RT_sdY         -----

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BT_sdY          CATGTCTTGTGGGGTATGGATGGGTGTCTGAGCTGTGTGCCAGTAGTTCA
AS_Tasmanian_Ssa02_sdY -----TGGGGTATGCATGGGTGTCCGAGCTGTGTGCCAGTAGTTCA
AS_Tasmanian_Ssa03_sdY -----TGGGGTATGCACGGGTGTCCGAGCTGTGTGCCAGTAGTTCA
AS_European_sdY -----TGGGGTATGCATGGGTGTCCGAGCTGTGTGCCAGTAGTTCA
AS_Tasmanian_Ssa06_sdY -----TGGGGTATGCGTGGGTGTCCGAGCTGTGTGCCAGTAGTTCA
Chinook_sdY    -----TGAGTTTTGCATGGGTGTCCACGCTGTGTGCCAGTTGTTCA
RT_sdY         -----TGAGTTTTGCAT--GTGTCCACGCTGTGTGCCAGTTGTTCA
                ** * * * *      * * * * *      * * * * * * * * * * * * * * * *

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BT_sdY          AACAGACAGTTCAGTACATTCAACATGTCAGTACATTTTCAAAATACAAG
AS_Tasmanian_Ssa02_sdY AACAGACAATTCAGTACATTCAACATGTCAGTACATTTTCAAAATACAAG
AS_Tasmanian_Ssa03_sdY AACAGACAATTCAGTACATTCAACATGTCAGTACATTTTCAAAATACAAG
AS_European_sdY    AACAGACAATTCAGTACATTCAACATGTCAGTACATTTTCAAAATACAAG
AS_Tasmanian_Ssa06_sdY AACAGACAATTCAGTACATTCAACATGTCAGTACATTTTCAAAATACAAG
Chinook_sdY    AACAGACAGCTTGGTACATTCAACATTTCAATACATTTTATAAAATAAAAG
RT_sdY         AACAGACAGCTTGGTACATTCAACATTTCAATACATTTTATAAAATACAAG
                * * * * * * * * * * * * * * * * * * * * * * * * * * * *

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BT_sdY          TAGTGATGAAGTCAATCTCTCCTCCACTTTGAGCCATGAGAGATTTACAT
AS_Tasmanian_Ssa02_sdY TAGTGATGAAGTCAATCTCTCCTCCACTTTGAGCCATGAGAGATTTACAT
AS_Tasmanian_Ssa03_sdY TAGTGATGAAGTCAATCTCTCCTCCACTTTGAGCCATGAGAGATTTACAT
AS_European_sdY TAGTGATGAAGTCAATCTCTCCTCCACTTTGAGCCATGAGAGATTTACAT
AS_Tasmanian_Ssa06_sdY TAGTGATGAAGTCAATCTCTCCTCCACTTTGAGCCATGAGAGATTTACAT
Chinook_sdY TAGCGATGAAGTCAATCTCTCCTCTGCTTTGAGCCTGGAGAGATTGACAT
RT_sdY TAGCAATGAAGTCAATCTCTCCTCTGCTTTGAGCCTGGAGAGATTGACAT
***      *****      *****      *****      *****

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BT_sdY          GCATATTATTAATGTTAGCTCTCCATGTACATTTAAGGGCCAGCCGTGCT
AS_Tasmanian_Ssa02_sdY GCATATTATTAATGTTAGCTCTC--TCTACATTTAAGG----GCCGTGCT
AS_Tasmanian_Ssa03_sdY GCATATTATTAATGTTAGCTCTC--TCTACATTTAAGG----GCCGTGCT
AS_European_sdY GCATATTATTAATGTTAGCTCTC--TCTACATTTAAGG----GCCGTGCT
AS_Tasmanian_Ssa06_sdY GCATATTATTAATGTTAGCTCTC--TCTACATTTAAGG----GCCGTGCT
Chinook_sdY GCACAT-----ATATCAGCT-----GATGTAAGA-----AGGGCT
RT_sdY GCATAT-----ATATCAGCT-----GATGTAAGA-----AGGGCT
***  **      ** * ****      ** ****      * ***

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BT_sdY          GCCCTGTTCTAGGCCAGTTGTTATTTTCCCAAGTCCCTCTTTGTGGAGAG
AS_Tasmanian_Ssa02_sdY GCCCTGTTCTAGGCCAGTTGTTATTTTCCCAAGTCCCTCTTTGTGGAGAG
AS_Tasmanian_Ssa03_sdY GCCCTGTTCTAGGCCAGTTGTTATTTTCCCAAGTCCCTCTTTGTGGAGAG
AS_European_sdY GCCCTGTTCTAGGCCAGTTGTTATTTTCCCAAGTCCCTCTTTGTGGAGAG
AS_Tasmanian_Ssa06_sdY GCCCTGTTCTAGGCCAGTTGTTATTTTCCCAAGTCCCTCTTTGTGGAGAG
Chinook_sdY ATATAAATATATTTGATTTGAAATTT-----G
RT_sdY ATATAAATACATTTGATTTGAAATTT-----G
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BT_sdY      ATTGACATATTATTAATATTAGGTGACCCCTTTGTTATTGGTTCAATTAC
AS_Tasmanian_Ssa02_sdY  ATTGACATATTATTAT-----ATTTGTTTTTTGGTTCAATTAC
AS_Tasmanian_Ssa03_sdY  ATTGACATATTATTAT-----ATTTGTTTTTTGGTTCAATTAC
AS_European_sdY      ATTGACATATTATTAT-----ATTTGTTTTTTGGTTCAATTAC
AS_Tasmanian_Ssa06_sdY  ATTGACATATTATTAT-----ATTTGTTTTTTGGTTCAATTAC
Chinook_sdY      ATTAGCATATTATTATTATTTCGATGAACACTTTTGTATTGGTTCATTTAC
RT_sdY      ATTTGCATATTATTATTATTTCGATGAACACTTTTGTGTTGGTTCATTTAC
***      *****      *****      *****      *****

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BT_sdY      GGATAATAGCTTAAAGTCCATTTTTCACTAAGGGCTCGATTCAATTTGT-
AS_Tasmanian_Ssa02_sdY  GGATAATAGCTTAAAGTCCATTTTTCACTAAGGGCTCGATTCAATTTGT-
AS_Tasmanian_Ssa03_sdY  GGATAATAGCTTAAAGTCCATTTTTCACTAAGGGCTCGATTCAATTTGT-
AS_European_sdY      GGATAATAGCTTAAAGTCCATTTTTCACTAAGGGCTCGATTCAATTTGT-
AS_Tasmanian_Ssa06_sdY  GGATAATAGCTTAAAGTCCATTTTTCACTAAGGGCTCGATTCAATTTGT-
Chinook_sdY      AGATAATTGCTTAAATTCAATGTTTCACTAAGGGC-CGATTCAATCTGTA
RT_sdY      AGATAATTGCTTGAATTCAATGTTTCACTAAGGGCTCGATTCAATCTGTA
*****      ****      **      *      *      *****      *****      ****

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BT_sdY      -----AGTTCGGGGCTAATGCTGAATTACATTTAAAGGTAA-ATTCCG
AS_Tasmanian_Ssa02_sdY  -----AGTTCGGGGCTAATGCTGAATTACATTTAAAGGTAA-ATTCTG
AS_Tasmanian_Ssa03_sdY  -----AGTTCGGGGCTAATGCTGAATTACATTTAAAGGTAA-ATTCTG
AS_European_sdY      -----AGTTCGGGGCTAATGCTGAATTACATTTAAAGGTAA-ATTCTG
AS_Tasmanian_Ssa06_sdY  -----AGTTCGGGGCTAATGCTGAATTACATTTAAAGGTAA-ATTCTG
Chinook_sdY      TTGCGGAAGTTGAAGGCTAATGCTTGATTACATTTGAAGGTAA-TTTCCG
RT_sdY      TTGCGGAAGTTCAAGGCTAATGCTTGATTACATTTGAAGGTAAATTTTCCG
****      *****      *****      *****      *****      **** *

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BT_sdY      ATTTAGCTGACATACTGTTTGCAGCATATACTGTAAATGCA-----ACA
AS_Tasmanian_Ssa02_sdY  ATTTAGCTGACATACTGTTTGCAGCGTATACTGTAAATGCA-----ACA
AS_Tasmanian_Ssa03_sdY  ATTTAGCTGACATACTGTTTGCAGCGTATACTGTAAATGCA-----ACA
AS_European_sdY        ATTTAGCTGACATACTGTTTGCAGCGTATACTGTAAATGCA-----ACA
AS_Tasmanian_Ssa06_sdY  ATTTAGCTGACATACTGTTTGCAGCGTATACTGTAAATGCA-----ACA
Chinook_sdY           AATTGAGCCGACATACTGTTTGCAGCATATAATGTAAATGCAGTCTCCACA
RT_sdY             AATTGAGCCGACATACTGTTTGCAGCATATACTGCAAATGCAGTCTCCACA
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BT_sdY      AAATGCAGGATCATTGCCTTAAATGTATATTGCGCATTAGAACTGCTTTG
AS_Tasmanian_Ssa02_sdY  AAATGCAGGATCATTGCC-----TTAGCACTGTTTTG
AS_Tasmanian_Ssa03_sdY  AAATGCAGGATCATTGCC-----TTAGCACTGTTTTG
AS_European_sdY        AAATGCAGGATCATTGCC-----TTAGCACTGTTTTG
AS_Tasmanian_Ssa06_sdY  AAATGCAGGATCATTGCC-----TTAGCACTGTTTTG
Chinook_sdY           AAATGCAGGAGCATTTCCTTAAATGTATTTTTTGTATTAGCACTGCATTG
RT_sdY             AAATGCAGGAGCATTTCCTTAAATGTATTTTTTGTATTAGCACTGCATTG
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BT_sdY      ATGTTAATGTGAGCATCCCTCTCTTGTCCCTACTGAATCTGGCTGATAATA
AS_Tasmanian_Ssa02_sdY  ATGTTAATGTGAGCATCCCTCTCTTGTCCCTACTGAATCAGGCTGATAATA
AS_Tasmanian_Ssa03_sdY  ATGTTAATGTGAGCATCCCTCTCTTGTCCCTACTGAATCTGGCTGATAATA
AS_European_sdY        ATGTTAATGTGAGCATCCCTCTCTTGTCCCTACTGAATCTGGCTGATAATA
AS_Tasmanian_Ssa06_sdY  ATGTTAATGTGAGCATCCCTCTCTTGTCCCTACTGAATCTGGCTGATAATA
Chinook_sdY           ATGTTATTGTGAGCATCACTCTCTTGTCCCTACTGAATTTGTCTGATTATA
RT_sdY             ATGTTAATGTGAGCATCACTCTCTCGTACTACTGAATTTGTCTGATTATA
***** *

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BT_sdY	TTACTGATTGTATCACTGATGAAATTACAGTAGTGTGTTTATCATGTGAT
AS_Tasmanian_Ssa02_sdY	TTACTGATTGTATCACTGATGAAATTACAGTAGTGTGTTTATCATGTGAT
AS_Tasmanian_Ssa03_sdY	TTACTGATTGTATCACTGATGAAATTACAGTAGTGTGTTTATCATGTGAT
AS_European_sdY	TTACTGATTGTATCACTGATGAAATTACAGTAGTGTGTTTATCATGTGAT
AS_Tasmanian_Ssa06_sdY	TTACTGATTGTATCACTGATGAAATTACAGTAGTGTGTTTATCATGTGAT
Chinook_sdY	TTACTGATTGTATCACTGATGATATTGCAGCAGTGTGTATGTCATGTGAT
RT_sdY	TTACTGATTGTATCACTGATGATATTGCAGCGGTGTGTTTGTTCATGTGAT

		exon3	
			-----Exon 3F-----
BT_sdY	GGATTACTGACTTTTGTGTGTCCTTAG		AGTTGGAACGCTTCAGCCGAGCAG
AS_Tasmanian_Ssa02_sdY	GGATTACTGACTTTTGTGTGTCCTTAG		AGTTGGAACGCTTCAGCAGAGCAG
AS_Tasmanian_Ssa03_sdY	GGATTACTGACTTTTGTGTGTCCTTAG		AGTTGGAACGCTTCAGCAGAGCAG
AS_European_sdY	GGATTACTGACTTTTGTGTGTCCTTAG		AGTTGGAACGCTTCAGCAGAGCAG
AS_Tasmanian_Ssa06_sdY	GGATTACTGACTTTTGTGTGTCCTTAG		AGTTGGAACGCTTCAGCAGAGCAG
Chinook_sdY	GTATTACTGACTCTCTGTGTGCCATAG		AGTTGGAACGCTTCGCCAGAGCAG
RT_sdY	GTATTACTGACTCTGTGTGTCCTTAG		AGTTGGACCGCTTCGCCAGAGCAG
	* *****		* *****

	exon3	
	--->	<-----
BT_sdY	ATGGCTTCCAACCGCAAATTGGGTTTCAGCCTATGGTTCGGACAAGACTCA	
AS_Tasmanian_Ssa02_sdY	ATGGCTTCCAACCGCAAATTGGGTTTCAGCCTATGGTTCGGACAAGACTCA	
AS_Tasmanian_Ssa03_sdY	ATGGCTTCCAACCGCAAATTGGGTTTCAGCCTATGGTTCGGACAAGACTCA	
AS_European_sdY	ATGGCTTCCAACCGCAAATTGGGTTTCAGCCTATGGTTCGGACAAGACTCA	
AS_Tasmanian_Ssa06_sdY	ATGGCTTCCAACCGCAAATTGGGTTTCAGCCTATGGTTCGGACAAGACTCA	
Chinook_sdY	ATGGCTCCCAACCTCAATGTGGGTTTCAGCCTATGGTTTGGACAAGACTCA	
RT_sdY	ATGGCTCCCAACCTCAATGTGGGTTTCAGCCTATGGTTTGGACAAGACTCA	
	*****	*****

exon3

---Exon 3R-----

BT_sdY	TC	ACTCAGTGCACCAATCTCTATATCG		GTACAGATTATTATTATTATATA
AS_Tasmanian_Ssa02_sdY	TC	ACTCAGTGCACCAATCTCTATATCG		GTACAGATTATTATTATTATATA
AS_Tasmanian_Ssa03_sdY	TC	ACTCAGTGCACCAATCTCTATATCG		GTACAGATTATTATTATTATATA
AS_European_sdY	TC	ACTCAGTGCACCAATCTCTATATCG		GTACAGATTATTATTATTATATA
AS_Tasmanian_Ssa06_sdY	TC	ACTCAGTGCACCAATCTCTATATCG		GTACAGATTATTATTATTATATA
Chinook_sdY	TC	ACTCAGTGCACCAAACCTTTATATCG		GTACAGATT----CTCTTAC---
RT_sdY	TC	ACTCAGTGCACCAATCTTTATATCG		GTACAGATT----CTCTTAC---
		***** ** *****		***** * **

BT_sdY	TAGATTATCTGGTGCCTTGAATACATTAACACAGCGCCGTCCTCAGAAAT
AS_Tasmanian_Ssa02_sdY	TAGATTATCTGGTGCCTTGAATACATTAACACAGTGCCGGCCTCAGAAAT
AS_Tasmanian_Ssa03_sdY	TAGATTATCTGGTGCCTTGAATACATTAACACAGTGCCGGCCTCAGAAAT
AS_European_sdY	TAGATTATCTGGTGCCTTGAATACATTAACACAGTGCCGGCCTCAGAAAT
AS_Tasmanian_Ssa06_sdY	TAGATTATCTGGTGCCTTGAATACATTAACACAGTGCCGGCCTCAGAAAT
Chinook_sdY	-----TCTGGGGCATTGTACACATTAACACAGGGCCGACGCTAGAAGG
RT_sdY	-----TCTGGGGCATTGTACACATTAACACAGGGCCGACGCTAGAAGG
	***** ** *** * ***** ***** * ****

<---AS&BT 10bo gap R--

BT_sdY	AACCATTGGGAAGGGCAATTGATTTCCATAGGCGGACATGTTTTTTTTTCA
AS_Tasmanian_Ssa02_sdY	AACCA--AGGAAGGGCAATTGATTTCCATAGGCGGACATGTTTTTTTTTCA
AS_Tasmanian_Ssa03_sdY	AACCATTGGGAAGGGCAATTGATTTCCATAGGCGGACATGTTTTTTTTTCA
AS_European_sdY	AACCATTGGGAAGGGCAATTGATTTCCATAGGCGGACATGTTTTTTTTTCA
AS_Tasmanian_Ssa06_sdY	AACCA--AGGAAGGGCAATTGATTTCCATAGGCGGACATGTTTTTTTTTCA
Chinook_sdY	AATCATTGAGAAGGGCAATTGATTTCCATAGG-----ATG-TTTTTTTTCA
RT_sdY	AATCATTGAGAAG-----GATTTCCATAGG-----ATG-TTTTTTTTCA
	** ** **** ***** ** *****

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BT_sdY      TGGCTTTTATAGTAAAGACATGTCATTTATCTTAACAAATGTATTACCTT
AS_Tasmanian_Ssa02_sdY  TGGCTTTTATAGTAAAGACATGTCATTTATCTTAACAAATGTATTACCTT
AS_Tasmanian_Ssa03_sdY  TGGCTTTTATAGTAAAGACATGTCATTTATCTTAACAAATGTATTACCTT
AS_European_sdY      TGGCTTTTATAGTAAAGACATGTCATTTATCTTAACAAATGTATTACCTT
AS_Tasmanian_Ssa06_sdY  TGGGTTTTATAGTAAAGACATGTCATTTATCTTAACAAATGTATTACCTT
Chinook_sdY      TGGTTTTTATAGTAAAG--ATGTAATTTTATCTTTAAAAATATATTTCCCTT
RT_sdY      TGGTTTTTATAGTAAAG--ATGTAATTTTTCTTTAAAAATATATTCCTT
***  *****  *****  *****  *  *****  *****  *****

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-Exon 3-intron-end F2->

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BT_sdY      TTAATGTGGTATGAACACAACCAGTCATGATGTTTTTCATCTGATTGTCAA
AS_Tasmanian_Ssa02_sdY  TTAATGTGGTATGAACACAACCAGTCATGATGTTTTTCATCTGATTGTCAA
AS_Tasmanian_Ssa03_sdY  TTAATGTGGTATGAACACAACCAGTCATGATGTTTTTCATCTGATTGTCAA
AS_European_sdY      TTAATGTGGTATGAACACAACCAGTCATGATGTTTTTCATCTGATTGTCAA
AS_Tasmanian_Ssa06_sdY  TTAATGTGGTATGAACACAACCAGTCATGATGTTTTTCATCTGATTGTCAA
Chinook_sdY      TTAATGTGGCATGTACACAACCAGTCATGATGTTTTTCATCTGATTGTCAA
RT_sdY      TTAATGTGGCACGTACACAACCAGTCATGATGTTTTTCATCTGATTGTCAA
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BT_sdY      AC-----
AS_Tasmanian_Ssa02_sdY  ACGAATCTTTGTAAGTCGCTCTGGATAAGAGCGTCTGCTAAATGACTTAA
AS_Tasmanian_Ssa03_sdY  ACGAATCTTTGTAAGTCGCTCTGGATAAGAGCGTCTGCTAAATGACTTAA
AS_European_sdY      ACGAATCTTTGTAAGTCGCTCTGGATAAGAGCGTCTGCTAAATGACTTAA
AS_Tasmanian_Ssa06_sdY  ACGAATCTTTGTAAGTCGCTCTGGATAAGAGCGTCTGCTAAATGACTTAA
Chinook_sdY      AA-----
RT_sdY      AA-----
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BT_sdY -----GAATCACTTCAAAAAGTAGGTTACCTTTGCACGTT
AS_Tasmanian_Ssa02_sdY ATGTTAAATGTAAATGAATCACTTCAAAAAGTAGGTTACCTTCGCACGTT
AS_Tasmanian_Ssa03_sdY ATGTTAAATGTAAATGAATCACTTCAAAAAGTAGGTTACCTTCGCACGTT
AS_European_sdY ATGTTAAATGTAAATGAATCACTTCAAAAAGTAGGTTACCTTCGCACGTT
AS_Tasmanian_Ssa06_sdY ATGTTAAATGTAAATGAATCACTTCAAAAAGTAGGTTACCTTCGCACGTT
Chinook_sdY -----AAATAATTTCAAAAAGTATGTTACCTTCGCATGTT
RT_sdY -----AAATAATTTCAAAAAGTAGGTTACCTTCGCATGTT
          *** * ***** **

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BT_sdY CGTCCAAAATAATTCTAGCATCCGAAGACTGCACTGTGTACCCGCCAACT
AS_Tasmanian_Ssa02_sdY CGTCCAAAATAATTCTAGCATCCGAAGACTGCACTGTGTACCCGCCAACT
AS_Tasmanian_Ssa03_sdY CGTCCAAAATAATTCTAGCATCCGAAGACTGCACTGTGTACCCGCCAACT
AS_European_sdY CGTCCAAAATAATTCTAGCATCCGAAGACTGCACTGTGTACCCGCCAACT
AS_Tasmanian_Ssa06_sdY CGTCCAAAATAATTCTAGCATCCGAAGACTGCACTGTGTACCCGCCAACT
Chinook_sdY CATCCAAAATAATTCTAGCATTTGAACTGGGCACTGTGGACCTGCCAATT
RT_sdY CATCCAAAATAATTCTAGCATTTGAACTGGGCACTGTGGACCTGCCAATT
          * ***** ** ***** **

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BT_sdY TTTGTTCAATTTGCAAGTGGT-----TGGAGAAAACATCAG
AS_Tasmanian_Ssa02_sdY TTTGTTCAATTTGCAAGTGGT-----TGGAGAAAACATCTG
AS_Tasmanian_Ssa03_sdY TTTGTTCAATTTGCAAGTGGT-----TGGAGAAAACATCAG
AS_European_sdY TTTGTTCAATTTGCAAGTGGT-----TGGAGAAAACATCAG
AS_Tasmanian_Ssa06_sdY TTTGTTCAATTTGCAAGTGGT-----TGGAGAAAACATCTG
Chinook_sdY TTCTTTCAATTTGCACGTGGTTGAACTATCTTACTGGAGAAAACATCAG
RT_sdY TTCTTTCAATTTGCAAGTGGCTGAACTATCTTACTGGAGAAAACATCAG
          ** ***** ** ***** *

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BT_sdY          AGTGAGCAAAACAGCGTCTTG-----
AS_Tasmanian_Ssa02_sdY  AGCGAGCAAAAGAGCGTCTTG-----
AS_Tasmanian_Ssa03_sdY  AGCGAGCAAAAGAGCGTCTTG-----
AS_European_sdY        AGCGAGCAAAAGAGCGTCTTG-----
AS_Tasmanian_Ssa06_sdY  AGCGAGCAAAAGAGCGTCTTG-----
Chinook_sdY          ATAGAGCAAAACAGTGCCTTACTATATGTAGCCCATGTTTCTGATGCTAT
RT_sdY            ATAGAGCAAAACAGTGCCTTACTATATGTAGCCCATGTTTCTGATGCTAT
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BT_sdY          -----GCTATTGTGGGCATGATAGCATC
AS_Tasmanian_Ssa02_sdY  -----GCTATTGTGGGCTAGACAGCATC
AS_Tasmanian_Ssa03_sdY  -----GCTATTGTGGGCTAGACAGCATC
AS_European_sdY        -----GCTATTGTGGGCTAGACAGCATC
AS_Tasmanian_Ssa06_sdY  -----GCTATTGTGGGCTAGACAGCATC
Chinook_sdY          TTGGCTAAAAATAGTATGACATGTCATACTATTGTGGGCCAGACAGCATC
RT_sdY            CTGGCTAAAAATAGTATGACATGTCATACTATTGTGGGCCAGACAGCATC
*   *****   **   *****

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```

BT_sdY          AGA-----CTAGATACAGCAAGA-----CGCTGTTTCGCTCACT
AS_Tasmanian_Ssa02_sdY  AGG-----CTACGTATAGTAAGA-----CGCTGTTTCGCTCACT
AS_Tasmanian_Ssa03_sdY  AGG-----CTACATATAGTAAGA-----CGCTGTTTCGCTCACC
AS_European_sdY        AGG-----CTACATATAGTAAGA-----CGCTGTTTCGCTCACT
AS_Tasmanian_Ssa06_sdY  AGG-----CTACATATAGTAAGA-----CGCTGTTTCGCTCACT
Chinook_sdY          AGACACATGGCCTACACACTCTGAGACAGAGGGGCGCTGTCTGGCTCACT
RT_sdY            AGACACATGGCCTACACACTCTGAGACAGAGGGGCGCTGTCTGGCTCACT
**               ***   *   ***               ***** *   *****

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BT_sdY          CGAATACTTTATCTGAGATTTACGTGCTTTTCTGTCGGCACGAGTCTCG-
AS_Tasmanian_Ssa02_sdY  CGAATACTTTATCTGAGATTTACGTGGTTTTCTGTCGGCACGAGTCTCGG
AS_Tasmanian_Ssa03_sdY  CGAATACTTTATCTGAGATTTACGTGGTTTTCTGTCGGCACGAGTCTCGG
AS_European_sdY        CGAATACTTTATCTGAGATTTACGTGGTTTTCTGTCGGCACGAGTCTCGG
AS_Tasmanian_Ssa06_sdY  CGAATACTTTATCTGAGATTTACGTGGTTTTCTGTCGGCACGAGTCTCGG
Chinook_sdY          CAGATGCTTTATCTGAGATTGATGTGTCTTTCT-----GTCTCGG
RT_sdY            CGGAAGCTTTATCTGAGATTGATGTGTCTTTCT-----GTCTCGG
*  *  *****  *  **  *****  *****

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BT_sdY          -----
AS_Tasmanian_Ssa02_sdY  TCAAATTTAATTTGGAAGGGTAAGGACGTATGGTGGG-----G
AS_Tasmanian_Ssa03_sdY  TCAAATTTAATTTGGAAGGGTAAGGACGTATGGTGGG-----G
AS_European_sdY        TCAAATTTAATTTGGAAGGGTAAGGACGTATGGTGGG-----G
AS_Tasmanian_Ssa06_sdY  TCAAATTTAATTTGGAAGGGTAAGGACGTATGGTGGG-----G
Chinook_sdY          TCAAATTTAATTTGGA--GGTACG---GTGGGGTGGGCCCGCCAAAACCA
RT_sdY            TCAAATTTAATTTGGATGGGCAAG---GTGGGGTGGGCCACCAAACCA

```

```

BT_sdY          -----
AS_Tasmanian_Ssa02_sdY  CGGGCCCTGCATTAAC TACAACAGTTATGATAACATTATGTTTTCTCCA
AS_Tasmanian_Ssa03_sdY  CGGGCCCTGCATTAAC TACAACAGTTATGATAACATTATGTTTTCTCCA
AS_European_sdY        CGGGCCCTGCATTAAC TACAACAGTTATGATAACATTATGTTTTCTCCA
AS_Tasmanian_Ssa06_sdY  CGGGCCCTGCATTAAC TACAACAGTTATGATAACATTATGTTTTCTCCA
Chinook_sdY          CAGGGCCCTGCATTAAC TACAACAGTTATGATAACATTACATTTCTCTA
RT_sdY            CAGGGCCCTGCATTAAC TACAACAGTTATGATAACATTACATTTCTCTA

```



```

BT_sdY -----
AS_Tasmanian_Ssa02_sdY TTTTCCTGTAATTTTC-----
AS_Tasmanian_Ssa03_sdY TTTTCCTGTAATTTTC-----
AS_European_sdY TTTTCCTGTAATTTTC-----
AS_Tasmanian_Ssa06_sdY TTTTCCTGTAATTTTC-----
Chinook_sdY TATTACTGTAATTTTCCACCATACAGTGCATTTCGGAAAATATTCAGACCC
RT_sdY TATTACTGTAATTTTCCACCATACAGTGCATTTCGGAAAGTATTCAAACCC

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```

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----GTTACAGCCTCATTCTAAAATTGAT
AS_Tasmanian_Ssa03_sdY -----GTTACAGCCTTATTCTAAAATTGAT
AS_European_sdY -----GTTACAGCCTTATTCTAAAATTGAT
AS_Tasmanian_Ssa06_sdY -----GTTACAGCCTTATTCTAAAATTGAT
Chinook_sdY ATTCCCTTTTCCCACATTTTGTTATGCTACAGCCTTATTCTTATATTGAT
RT_sdY ATTCCCTTTTCCCACATTTTGTTATGCTACAGCCTTATTCTAATATTGAT

```

```

BT_sdY -----
AS_Tasmanian_Ssa02_sdY TAAATAAATGTTTTTCCTCATCAATCTACACACAATACCTTATAATGGTA
AS_Tasmanian_Ssa03_sdY TAAATAAATGTTTTTCCTCATCAATCTACACACAATACCTTATAATGGTA
AS_European_sdY TAAATAAATGTTTTTCCTCATCAATCTACACACAATACCTTATAATGGTA
AS_Tasmanian_Ssa06_sdY TAAATAAATGTTTTTCCTCATCAATCTACACACAATACCTTATAATGGTA
Chinook_sdY TAAAT---CGGTTTTTCCTCATCAATCTACACACAATACCCCATAAATGACA
RT_sdY TAAAT---CGTTTTTCCTCATCAATCTACACACAATACCCCATAAATGACA

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```

BT_sdY -----
AS_Tasmanian_Ssa02_sdY TATATAACAGATTTAAAGATTTTTTACAAATGT-----ATAAAAAAAT
AS_Tasmanian_Ssa03_sdY TATATAACAGATTTAAAGATTTTTTACAAATGT-----ATAAAAAAAT
AS_European_sdY TATATAACAGATTTAAAGATTTTTTACAAATGT-----ATAAAAAAAT
AS_Tasmanian_Ssa06_sdY TATATAACAGATTTAAAGATTTTTTACAAATGT-----ATAAAAAAAT
Chinook_sdY -----AGGTGAAAACAGTTTTTAAGAAAGTTTTGCTGATTAAAAAAC
RT_sdY -----AGGTGAAAACAGTTTTTAAGAAAGTTTTGCTGATTAAAAAAC

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```

BT_sdY -----
AS_Tasmanian_Ssa02_sdY GT-----TTATTTACATAAGTATTTAGACCCTTTGCTAT
AS_Tasmanian_Ssa03_sdY GT-----TTATTTACATAAGTATTTAGACCCTTTGCTAT
AS_European_sdY GT-----TTATTTACATAAGTATTTAGACCCTTTGCTAT
AS_Tasmanian_Ssa06_sdY GT-----TTATTTACATAAGTATTTAGACCCTTTGCTAT
Chinook_sdY ATCAACAACCTATATATCTTATTTACATAAGATTTTCAGACCCTTTGCTAT
RT_sdY ATCAACAACCTATACATCTTATTTACATAAGATTTTCAGACCCTTTGCTAT

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```

BT_sdY -----
AS_Tasmanian_Ssa02_sdY GAAACTCGAAATTAAGCTCAGCTGCATCCGGTTTC--CATTGATAATATT
AS_Tasmanian_Ssa03_sdY GAAACTCGAAATTAAGCTCAGCTGCATCCGGTTTC--CATTGATAATATT
AS_European_sdY GAAACTCGAAATTAAGCTCAGCTGCATCCGGTTTC--CATTGATAATATT
AS_Tasmanian_Ssa06_sdY GAAACTCGAAATTAAGCTCAGCTGCATCCGGTTTC--CATTGATAATATT
Chinook_sdY GAGAATCAAAATTAATATCAGCAGAATCCGGTTTCTGCTTTGATAATATT
RT_sdY GAGAATCAAAATTAATCTCAGCAGAATCCGGTTTC--CATTGATAATATT

```

---Exon 3-4

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY TGAGATGTTTCTACAACCTTGATTGGAGTCCACCTCTGGTAAATTCAATTT
AS_Tasmanian_Ssa03_sdY TGAGATGTTTCTACAACCTTGATTGGAGTCCACCTCTGGTAAATTCAATTT
AS_European_sdY TGAGATGTTTCTACAACCTTGATTGGAGTCCACCTCTGGTAAATTCAATTT
AS_Tasmanian_Ssa06_sdY TGAGATGTTTCTACAACCTTGATTGGAGTCCACCTCTGGTAAATTCAATTT
Chinook_sdY TTAGATGTTTCTACAACCTTGAGTGGAGTCCACCTGTGGTGGATTCAATTC
RT_sdY TTAGATGTTTCTACAACCTTGAGTGGAGTCCACCTGTGGTAGATTAAATTC
```

F2a----->

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY A-TGGGACATGATTTGGAAAGGCACACTCCTGTCTATATAAGGTCCCACA
AS_Tasmanian_Ssa03_sdY A-TGGGACATGATTTGGAAAGGCACACTCCTGTCTATATAAGGTCCCACA
AS_European_sdY A-TGGGACATGATTTGGAAAGGCACACTCCTGTCTATATAAGGTCCCACA
AS_Tasmanian_Ssa06_sdY A-TGGGACATGATTTGGAAAGGCACACTCCTGTCTATATAAGGTCCCACA
Chinook_sdY ATTGGGGCATGATATTGAAAGGCACACACCTGTCTATAACAAGGTCCCACA
RT_sdY ATTGGGGCATGATATTGAAAGGCACACACCTGTCTATAACAAGGTCCCACA
```

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY GTTGACAGTGCATTTTCAGAGCAAAAACCAAGTCATGAGGGCAAAGGAATT
AS_Tasmanian_Ssa03_sdY GTTGACAGTGCATTTTCAGAGCAAAAACCAAGTCATGAGGGCAAAGGAATT
AS_European_sdY GTTGACAGTGCATTTTCAGAGCAAAAACCAAGTCATGAGGGCAAAGGAATT
AS_Tasmanian_Ssa06_sdY GTTGACAGTGCATTTTCAGAGCAAAAACCAAGTCATGAGGGCAAAGGAATT
Chinook_sdY GTTGACAGTGCATGTCAGGGCAAAAACAAAGCCATGAGATTGAAAGAATT
RT_sdY GTTGACAGTGCATGTCAGGGCAAAAACCAAGCCATGAGATTGAAAGAATT
```

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY ATCCGTAGGGCTCCAAAACAGGATTGTGTATAGGCACAGATCAGGGGAAG
AS_Tasmanian_Ssa03_sdY ATCCGTAGAGCTCCAAAACAGGATTGTGTATAGGCACAGATCAGGGGAAG
AS_European_sdY ATCCGTAGAGCTCCAAAACAGGATTGTGTATAGGCACAGATCAGGGGAAG
AS_Tasmanian_Ssa06_sdY ATCCGTAGAGCTCCAAAACAGGATTGTGTATAGGCACAGATCAGGGGAAG
Chinook_sdY ATCCG-----AAACAAGATTGTGTTGAGGCACAGATC-TGGGAAG
RT_sdY ATCCG-----AAACAAGATTGTGTTGAGGCACAGATC-TGGGAAG
```

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY GGTACCAAACATTTCTGAAGCATTGAAGGTCCCCAAGAACACAGTGGTC
AS_Tasmanian_Ssa03_sdY GGTACCAAACATTTCTGAAGCATTGAAGGTCCCCAAGAACACAGTGGTC
AS_European_sdY GGTACCAAACATTTCTGAAGCATTGAAGGTCCCCAAGAACACAGTGGTC
AS_Tasmanian_Ssa06_sdY GGTACCAAACATTTCTGAAGCATTGAAGGTCCCCAAGAACACAGTGGTC
Chinook_sdY GGTACCAAACATTTCTGAAGCATTGAAGGTCCCCAAGA--TCAGTGGTC
RT_sdY GGTACCAAACGTTTCTGAA-----CCCCAAGA--TCAATGGTC
```

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY TCCATCATTCTTAAATGGAAGAAGTCTGGAAACACCAAGATTCTTCCTAG
AS_Tasmanian_Ssa03_sdY TCCATCATTCTTAAATGGAAGAAGTTTGGAAACACCAAGATTCTTCCTAG
AS_European_sdY TCCATCATTCTTAAATGGAAGAAGTTTGGAAACACCAAGATTCTTCCTAG
AS_Tasmanian_Ssa06_sdY TCCATCATTCTTAAATGGAAGAAGTTTGGAAACACCAAGATTCTTCCTAG
Chinook_sdY TCCATCATTCTGAAATGGAAGAAGTTTGGAAACCACCGAAACTCATCCTAG
RT_sdY TCCATCATTCTGAAATGGAAGAAGTTTGGAAACCCTGAAACTCATCCTAG
```

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY AGCTGGCCACCCG-----
AS_Tasmanian_Ssa03_sdY AGCTGGCCACCCG-----
AS_European_sdY AGCTGGCCACCCG-----
AS_Tasmanian_Ssa06_sdY AGCTGGCCACCCG-----
Chinook_sdY AGTTGGCCGCCAGAGCTGGACTCCTGAGTGGAGCAGTGGTCTAAGGCAC
RT_sdY AGTTGGCCGCCCA-----GAGCAGCGGTCTAAGGCAC
```

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TGCATCTTAGTGCTAGATTGGTCACTACAGTCCCGGTTTCGATCCCGGGC
RT_sdY TGCATCTCAGTGCTAGATTGGTCACTACAGTCCCGGTTTCGATCCCGGGC
```

```
BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY TGTATCACAACCGGTCGTGATTTGGAGTCCCATAGGGCGCCGTACAATTT
RT_sdY TGTATCACAACCGGTCGTGATTTGGAGTCCCATAGGGCGGCGTACAATTT
```

```

BT_sdY -----GCCAAACTGA
AS_Tasmanian_Ssa02_sdY -----GCCAACCTGA
AS_Tasmanian_Ssa03_sdY -----GCCAACCTGA
AS_European_sdY -----GCCAACCTGA
AS_Tasmanian_Ssa06_sdY -----GCCAACCTGA
Chinook_sdY GGCCCAGCGTCGTCCGGGTTAGGGGAGGCCGGGGAGGCCGTCATTGTAA
RT_sdY GGCCCAGCGTTGTCCGGGTTAGGGGAGGCCGGGGAGGCCGTCATTGTAA
* ** * *

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BT_sdY GCA-----
AS_Tasmanian_Ssa02_sdY GCA-----
AS_Tasmanian_Ssa03_sdY GCA-----
AS_European_sdY GCA-----
AS_Tasmanian_Ssa06_sdY GCA-----
Chinook_sdY GCAAGAATTTGTTTTTATATGACTTGCCTAGTTAAATAATGGTTAA--AT
RT_sdY ACAAGAATTTGTTTTTATATTACTTGCCTAGTTAAATAATGGCTAAATAT
**

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BT_sdY -----ATCGGGGAGAAGGGCCTTGGTCATGGAGGTGAT
AS_Tasmanian_Ssa02_sdY -----ATCGGGGAGAAGGGCCTTGGTCAGGGAGGTGAT
AS_Tasmanian_Ssa03_sdY -----ATCGGGGAGAAGGGCCTTGGTCAGGGAGGTGAT
AS_European_sdY -----ATCGGGGAGAAGGGCCTTGGTCAGGGAGGTGAT
AS_Tasmanian_Ssa06_sdY -----ATCGGGGAGAAGGGCCTTGGTCAGGGAGGTGAT
Chinook_sdY ATATTTATTTTTTATTATCAGGGGAGAAGGGCCTTGGTCAGGGAGGTGAC
RT_sdY ATATTTATTTTTTATTATCAGGGGAGAAGGGCCTTGGTCAGGGAGGTGAC
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```

BT_sdY CAAGAACCCGATTGTCAATCGGACAGAGCTCCAGAGTTCCTCTGTGGAGA
AS_Tasmanian_Ssa02_sdY CAAGAACCCGATTGTCAATCGGACAGAGCTCCAGAGTTCCTCTGTGGAGA
AS_Tasmanian_Ssa03_sdY CAAGAACCCGATTGTCAATCGGACAGAGCTCCAGAGTTCCTCTGTGGAGA
AS_European_sdY CAAGAACCCGATTGTCAATCGGACAGAGCTCCAGAGTTCCTCTGTGGAGA
AS_Tasmanian_Ssa06_sdY CAAGAACCCGATTGTCAATCGGACAGAGCTCCAGAGTTCCTCTGTGGAGA
Chinook_sdY CAATAACCTGATGGTCACTCTGACATAGCTCCAAAGTTCCTCTGTGGAAA
RT_sdY CAATAACCTGATGGTC-CTCTGACATAGCTCCAAAGTTCCTCTGTGGAGA
*** **

BT_sdY TGGGAGAACCTTCCAGAAGGACAACCATCTCTGCAGCACTCCACCAATCA
AS_Tasmanian_Ssa02_sdY TGGGAGAACCTTCCAGAAGGACAACCATCTCTGCAGCACTCCACCAATCA
AS_Tasmanian_Ssa03_sdY TGGGAGAACCTTCCAGAAGGACAACCATCTCTGCAGCACTCCACCAATCA
AS_European_sdY TGGGAGAACCTTCCAGAAGGACAACCATCTCTGCAGCACTCCACCAATCA
AS_Tasmanian_Ssa06_sdY TGGGAGAACCTTCCAGAAGGACAACCATCTCTGCAGCACTCCACCAATCA
Chinook_sdY TGGGAGAATCTTCCAGAATGACAGCCATCTCTGCAACACTCCAATAATCA
RT_sdY TGGGAGAATCTTCCAGAATGACAGCCATCTCTGCAGCACTCCACTAATCA
***** **

BT_sdY GGCCTTTATGGTAGAGTGTCCAGACGGAAGCCACTCCTCAGTAAAAGGCA
AS_Tasmanian_Ssa02_sdY GGCCTTCATGGTAGAGTGTCCAGACGGGAGCCACTCCTCAGTAAAAGGCA
AS_Tasmanian_Ssa03_sdY GGCCTTCATGGTAGAGTGTCCAGACGGGAGCCACTCCTCAGTAAAAGGCA
AS_European_sdY GGCCTTCATGGTAGAGTGTCCAGACGGGAGCCACTCCTCAGTAAAAGGCA
AS_Tasmanian_Ssa06_sdY GGCCTTCATGGTAGAGTGTCCAGACGGGAGCCACTCCTCAGTAAAAGGCA
Chinook_sdY GGCCTTTATAGTAGAGTGGCCAGACGGAAGCCACTCCTCAGTAAAAGGCA
RT_sdY GGCCTTTTTTGGTAGAGTGGCCAGACGGAAGCCACTCCTCAGTAAAAGGCA
***** *

BT_sdY CATGACAGCCCGCTTGTAGTTTGC AAAAGGAACCTAAAGGACTCTCAGA
AS_Tasmanian_Ssa02_sdY CATGACAGCCCTCTTGTAGTTTGC AAAAGGAACCTAAAGGACTCTCAGA
AS_Tasmanian_Ssa03_sdY CATGACAGCCCGCTTGTAGTTTGC AAAAGGAATCTAAAGGACTCTCAGA
AS_European_sdY CATGACAGCCCGCTTGTAGTTTGC AAAAGGAACCTAAAGGACTCTCAGA
AS_Tasmanian_Ssa06_sdY CATGACAGCCCTCTTGTAGTTTGC AAAAGGAACCTAAAGGACTCTCAGA
Chinook_sdY CATGACAGCCC ACTTGGAGTTTGC AAAAGGAACATAAAGCACTCTCAGA
RT_sdY CATGACAGCCC ACTTGGAGTTTGC AAAAGGAACATAAAGCACTCTCAGA
***** **

BT_sdY CCATGAGAAACAAGATTCTCTTGTCTGAATAAACCAAGATTGAACACTTT
AS_Tasmanian_Ssa02_sdY CCATGAGAAACAAGATTCTCTTGTCTGAATAAACCAAGATTGAACACTTT
AS_Tasmanian_Ssa03_sdY CCATGAGAAACAAGATTCTCTTGTCTGAATAAACCAAGATTGAACACTTT
AS_European_sdY CCATGAGAAACAAGATTCTCTTGTCTGAATAAACCAAGATTGAACACTTT
AS_Tasmanian_Ssa06_sdY CCATGAGAAACAAGATTCTCTTGTCTGAATAAACCAAGATTGAACACTTT
Chinook_sdY CCATGAGAAACAAGATTCTCTGCTCTGATTTAATCAAGATTTAACTCTAT
RT_sdY CCATGAGAAACAAGATTCTCTGCTCTGATTTAATCAAGATTTAACTCTAT
***** * **

BT_sdY GGCCT-GAATGCCAAGTGTACATCTGGAGGAAAGCTGGCACCATCCCTA
AS_Tasmanian_Ssa02_sdY GGCCT-GAATGCCAAGTGTACATCTGGAGGAAAGCTGGCACCATCCCTA
AS_Tasmanian_Ssa03_sdY GGCCT-GAATGCCAAGTGTACATCTGGAGGAAAGCTGGCACCATCCCTA
AS_European_sdY GGCCT-GAATGCCAAGTGTACATCTGGAGGAAAGCTGGCACCATCCCTA
AS_Tasmanian_Ssa06_sdY GGCCT-GAATGCCAAGTGTACATCTGGAGGAAAGCTGGCACCATCCCTA
Chinook_sdY GGCCT-AAATTACAAGCGTACATCTGGTGGAAAGCTGGCACCATCCCTG
RT_sdY GGCCTAAAATTACAAGCGTACATCTGGTGGAAAGCTGGCACCATCCCTA
***** **

BT_sdY CAGTGAAGCATGGTGGGAGCAGCATCATGCTGTGGGGATGTTTTTCAGCG
AS_Tasmanian_Ssa02_sdY CGGTGAAGCATGGTGGGGGCAGCATCATGCTGTGGGGATGTTTTTCAGCG
AS_Tasmanian_Ssa03_sdY CAGTGAAGCATGGTGGGGGCAGCATCATGCTGCGGGGATGTTTTTCAGCG
AS_European_sdY CAGTGAAGCATGGTGGGGGCAGCATCATGCTGTGGGGATGTTTTTCAGCG
AS_Tasmanian_Ssa06_sdY CGGTGAAGCATGGTGGGGGCAGCATCATGCTGTGGGGATGTTTTTCAGCG
Chinook_sdY TGA-----
RT_sdY TGA-----

BT_sdY GCAGGGACTGGGATCGAGGGAAAGATTAACAGAGCAAAGTACAGAGAGAT
AS_Tasmanian_Ssa02_sdY GCAGGGACTGGGATCGAGGGAAAGATTAACAGAGCAAAGTACAGAGAGAT
AS_Tasmanian_Ssa03_sdY GCAGGGACTGGGATCGAGGGAAAGATTAACAGAGCAAAGTACGGAGAGAT
AS_European_sdY GCAGGGACTGGGATCGAGGGAAAGATTAACAGAGCAAAGTACAGAGAGAT
AS_Tasmanian_Ssa06_sdY GCAGGGACTGGGATCGAGGGAAAGATTAACAGAGCAAAGTACAGAGAGAT
Chinook_sdY -----
RT_sdY -----

BT_sdY TCTTGATCCAGAGCGCTCAGGACCTCAGACTGGGGCTAAGGTTACCTTC
AS_Tasmanian_Ssa02_sdY TCTTGATCCAGAGCGCTCAGGACCTCAGACTGGGGCTAAGGTTACCTTC
AS_Tasmanian_Ssa03_sdY TCTTGATCCAGAGCGCTCAGGACCTCAGACTGGGGCTAAGGTTTACCTTC
AS_European_sdY TCTTGATCCAGAGCGCTCAGGACCTCAGACTGGGGCTAAGGTTACCTTC
AS_Tasmanian_Ssa06_sdY TCTTGATCCAGAGCGCTCAGGACCTCAGACTGGGGCTAAGGTTACCTTC
Chinook_sdY -----
RT_sdY -----

BT_sdY CAACAGGACAACGACCGTAAACACACAGCCAAGAAAACGCAGGAGTGGCT
AS_Tasmanian_Ssa02_sdY CAACAGGACAACGACCGTAAACACACAGCCAAGACAACGCAGGAGTGGCT
AS_Tasmanian_Ssa03_sdY CAACAGGACGACGACCGTAAACACACAGCCAAGACAACGCAGGAGTGGCT
AS_European_sdY CAACAGGACAACGACCGTAAACACACAGCCAAGACAACGCAGGAGTGGCT
AS_Tasmanian_Ssa06_sdY CAACAGGACAACGACCGTAAACACACAGCCAAGACAACGCAGGAGTGGCT
Chinook_sdY -----
RT_sdY -----

BT_sdY TCGGGACAAGTCTCTGAATTTTCATTCACGAGCACGGACTTGAACCCGATC
AS_Tasmanian_Ssa02_sdY TCAGGACAAGTCTCTGAATTTTCATTCATGAGCACGGACTTGAACCCGATC
AS_Tasmanian_Ssa03_sdY TCAGGACAAGTCTCTGAATTTTCATTCATGAGCACGGACTTGAACCCGATC
AS_European_sdY TCAGGACAAGTCTCTGAATTTTCATTCATGAGCACGGACTTGAACCCGATC
AS_Tasmanian_Ssa06_sdY TCAGGACAAGTCTCTGAATTTTCATTCATGAGCACGGACTTGAACCCGATC
Chinook_sdY -----
RT_sdY -----

BT_sdY TAACATCTCTGTAGAGACCTGAAAATAGCTGTGCAGCGACATTTCCCATC
AS_Tasmanian_Ssa02_sdY TAACATCTCTGTAGAGACCTGAAAATAGCTGTGCAGCGACATTTCCCATT
AS_Tasmanian_Ssa03_sdY TAACATCTCTGTAGAGACCTGAAAATAGCTGTGCAGCGACATTTCCCATT
AS_European_sdY TAACATCTCTGTAGAGACCTGAAAATAGCTGTGCAGCGACATTTCCCATT
AS_Tasmanian_Ssa06_sdY TAACATCTCTGTAGAGACCTGAAAATAGCTGTGCAGCGACATTTCCCATT
Chinook_sdY -----
RT_sdY -----

BT_sdY CAACCTGACAGAGCTTGAGAGGATCTGCAGAGAATAATGAGAGAAACTCC
AS_Tasmanian_Ssa02_sdY CAACCTGACAGAGCTTGAGAGGATCTGCAGAGAAGAATGAGAGAAACTCC
AS_Tasmanian_Ssa03_sdY CAACCTGACAGAGCTTGAGAGGATCTGCAGAGAAGAATGAGAGAAACTCC
AS_European_sdY CAACCTGACAGAGCTTGAGAGGATCTGCAGAGAAGAATGAGAGAAACTCC
AS_Tasmanian_Ssa06_sdY CAACCTGACAGAGCTTGAGAGGATCTGCAGAGAAGAATGAGAGAAACTCC
Chinook_sdY -----
RT_sdY -----

BT_sdY CCAAATACAGGTGTGCCAAGCTTGTAGCGTCATACCCAAGAAGACTCGAT
AS_Tasmanian_Ssa02_sdY CCAAATACAGGTGTGCCAAGCTTGTAGCGTCATACCCAAGAAGACTTGTAT
AS_Tasmanian_Ssa03_sdY CCAAATACAGGTGTGCCAAGCTTGTAGCGTCATACCCAAGAAGACTTGTAT
AS_European_sdY CCAAATACAGGTGTGCCAAGCTTGTAGCGTCATACCCAAGAAGACTTGTAT
AS_Tasmanian_Ssa06_sdY CCAAATACAGGTGTGCCAAGCTTGTAGCGTCATACCCAAGAAGACTTGTAT
Chinook_sdY -----
RT_sdY -----

BT_sdY GCTGTAATCGCTGCCAAAGGTGTTTCAACAAAGTACTGAGTAAAGGGTCT
AS_Tasmanian_Ssa02_sdY GCTGTAATCGCTGCCAAAGGTGCTTCAACAAAGTACTGAGTAAAGGGTCT
AS_Tasmanian_Ssa03_sdY GCTGTAATCGCTGCCAAAGGTGCTTCAACAAAGTACTGAGTAAAGGGTCT
AS_European_sdY GCTGTAATCGCTGCCAAAGGTGCTTCAACAAAGTACTGAGTAAAGGGTCT
AS_Tasmanian_Ssa06_sdY GCTGTAATCGCTGCCAAAGGTGCTTCAACAAAGTACTGAGTAAAGGGTCT
Chinook_sdY -----T
RT_sdY -----T
*

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BT_sdY      GAATACTTATCTAAATGTGATATTTTC-----CGTTTTAA----AT-
AS_Tasmanian_Ssa02_sdY  GAATACTTATCTAAATGTGATATTTTC-----CGTTTTAA----AT-
AS_Tasmanian_Ssa03_sdY  GAATACTTATCTAAATGTGATATTTTC-----CGTTTTAA----AT-
AS_European_sdY        GAATACTTATCTAAATGTGATATTTTC-----CGTTTTAA----AT-
AS_Tasmanian_Ssa06_sdY  GAATACTTATCTAAATGTGATATTTTC-----CGTTTTAA----AT-
Chinook_sdY           GAATACTCATGTAAATGTAATATTTCAATTTTTTTTTTATTTCATTTTTTT-
RT_sdY              GAATACTCATGTAAATGTAATATTTCAAAAACAAATATTTCAA----ATG
*****  ** ***** *****                               *** **      *

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BT_sdY      TTGTAAT--GAATTGGCTAATATTTCTAAAAACCTGTTTTTGCTTTGTCA
AS_Tasmanian_Ssa02_sdY  TTGTAAT--GAATTGGCTAATATTTCTAAAAACCTGTTTTTGCTTTGTCA
AS_Tasmanian_Ssa03_sdY  TTGTAAT--GAATTGGCTAATATTTCTAAAAACCTGTTTTTGCTTTGTCA
AS_European_sdY        TTGTAAT--GAATTGGCTAATATTTCTAAAAACCTGTTTTTGCTTTGTCA
AS_Tasmanian_Ssa06_sdY  TTGTAAT--GAATTGGCTAATATTTCTAAAAACCTGTTTTTGCTTTGTCA
Chinook_sdY           TTTAAAT--AAATTGGCTAATATTTCTACACACCTGTTTTTTCTTTGTCA
RT_sdY              TTTTAATAGAAATTGGCTAATATTTCTACACACCTGTTTTTTCTTTGTCA
**   ***   ***** * ***** *****

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BT_sdY      TTATGGGGTATTGTGTGTAGATAATGA-GGGAAAAAACTATTTAATCCA
AS_Tasmanian_Ssa02_sdY  TTATGGGGTA-TGTGTGTAGATTAATGAGGGGAAAAAACTATTTAATCCA
AS_Tasmanian_Ssa03_sdY  TTATGGGGTA-TGTGTGTAGATTAATGAGGGGAAAAAAACAATTTAATCCA
AS_European_sdY        TTATGGGGTA-TGTGTGTAGATTAATGAGGGGAAAAAAACAATTTAATCCA
AS_Tasmanian_Ssa06_sdY  TTATGGGGTA-TGTGTGTAGATTAATGAGGGGAAAAAACTATTTAATCCA
Chinook_sdY           TTGTGGGGTATTGTGTGTAGATAATGA-GGGAAAAAGCAATTTAATCAA
RT_sdY              TTGTGGGGTATTGTGTGTAGATTAATGAGGGGAAAAGA-AATTTAATCAA
** ***** ***** ***** ***** ***** ***** *

```

BT_sdY TTTTAGAATAAGGCTATAATGTAACAAAACGTGGAAAAAGTCAAGGGGTC
AS_Tasmanian_Ssa02_sdY TTTTAGAATAAGGCTATAATGTAACAAAACGTGGAAAAAGTCAAGGTGTC
AS_Tasmanian_Ssa03_sdY TTTTAGAATAAGGCTATAATGTAACAAAACGTGGAAAAAGTCAAGGTGTC
AS_European_sdY TTTTAGAATAAGGCTATAATGTAACAAAACGTGGAAAAAGTCAAGGTGTC
AS_Tasmanian_Ssa06_sdY TTTTAGAATAAGGCTATAATGTAACAAAACGTGGAAAAAGTCAAGGTGTC
Chinook_sdY TTTTGGAATAATGCTGAAATGTAACACAATTTGGAAAATGTCAAGGAG--
RT_sdY TTTTGGAATAATGCTGAAATGTAACACAATTTGGAAAATGTCAAGGAGAC
***** **

BT_sdY TGAATCCTTTCCCAATGCACTGTATATGTGTGAATGTGTATGAGGCATTA
AS_Tasmanian_Ssa02_sdY TGAATACTTTCCCAATGCACTGTATATGTGTGAATGTGTATGAGGCGTTA
AS_Tasmanian_Ssa03_sdY TGAATACTTTCCCAATGCACTGTATATGTGTGAATGTGTATGAGGCGTTA
AS_European_sdY TGAATACTTTCCCAATGCACTGTATATGTGTGAATGTGTATGAGGCGTTA
AS_Tasmanian_Ssa06_sdY TGAATACTTTCCCAATGCACTGTATATGTGTGAATGTGTATGAGGCGTTA
Chinook_sdY -----ACTTTCCCAATGC-----ATATGTGTAAATGTGTATGGGGCCTTA
RT_sdY TGAATACTTTCCCAATGC-----ATATGTGTAAACGTGTATGGGGCCTTA
***** **

BT_sdY CAGA-----GCCACTTGATGTTGATTATAATTAGATGTT-AACAATCCTT
AS_Tasmanian_Ssa02_sdY CAGA-----GCCACTTGATGTTGATTATAATTAGATGTT-CACAATCCTT
AS_Tasmanian_Ssa03_sdY CAGA-----GCCACTTGATGTTGATTATAATTAGATGTT-CACAATCCTT
AS_European_sdY CAGA-----GCCACTTGATGTTGATTATAATTAGATGTT-CACAATCCTT
AS_Tasmanian_Ssa06_sdY CAGA-----GCCACTTGATGTTGATTATAATTAGATGTT-CACAATCCTT
Chinook_sdY CTTACTTACTCCACTTGGTGTGATTAT-----AATCTTT
RT_sdY CTTACTTACTCCACTTGGTGTGATTATAATTAGATGTTGAACAATCTTT
* * ***** **

		exon4
BT_sdY	CCTTCTCCAG	ATTAAATTGCCATGGGCTCAGCAGCTATTCAAGCAAGCTC
AS_Tasmanian_Ssa02_sdY	CCTTCTCCAG	ATTAAATTGCCATGGGCTCAGCAGCTATTCAAGCAAGCTC
AS_Tasmanian_Ssa03_sdY	CCTTCTCCAG	ATTAAATTGCCATGGGCTCAGCAGCTATTCAAGCAAGCTC
AS_European_sdY	CCTTCTCCAG	ATTAAATTGCCATGGGCTCAGCAGCTATTCAAGCAAGCTC
AS_Tasmanian_Ssa06_sdY	CCTTCTCCAG	ATTAAATTGCCATGGGCTCAGCAGCTATTCAAGCAAGCTC
Chinook_sdY	CCTTCTCCAG	ATTAAATTGCCATGGGCTCAGCAGCTATTCAAGGAAGTTC
RT_sdY	CCTTCTCCAG	ATTAAATTACCATGGGCCAGCAGCTATTCAAGGAAGTTC
	*****	***** ***** ***** ***** ***** ** *

	exon4	
BT_sdY	ACGACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAGTCTGA	
AS_Tasmanian_Ssa02_sdY	ACGACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAGTCTGA	
AS_Tasmanian_Ssa03_sdY	ACGACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAGTCTGA	
AS_European_sdY	ACGACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAGTCTGA	
AS_Tasmanian_Ssa06_sdY	ACGACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAGTCTGA	
Chinook_sdY	ATGACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAGTCTGA	
RT_sdY	ATGACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAGTCTGA	
	*	*****

BT_sdY	AAATATGGTTG--GTCCCAACAGGACTCCAATTGCTCCCAATATTAGCCT
AS_Tasmanian_Ssa02_sdY	AAATATGGTTG--GTCCCAACAGGACTCCAATTGCTCCCAATATTAGCCT
AS_Tasmanian_Ssa03_sdY	AAATATGGTTG--GTCCCAACAGGACTCCAATTGCTCCCAATATTAGCCT
AS_European_sdY	AAATATGGTTG--GTCCCAACAGGACTCCAATTGCTCCCAATATTAGCCT
AS_Tasmanian_Ssa06_sdY	AAATATGGTTG--GTCCCAACAGGACTCCAATTGCTCCCAATATTAGCCT
Chinook_sdY	AGAACCGGTTGGAGTCCCAACAGGA-----CTCCCAATATGAGCCT
RT_sdY	AGAACTGGTTGGAGTCCCAACAGGACCCCAACTGCTCCCAATATGAGCCT
	* * ***** ***** ***** *****


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--sdY 3'UTR-----
BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY      AGACAATCAGCCAGTAAATAAA-----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY          AGACATTCAGACAGTAAATTAATAAATACCCTTCAAATACATAATTTTAA
RT_sdY               AGACAATCAGACAGTAAATTAATAAATACCCTTCA-----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY          TGTTGCTTTTTTGTCCATTCAGATTAATGCTTACTTCATGCTGTTTGT
RT_sdY -----

BT_sdY -----
AS_Tasmanian_Ssa02_sdY -----
AS_Tasmanian_Ssa03_sdY -----
AS_European_sdY -----
AS_Tasmanian_Ssa06_sdY -----
Chinook_sdY          CTGTTACAGTTG
RT_sdY -----

```

Figure S1 CLUSTAL 2.1 multiple sequence alignment of sdY from brown trout (BT), three Tasmanian and one European Atlantic salmon, Chinook salmon and rainbow trout (RT). The boundaries of exons and locations of primers are shown.

sdY MADREARFQAQHSFLVSVEYCEEEVLSHEVMGSDVRIAYKPFSLMMDGIPVISLPPKPPDT
AS_Tasmanian_Ssa02 MVDREARFQAQHSFLVSVEYCEEEVLSHEVMGSDVRIAYKPFSLMMDGIPVISLPPKPPDT
AS_Tasmanian_Ssa03 MVDREARFQAQHSFLVSVEYCEEEVLSHEVMGSDVRIAYKPFSLMMDGIPVISLPPKPPDT
AS_European MVDREARFQAQHSFLVSVEYCEEEVLSHEVMGSDVRIAYKPFSLMMDGIPVISLPPKPPDT
AS_Tasmanian_Ssa06 MVDREARFQAQHSFLVSVEYCEEEVLSHEVMGSDVRIAYKPFSLMMDGIPVISLPPKPPDT
Chinook_sdY MADREARIQAQHCFLVSVEYCEEEVLSHEVMGGDVRIAHKT-SLMMDGIPFISLPPKPPNT
RT_sdY MADREARIQAQHCFLVSVEYCEEEVLSHEVMGGDVRIAHKT-SLMMDGIPFISLPPKPPNT
* . ***** : ***** . ***** : ***** . ***** : ***** . ***** : ***** *

BT_sdY IPISDRSTLSNLLSLMEGGVVLSSREEGIYAERHSQAIVSWMGGTGDEMHVMERDVDPV
AS_Tasmanian_Ssa02 IPISDRSILSNLLSLMEGGVVLSSKEEGIYAERHSQAIVSWMGGTGDEMHVMERDVDPV
AS_Tasmanian_Ssa03 IPISDRSILSNLLSLMEGGVVLSSKEEGIYAERHSQAIVSWMGGTGDEMHVMERDVDPV
AS_European IPISDRSILSNLLSLMEGGVVLSSKEEGIYAERHSQAIVSWMGGTGDEMHVMERDVDPV
AS_Tasmanian_Ssa06 IPISDRSILSNLLSLMEGGVVLSSKEEGIYAERHSQAIVSWMGGTGDEMHVMERDVDPV
Chinook_sdY LPISDRSILSNLLSLMEGGVVLSSREEGIYAERHSQATVSWMGGTGDEMHVMDRDVDPV
RT_sdY LPISDRSILSNLLSLMEGGVVLSSREEGIYAERHSQATVSWMGGTGDEMHVMERDVDPV
: ***** ***** : ***** ***** : *****

BT_sdY MLFNRETFRQELERFSRADGFQPQIGFSLWFGQDSSLSAPISISIKLPWAQQQLFKQAHDF
AS_Tasmanian_Ssa02 MLFNRETFRQELERFSRADGFQPQIGFSLWFGQDSSLSAPISISIKLPWAQQQLFKQAHDF
AS_Tasmanian_Ssa03 MLFNRETFRQELERFSRADGFQPQIGFSLWFGQDSSLSAPISISIKLPWAQQQLFKQAHDF
AS_European MLFNRETFRQELERFSRADGFQPQIGFSLWFGQDSSLSAPISISIKLPWAQQQLFKQAHDF
AS_Tasmanian_Ssa06 MLFNRETFRQELERFSRADGFQPQIGFSLWFGQDSSLSAPISISIKLPWAQQQLFKQAHDF
Chinook_sdY MLFNRETFRQELERFARADGSQPQCGFSLWFGQDSSLSAPNFISIKLPWAQQQLFKEVHDF
RT_sdY MLFNREHFRQELDRFARADGSQPQCGFSLWFGQDSSLSAPIFISIKLPWAQQQLFKEVHDF
***** ***** : ** : ***** ** ***** ***** : . ***

```
BT_sdY          RIWLESSPVSPGV
AS_Tasmanian_Ssa02  RIWLESSPVSPGV
AS_Tasmanian_Ssa03  RIWLESSPVSPGV
AS_European       RIWLESSPVSPGV
AS_Tasmanian_Ssa06  RIWLESSPVSPGV
Chinook_sdY       RIWLESSPVSPGV
RT_sdY           RIWLESSPVSPGV
*****
```

Figure S2 CLUSTAL 2.1 multiple sequence alignment of sdY from brown trout (BT), three Tasmanian and one European Atlantic salmon, Chinook Ssalmon and rainbow trout (RT).


```

Atlantic Salmon Ctg_2  TTGT-TCTTAG--GCAAC-----GAATGG-AT-----CATTTCTAGTGA--
Rainbow Trout          TTGTATTTTAAACAGCAACAGTTCCAACCTAGACAGGTATATAAGGGTGTTTTAAATGAAA
Chinook Salmon        TTGTATTTTAAACAGCAACAGTTCCAACCTAGACAGGTATATAAGGGTGTTTTAAATGAAA
                        **** * **      *****                ** ** **          *** ** **

Atlantic Salmon Ctg_2  ---TATT-CAGAGCAT-----GGCTGTGATAAAATTACATGTGGGTGCATTAGGAAACAG
Rainbow Trout          ATATATTTCAAGGTATTTTCATTGTTTGTGTTGCATTTCTTG--GGGCATAAGGGCAATG
Chinook Salmon        ATATATTTCAAGGTATTTCACTGTTTGTGTTGCATTTCTT--GGGGCATAAGGGCAATG
                        **** * * * *      * ***** * ** * ** ***** ** * *

Atlantic Salmon Ctg_2  AGGGTGCACCCAAATGGA-----ACCCTATTC--GATATATAGTGCCT
Rainbow Trout          AAA-TGTACCAATATTGACATATAGTTGCACATTTTCTACGCTTGGCTCCAGGAAAAC
Chinook Salmon        AAAACGTACCAATATTGACATATAGTTGCATATTTTCTACGCTTGGCTCCAGGAAAAC
                        *   * ** * * * * *                **** * *   ** *

Atlantic Salmon Ctg_2  ATTTTTGGTTTA-----CAAAGAATTATAT-----TGTAGTGTCTTCTGT
Rainbow Trout          ATTTCTCATTTGGGTCCTAGGCTGAAAAAGTTTAAAGAACC---TGTAGTGTCTTCTGT
Chinook Salmon        ATTTCTCATTTGGGTCCTAGGCTGAAAAAGTTTAAAGAACCCTGCTGTAGTGTTTTCTGT
                        **** * **      *** **      ***** *****

Atlantic Salmon Ctg_2  CTTTATCCTGTCTGGTACAAGATAAAGTCTGCAAAGAGGAGGAGAAGGGAGAGAGAGTGA
Rainbow Trout          CTTTATCCTCCCTGGTACAAGATCAAGTCTGGAGAGAGGAG---AAGGGAGAGAG--TGA
Chinook Salmon        CTTTATCCTCCCTGGTACAAGATCAAGTCTGGAGAGTGGAG---AAGGGAGAGAGAGTGA
                        ***** ***** ***** * ** **** ***** ***** **

Atlantic Salmon Ctg_2  GCAAGGCCTTGGCCTTCACCTGACAAGAGAGGATTGAGAGAGAAACACTCCCCTTAACTA
Rainbow Trout          GCAAGGCCTTGGCCTTCACCTGACAAGAGAGGATTGAGAGAGAAACACTCCCCTTAACTA
Chinook Salmon        GCAAGGCCTTGGCCTTCACCTGACAAGAGAGGATTGAGAGAGAAACACTCCCCTTAACTA
                        *****

Atlantic Salmon Ctg_2  ATCATTTTACATGAAAAAATGCATATCAAAAACTCCAGCGCATGTTTAAAAACAGTCCTT
Rainbow Trout          ATACTTTTACATGAAAAACATGCTCATAAAAAACTCCAGCTCATGTTTAAAAAGCCGTCCTT
Chinook Salmon        ATACTTTTACATGAAAAACATGCACATAAAAAACTCCAGCTCATGTTTAAAAAGCCGTCCTT
                        ** ***** ** * ***** ***** * *****

| Exon 1
| ATGGCTGACAGAGAGGCCAGAATCCAAG
Atlantic Salmon Ctg_2  AGAGGTTTGAATCCACCTGCCCTTCAATGGTTGACAGAGAGGCCAGATTCCAAGGTACA
Rainbow Trout          AGAATATTTGAGTCCATCTGCCCTTCAATGGCTGACAGAGAGGCCAGAATCCAAGGTACA
Chinook Salmon        AGAATAGTTGAGTCCATCTGCCCTTCAATGGCTGACAGAGAGGCCAGAATCCAAGGTACA
                        *** ***** ***** ****

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Figure S3 CLUSTAL multiple sequence alignment by Kalign (2.0) of 5' sdY sequences of Atlantic salmon, rainbow trout and Chinook salmon.

Table S1 Nucleotide sequences of primers and probes.

Primer name	Sequence 5' - 3'	Purpose
SDY exon1 F	ATGGTTGACAGAGAGGCCAGA	
SDY exon 1 R	CCATCATCAGGGAGAAGGGC	
SDY exon2 F probe	TGATGGATGGGATCCCCGTCATCTCTCTCCCAAAG	
SDY exon2 R	TAGAGCTTAAAACCACTCCACCCTCCATGAGGGA	
SDY exon3 F	AGTTGGAACGCTTCAGCAGAGCAGATGG	
SDY exon3 R	AGATTGGTGCACTGAGTGATGAGTCTTGTC	
SDY exon4 F probe	GACTTCAGGATCTGGCTTGAGTCCTCCCCTGTCTCTCCTGGAG	
SDY exon4 R	ATTTACTGGCTGATTGTCTTCTA	
Contig 2 FISH 858 F	TGTGGGTGCATTAGGAAACA	cloning for FISH plasmid
Contig 2 FISH 5976 R	GACTGTGGGGCTGAGACAAT	cloning for FISH plasmid
Contig 2 6155 F	GGTAGCACTTGTAGCCAGAC	male-female boundary check
Contig 2 6450 R	TGGTGACATGGTGAGTAGTG	male-female boundary check
Contig 2 8297 F	CTTAGAATGTTGGGTTGGAG	male-female boundary check
Contig 2 8473 R	CATTCACAGATCCCAGTGC	male-female boundary check
Contig 2 14711 F	GGCATGTTTGTACAAGAACC	male-female boundary check
Contig 2 15014 R	ACAGGTGATGAAGTAAAAGC	male-female boundary check
Contig 2 18353 F	GAATGCAGCTTTCTTACCTG	male-female boundary check
Contig 2 18680 R	ATATGGTATGACCCAACCAG	male-female boundary check
Contig 1 95417 F	ATTGAACAGGTTACCAGGTG	male-female boundary check
Contig 1 95712 R	TCCTCACTCACACAAGACAA	male-female boundary check
Contig 1 86142 F	GATGCTGGGTAAGTCTGAAG	male-female boundary check
Contig 1 86552 R	CCATTTCTCCAGGTAACCTA	male-female boundary check

Contig 1 42083 F	AGGGAACCGTTGATCTACTT	male-female boundary check
Contig 1 42446 R	TACTGCACATTCTGGTGAAA	male-female boundary check
Contig 1 12665 F	AGAAATGTGGAGCAAGAAGA	microsatellite marker
Contig 1 12947 R	TGTAAAACGACGGCCAGTTGTGTATGCGTTTACTGCTT	microsatellite marker
Exon 1 F	ATGGTTGACAGAGAGGCCAGA	sequencing primer
Exon 1 R	CCATCATCAGGGAGAAGGGC	sequencing primer
Exon 2 F	CCCAGCACTCTTTTCTTGTCTC	sequencing primer
Exon 2 R	CCTGTCTGAAGGTCTCCCTG	sequencing primer
Exon 3 R	AGATTGGTGCACTGAGTGATGAGTCTT	sequencing primer
Exon 3 F	AGTTGGAACHCTTCGCCAGAGCAGATGG	sequencing primer
Exon 3-4 F2a	AAATTCAATTTATGGGACATG	sequencing primer
sdY 3' UTR R (Exon 4 R)	ATTTACTGGCTGATTGTCTTCTA	sequencing primer
sdY 5' UTR F (Exon 1 F)	AGAGTGAGCAAGGCCTTGG	sequencing primer
Salmon & BT 10bp gap R	GTCCGCCTATGGAAATCAATTG	sequencing primer
sdY Exon 3-intron-end F2	TATGAACACAACCAGTCATGATG	sequencing primer