

Inhaltsverzeichnis

Saliva 2

- SA_chrY_I cg27355713 2
- SA_chrY_II cg25012987 2
- SA chrY III cg10213302 3
- SA chrY IV cg05672930 3

Non saliva 4

- SA(-)_chrY_I cg03905640 4
- cg09804407 no Hhal cutting site 4
- cg01828798 no cutting site 4
- cg04351468 No cutting site Hhal 4
- cg14442616 No cutting site Hhal 5

Blood 5

- BL_Y_I cg03416979 5
- BL_Y_II cg14029254 5
- BL_chrY_III cg08265308 5
- BL_chrY_IV cg10363397 6
- BL_chrY_V cg09460641 6
- cg00050873 unspecific 6
- cg14005657 not tested 7
- cg04016144 not tested 7
- cg06322277 No cutting site Hhal 7
- cg15935877 not tested 7

non semen 8

- noSp_Y_I cg02288797 8
- noSp_Y_II cg04964672 8
- noSp_Y_III cg07728631 8
- noSp_Y_IV cg23834181 9
- cg27539833 No cutting site Hhal 10
- cg01053349 No cutting site Hhal 10
- cg03515901 No cutting site Hhal 10
- cg04477336 No cutting site Hhal 10
- cg17115812 No cutting site Hhal 10
- cg26520468 No cutting site Hhal 11
- cg23308414 not tested 11

semen 11

- cg00035864 No cutting site Hhal 11
- cg00479827 No cutting site Hhal 11
- cg04817258 No cutting site Hhal 12
- cg25918849 no cutting site 12

cg08921682 No cutting site HhaI 12

cg08593141 unspecific 12

cg05202434 no cutting site 12

cg15781156 No cutting site HhaI 13

GCGC HhaI /GlaI

CCCGGG SmaI

RCGY GlaI

Saliva

SA_chrY_I cg27355713

GGGGAGGGGGAGTGGAAATCTGTTAACTGAATTAAGGCCGCGCGCGAAGGGAGGAAGGAGCGCTGGGGACTTGAGTACACCAGGGCCCCGTCCTGTAAAG
 CACTGGCAACGCAAAAGCACCTTACAAACCGCCGAGGTCTGAAGCCTGGGAGTGGCGGTGGAGGTGAGTCTCCAGCCTCCTTTCAGTTCCTACACCCAGCTC
 CTGGCTTTTACGCCAGTTTGTCCCTAAGAATTTCTGGCTCTTTTTCTGGGAGGTGTTTTGCAAAGGGGGGAGCCTCTGCCTGTCCCCTTTTTCGAGATGGGAAAT
 GACAACTGGGGTGTCTTCTAAGACGATTTTGACGGAGATACACCCTCGGACAGGTGACGGGAGTTCCTGTGGGGCAGAGGGCGGCTTCTTTTTCGGTTGGG
 GGAAGGCAACAGTCTAGCAGTGGCCAGGTTCCCTCGCCACCTCGGCATAGGGGAGGGGCCGGTTCGCAGTTCACCACCTCCTTAGGGGAAGGGCTGG
 TTCCGGATCTAAACCACTGGGGCGCTGGAGCTGGGGCTGGTGGGAGGCGGTTTCCTCAGCTGGCTGTTGGGGAGGGGGCGGGCCGCGGCGAGTGGGTGCC
 CTCTCGTCTCAGTCTCCCGGTCCSCGTTTGCATGCTAGCGGCCGCTCCAGTGGTGGTACCAGCCAGTGCCAATCCCTTGCGCCGCGTGCATCTCCGCTC
 TGTCTCTCAGCCGCCGCGCCGCTCCAGTGCCTCCCAATTGCGCTCGGGAGTGAGGAGCCGCCAACACCCAGCTCCGCTGCTGCCGCCACCGCAGTGTCTCT
 TAGTCGCCATTGGTTACCTAAACTTTCCAGTACCCCGGACCTTTCCGGGACTCCGCGGGCGGGGGCAGAGGGCGGCCAGGGGGCGGCACCGGGCTGCTCCGGT
 GCGCCGGGCTCTTTTCGGCCGCCACGGCCGGCCTCACAGGCTGCCCTCTGAGAGAGGCTCAGAACACGGCC

- cg27355713 (Speichel 63%, Blut 5%, Sperma 3%)
- cg04042030 (Speichel 18%, Blut 1%, Sperma 1%)
- cg02839557 (Speichel 14%, Blut 1%, Sperma 1%)
- cg01707559 (Speichel 16%, Blut 9%, Sperma 1%)
- cg15197499 (Speichel 18%, Blut 8%, Sperma 6%)

SA_chrY_I for: TM: 64°C, 20 nt

AGTCTAGCAGTGGCCAGGT

SA_chrY_I_rev 60°C

SA_YI_cut1_I, 64°C, 19nt
 GAAACCCGCCTCCACAG

SA_YI_cut1,2_I, 66°C 19nt
 CAGCGACAGAGGGCGGGAC

SA_YI_cut1,2,3_I, 66°C 20nt
 GAATTGGGGGCACTGGAGCG

SA_chrY_II cg25012987

GAGTTACCCGTTCTACCTTAAACATCCAAGTTGACGGTCAAGTCCAAGCGCTCGCCGATGACATCTTATGGACCCAGGGCTCGCGGAAGGACCCAGTTGGA
 TTATCACACCAAGCCGCCACCTTTGCTGCCATCTAACTCCGCCGACCTGCCCGAGTTCCTCCACTCTCCGCTGGTTGACCGGGGCGAGCGGAGAGAGGAGGAA
 AGCACAAAGGCAGTGACTGGTTCATATCCCATCGCCGCGCTGGGGTGGGGAGAGGGGGCCGTGACCCCATCGGCCACCACTGGGCACCGGTGAACACTAC
 TCGGACAGGAACCGCAGGGGGCACACCTCGGACAACTCCTGAGTCACTTCTACCAGGCTCGGTGAATCCAATCTAGCCCCTGGAGGAGTTCACAGCGGG

GTGCGAGGAGGAGGTGGAATCGGAGAGGTGGAAGGAGGAGCAGGGGAGCCACCTCTACCTCAGCAACCCCTG**GCGC**GGCACCTTGAAAGCCCGAGGGTG
GGG**ACGT**GAGCCTCCAATGCACAGCGG**GCGC**CGATGAGCTCTCGCGAGAGACCCCACT**BCGT**GATCCGGGGCTCAGGGGTGGGTGG

cg25012987 (Speichel 88%, Blut 36%, Sperma 10%)

cg16292375 (Speichel 21%, Blut 39%, Sperma 6%)

SA_chrY_II_for TM: 64°C, Länge: 21 bp

SA_chrY_II_rev TM: 64°C, Länge: 19 bp

SA_chrY_II_for_alter TM: 64°C, Länge: 19 bp

SA chrY III **cg10213302**

ATGCCAAAGATGAAACACTGCCATAAAGAACACACTAGACATTACAAATCTTGGTCAAATACT**ACGT**TA**ACGG**AAAAAAAAAATCAATTGGCTCAGTA
ATTGATTAGGATAATCTCCCTCCTCTTGGCTGTACTGTGGCAAGTCCATTACTTTCTTTTTTTTTTTTAAAGCCAACAAAGGAGACAGTGGGGAATGT
ATATGTCTGTATCTGCTTCTCCTCAACCTAGGAATAAAGTA**AACA****CG****TTACTGAGGGCGG**GGGTCTAAGGGCCTGCAACAATGAGATCTGTCGCTTGGC
TAGGACTG**GCGCCG**AGAGG**CG**ATAGGTCT**CG**GGAGAGCCTG**GCGC**AGGGTGTGGGAGATTAGGAATCCAGGTCCACCGGAGATGGCAGGGGGTGGCCTG
GCCCGTGCGGGGCGCTTGCT**GCACGCAACCAACTAAGGC**GGTGGT**GCGC**CAAGTAGTGGTGACGGCGG**GCGC**GCGGAGAAAAGGA**ACGT**TGTGACGGA
AACTCCAGCTGCCGGAGACCCACCGCAGTGAGGTCACTGGACTCCCGGACTCGGG**BCGT**GACCG**GCGC**CGACCCGGG**GCGC**CGA

cg10213302 Speichel 55% (15%), Blut 10% (3%), Sperma 3%

cg02577797 (Speichel 19% (17%), Blut 8% (2%), Sperma 6% (2%))

cg00272582 (Speichel 23% (22%), Blut 6% (2%), Sperma 5% (2%))

cg24837623 (Speichel 22% (19%), Blut 3% (2%), Sperma 3% (1%))

cg27433982 (Speichel 15% (18%), Blut 3% (1%), Sperma 2% (1%))

cg03683899 (Speichel 12% (16%), Blut 1% (0,4%), Sperma 0,3% (0,3%))

cg02842889 (Speichel 14% (19%), Blut 1% (0,4%), Sperma 1% (0,4%))

SA_chrY_III_for TM:62°C 20 bp

SA_chrY_III_rev TM:60°C, 19 bp

SA chrY IV **cg05672930**

GAGAGGTAACACCGAGAAGAGGCGCG**CG**GTG**GCGC**CAAGACGATTGGTGCCAAACAGGGCAGA**ACGT**AACTCAGCTCTGGGGTGGGTTCTGTCCAGAG
GGGTAGAGAAGAGTGGCTGAGG**GCGC**GCCCTGATCTCAGCGGGAAGAGTGCACCCCGAGG**GCGC**CGTAGGTATGAAAGCC**ACGT**GTGGCTGGCACCCGCG
GGGACCC**ACGT**ACCAGGTGTACCTTTCCAGTCCCTGCCGTGCCTTATCCCGGTGCTGGTACCAC**CG**TCTAGGGCTTACTTGGGACACAGGCTAGTTCTCTC
CTGAAGCTATTGAGC**AGTATGTGTTGAGGT****GCGCT****ACGC**CAGTTGAGGTGAAGCTGTTACACAGTATGAAAGC**CG**GGCTTTGTAGCTGCAGCT**GCGC**ATTGCA
CCC**CCAGCT****ACGCAGTCTCCTT**CCTTCTCAGTCACAGGACCGGATGGCAAGTGGCCGACCCAGTCGGTGAGACCGACTGAGCTCTGGGGCTTCAGTTCTTG
CGCTACCTACATGGTACATCTCCAGCCAAGGATGAGAGGTGATGCCAGAGGACCTCGATCTAAATTGGGCACCAATTATCGTATGACA

cg05672930 Speichel 36% (15%), Blut 4% (0,4%), Sperma 4% (1%); **cg17660627** (Speichel 23% (16%), Blut 5% (1%), Sperma 4% (1%))

cg07731488 (Speichel 17% (21%), Blut 1% (0,4%), Sperma 1% (0,4%))

SA_chrY_IV_for TM: 60°C, 20 bp

SA_chrY_IV_rev TM: 62°C 20 bp

SA_chrY_IV_alter_for TM: 64°C, 20 bp

SA_chrY_IV_alter_rev TM:62°C, 20 bp

Non saliva

SA(-)_chrY_I cg03905640

AGCTATGAAATATCTGAGATGAGCAAGTGATTACACAAGGAGACAGAAGCAGTATGACCTTTACCTGTGACCCGGTTCAATTATTTTCAGGCTCTCATTAAACCAG
GCGAGCTCCTCTTTCTCAGAGGTAGGTAAACTTGAGGGGGTAAAGTAGGATTTGGGATTTGGGGATAATGGAAAAGAAAGCCTGGTAATTTTCTTCTATCC
CTGTTTTAAATAAAAAGTAAACATAAATGCCCTTTCTCAGGGCCCAATGTTAGGCAA
AAACAATGTTTGTCTATCTCAGTACACACATGGTCATTTATTTTTCC
CTCTGCATGTTGTGCGCTTTTTCAGTTTATAATGTCCCTGATCCACTTGTCTCATACTAGCTGCAAACAAGGAACTGAATGTCACACCAGGTGGCCAGCATTTC
GTGAAGGGCAGAAACCGG
GGCAGCCAAACAGCTGGCAGAGGCCAGCTAGTAAGTACCTGATGCCACTCCGTAGAGGACTCCACACTTAAAAGACCAATAA
GCAAGTGTGAGGCTGACTCACTTGTATCCCCCAAATAAAAAAATAAAAGTAAACCCCTCCAGGGAAAGTGTGTGTGA

cg03905640 (Speichel 9% (14%), Blut 94% (1%), Sperma 94% (1%)),

SA(-)_chrY_I_for

SA(-)_chrY_I_rev

SA(-)_chrY_I_alter_for

SA(-)_chrY_I_alter_rev

cg09804407 no HhaI cutting site

TGCATCAACACTTTTAGTTATGAAAGAAGTCTTCAAGAGACCAGCACTGAAGCATGTACTTGAATGCACCATCTGTACAGTTTTTTTTTTTTTACAAGAACT
GAGATTGAGAACAGTGAAGTATGTAGCCTAAATATATATGTGCACTTGTAGTGAACAAGGAAAATTCGTGTCCAAAGTCTACACTCTTTTCATTTGATGATTTTC
CCCTTGTGGCCTGATAAATCCACATCACAATGACAGGATGGCCTGGATGCATGCTTCTATTTTGTCTACTGGAAAACCTTTAGATCTGCATGCATATCCCCT
TAGGAAAGAGTGAATAATGCCTTAAACATTTGAGAAAAAGTTCTTTTATAACCGTCTGGTAAACAATAGTGAATAATGGTAGGTGTCATTATTACACTTGCAT
AACCTGTACAATTCTGACGTTCGGTTTGTTCATTCAACATAGATGTGATGAGTGTTTTCTAAATGTCAGGCATTGTTTCTGGTGATAGGATATACAGCCAGGAT
TAAGAAAAGTGTGACACTAGGCATGGTGACTGCGCGTGTATCCAACACTTTGAAAGTTTGATTGAGGAG

cg09804407 (Speichel 9% (14%), Blut 85% (4%), Sperma 88% (2%));

cg08816194 no, saliva 14%, blood 87%, semen 89%

cg01828798 no cutting site

GCCTCCCAATTTACAGTAGATTTATGATCCACATAAAAAATAAACAAGGAGCCCCACAGCTCAAGCCAAGCCGATGGACAGGTCATCAACTAAAGGGTTGG
TGACTCAAAAAAAGGAAGAAGTATTACACACACACACACATACAGATGCCACACAGACATGCGGACATTCAACATTAGCAACTCTTGACAG
AAACACAGCCCACTCCCTTGGCTGTGTGTTTCTGAGGAAACCCCACTCAAGAGAGCCAACCTAAGGTACAGAGGCAGGCTAGAAATCTGACTGTGGC
AAGTTTCAAAAAGACTCATATCTACAACCCCTAGGCAGGCCAAGGAATCCTGCAGATTTTTTGTCTTAATGATTCCACAATTTTCTGGGGTTGATTTGA
CGTTTCTCAGGCTGGCTCTGTCTGCCCTCTTGGGATCATGGAATATCCCATCTATCCAAAAGAAGATAGGCAAGAGTTCGAGCCAAATGCAACTCAACGG
AAGTGACCTTCTCCTCAAGCCACAGAGACTTGGCACCAGGCAACAATAACATCAATTGTGATGCTACCCAGGGCTCACAACAGTCTGGTGCCTGAGACTA
GTGCATGTGATTCTGAGGCAGGATCTGGTGCCAGGCTTACAGCTTTCAGCCTGCCTAAGCAGTGGGAAATGGT

cg01828798 (Speichel 10% (16%), Blut 66% (5%), Sperma 91% (2%))

cg04351468 No cutting site HhaI

ACAGATTGGGATAATGTTGTTTATTTATTTTATTTTATTTTATTTTGTAGACGGATTCTTGCTCTGTTGCCAGGCTGGAGTGCATCA
GCGT
GATCTCGGCTCAC
TGCCACTCTGCCTCCTGGGTTAACTGATTCCCCTGCCTCAGCCTACTGAGTAGCTGGAATATAGGCACACACAACCAGACCG
AGCTAATTTTTTGTGTGTG
TGTTTATGAGAGACAGGGTTTACCATGTTGGCCATTATGGTTTCTTCTCCTGACCTCGTGATCTGCCTGCCTTGGCCACCAAAGTGTGGGATTACATCCGT
GAGCCACCATGCCCGG
CATGATTGGGATAATGTTACAAAGCAAAAAAGCACTAAAGAGCACAGAATGGAATGCTCTTGACTACAATGTAAGGAATCAATAA
TTAATATAATTACATAAAAGTTAAAGCTTTAGTAAACACACAATCTCTAGATTTAAGACTCAACAGGACAAGAGACCATTGGTTGAATCAAAAAGTCTCCTCA
ACACTGGGAAATGAGTAATTAGCTATTCATGTTACATAAATCACTCTGGTGACAGGAAAGAAATGTCCTTA

cg04351468 (Speichel 9% (14%), Blut 90% (2%), Sperma 92% (1%)); RBMY1A3P

cg14442616 No cutting site HhaI

ACCTAGGCAAACGGCATGCTATCAACAAGAAAGGTTTAAAGCTTTGATAAAATGGGGGAGATTTAATCAGTTTTTTAATGCCTGCTATAAAAAATTTGAAATATTA
GAATGGCCGACCATGGCAGTGACCAGGCCTCACTACAGGCCTGGTTGGATTCTGGTCTTTAATGCATGCTAGTGTTGATGTTTTTGGTCAAGAACGGTTTAAA
CAGGAAGGATTGTGCAGCAGGCTTTAATTTAATGTAGATTCACTACTGCTCTGTTAAAGCTGCATTGAAATGTTAAATGGCTTACACTTGCAGACTTGCAGAAATC
TTAAGACTAACAAATCCTTGAATCACACAGCTTCAAATACGACTAAACTGCACAAGGTGTGTGTTCTATATGTGCAGTTTTAATGCTTTAGTTGATAGG
TTCCATGGTATTTATAGTCTCTTGTGCTAAATTTGGCCAAAGATGATTGTCCACCCTAAAAATGCCTCTCCCACTTGGAAATCTGTACTGATTTTGTGCCAGA
TGCAATGATCTTTAAAAACAAATCTTTTCAATGGCATAAGAAGTTGACAAAAATTTCTAAAGTGAATAGATTTT

cg14442616 (Speichel 7% (11%), Blut 94% (3%), Sperma 92% (2%)); DDX3Y (DBY)

Blood

BL_Y_I cg03416979

ACAATTACAGGCTTTACAGAGGCCAACTGAAACTCAGATTATTTACGGCCCCAGACTTCTACATAAACTAATACAATTTATGTCAAATTTGGTAATTCC
CGTCAAGCAAATCAGACATGTGACATGCGCTGACTAAAAGTATAAGTTTTAATAGCCTTGGTTAAATATATTGCCTGTATTTGAAATGATGACCACATTCACAG
AGAAAACCCTGTTTAAATAAAAAGTGCACATGGCGCTTAGCACCATCTCCCACTTGCACATGTCCGACATATCCGACAGTTAAAGGTAGAATCCTCAAG
AAAATTAATGAGTTTAAACAAAATGAGTTTCTAATAGCACTAAGGAGTTCTCTCCCACTGTCTCTCTCTATAATTCAACACCCTC

cg03416979 Blood 91%, saliva16% (max 60%), sperm5%

Blood_Ychr_I forward: TM: 64°C, Länge: 22 bp

Blood_Ychr_I reverse: TM: 60°C, Länge: 20 bp

Tested by MTA students Primer Blast>> viele matches bei 199☺ nochmal neue Primer

Primerpaar 2

Blood_Y_I for_neu

ACCACATTCACAGAGAAAACCCT

Blood_Y_I rev_neu

CGACATGTGGGCAAGTTGTG

BL_Y_II cg14029254

GTAAGCTCTCTCTAGCTCCGATTTATCTGCCTCCATCCTTTGAAGAAGGGCCTTCCATCTTGGAAGCTTTTACTTTTCGGGTACCGCTGCTTGGCGGG
TGGAATGCTGCTGGTCTGCTTCAAGAAACCCGATTTGGAGAGCGGAGGTCTGAAGAGTGCAGCTGGGGTTCCGGGCTGGCCCTTGTGCTCGGCCTGG
GCGCCGGTGGTCTGTTGGCGAGTCTTGTAGGAATAAGCTTCTCGGCTAACCTTACAAGTCCACCCTTGACTCCGACGCCAGACTGGCTTTTT
GGGTTAGCTTATATCCATGTAAGCAGTCTCAGATTGCTTGGAGAGCACTGTGGTGTCTTACAGCAGAGAGACTCG

cg14029254 (Blood 89%, saliva11%, sperm3%)

Blood Ychr II Forward: TM: 66°C, Länge: 20 bp

Blood Ychr II Reverse: TM: 64°C, Länge: 19 bp

BL_chrY_III cg08265308

GCTCTCGGGTCTGTGCTGAGGATAACTCAGCTCCGCCCTCGCAAAGGCAGACAAGCGAGCGCCGACAGCAGCTCAGACAGCGCTGGCGCGCGGACA
GGCGCACAGAAGACCTCAGGCTCAGGTTCCACTCCCACTGTGAAAGGGTAAGAAGTGAAGGTTGGCTGAGGCTGGGGGTTGTTCAAGGCGGGGTGGGCTC
TGGACCCAGCAGCCCTGCACCCAGGCCAGGGCTTCAAGGGAGGCCAGGTAAGGCCAAGATGGGGCCGGGGCTGGTTCAGAAAGATCGAGCGTTGGGAGC
CGGTGGAAGAAAAGAAGCGCGCGGGCGACAGTCAAACAGGCCTTGGGGCAGGGCACGCTCAGCGCTCCAGGCAGCCCTGCCAGCCAGGGCACCTGAGCAGG
GACCGCGCTGCACTGGCGCGCCAGAGAGCTGCTACGGTGTGTTTCTCCCTCGGGCTGTTGGCGGGGCCGTTATGGTGCAGGCTGCTGCTGGTCTCTAA
TGGTCTCTTGGCTTCTGCTGAGAGCGGGAGCGCGTGAGAGTCTGTGCAAGGTCCTGGACAGACTGCATTGCTTGTGCTTCAAG

cg08265308 (Speichel 4%, Blut 90%, Sperma 2%)

cg21106100 (Speichel 24%, Blut 82%, Sperma 3%)

BL_chrY_III_for TM: 62°C, Länge: 19 bp

BL_chrY_III_rev TM: 62°C, Länge: 20 bp

BL_Y_III_for_A TM: 64°C, Länge: 21 bp

BL_Y_III_rev_A TM: 64°C, Länge: 19 bp

BL_Y_III_rev_B TM: 64°C, Länge: 21 bp + BL_Y_III_for_A

BL_chrY_IV cg10363397

TCGTGTTCCAGGGT GCGTGTAT GCGCGT GTTGGAGGGTGCAGGTGGCTCC GCGCGCCTCATTTTCGAGTCCCTAAAGATTCAAGGTCTGTACTACTA GCGTAGAGCGG CAGAGAAGTGCCGGGGACAGG GGATTTGGCAGGACGGTGT TTGGAT GCGC CAGAGACAGGCTCCAAGGTCACTGTCCCCAAACCCCACTTACTAGGT TCTTTTAGCCGGCAGTAGAGGAGTGTGTGTGT GCGCTTGGTCGCGTGTGTGGGAGTCTACGGGAACC GCGCGCTTGGCTCCTGAGGGTTGCC CGGACCCTGC CCCGTGGCATGGACCCCGGGGGCT GCGCGGAGGCTCTGGGTGCGGGTGGGCACACTATGGCAGGTTTCGACTCAGGGGGTGCAGAGTACAGTCTGTG CCTCTCCAGCCCTGTGCAGC GCGGAGTTCTGAAACCT GCGTATATTTTTCACTCTCCTGTATTCTTACCTCTGTCTGTAGGTGCCCA CCTGTTCCAAGTTTC CACCGTCTC GCGCTCAGGGAAATTTGGGGGGACCAAAGGAGAGGTAGTGTCTTGTAGGAAGGCTGGCTTCTGGCTGGCGGG

cg10363397 (Speichel 12%, Blut 94%, Sperma 1%)

BL_chrY_IV_for TM: 64°C, Länge: 21 bp

BL_chrY_IV_rev TM: 64°C, Länge: 21 bp

BL_chrY_V cg09460641

CTGCCTAACGAAGAGAGATGTTTTGTGTGTTTCATGACACATAGAGATG ATCATGGCTTGCCACTCAGGATGTCAGGGCACAGGGCTACCATGCCACAATTC CAAAGACC GCGTAGCC GCGTGTGCTGGACTCTGAGTACCCGGCACAAGTCCAAGGGCTTCTCGGAGGAGGCT CGGGGACGGAAG GCGTGGGGTGTGAGT GGGCTGGAGATGCAG GCGCGCC CGTGGCTGTGCAGCCAGGGAG GCGCCCGCCCTCCATTGATTGGCCATGAGGGGAAGGAAGTCCGCTGGGTGCGG CCCCTTGGCCCTTAGCGCGCAGTCCCTTAGGGGTCTCTGGAACCCG GCGCATGCGGCCCTGAGGGCCGCTGACCCACCGGGTGCC CATCTGCGACAGGGT TCCTATGGCGTGGGTGGAGCAGCAGGCCCTTGGTGTGTGCGGTGCCGAGGAGGGCACTGCCTTCAGGATGGAGGCTGTACAGGAGGGCGGGCCGGGGT GAGAGTGAGCAGGCGGCTTTGGAGTTGGAGGCAGTGTGTTGGCAGATGACATAATGGCGGAGGTGGAGGTGGTGGCCAGGAGGAGGCC

cg00455876 (Speichel 13%, Blut 79%, Sperma 6%)

cg09460641 (Speichel 14%, Blut 96%, Sperma 5%)

BL_chrY_V_forA TM: 64°C, Länge: 21 bp

BL_chrY_V_revA TM: 64°C, Länge: 21 bp

BL_chrY_V_forB TM: 66°C, Länge: 20 bp

BL_chrY_V_forC TM: 64°C, Länge: 20 bp

cg00050873 unspecific

CTGGTCCCCAGGGGACTCAAAGTACTGACTCAGACACTGGACTCCTCCACAGACCCAGGCTCCCCAGCTGACTGCAAATCCATC GCGTAGCAAAGCAGGACT TCCGCATGCTTCCGACCC GCGCGCATCTCGTGTGCAAACAATCTACTCT GCGCAAGAACTCTCCAGAGGATTGGGTGGCAAGCCTCGTG GCGCCTTGC AATTTGCAAGAACACAGACAATGTGGAACAGGGCCATCTCCAGACATTTGGCCAGTACCCTTATTGTTGGCCCTCTATCTGTCTGGCCGAGGAGGCA GCGACAAGTGTGTGTTTTGGAGTGGGTGGACCC GCGCAAGA GCGCTGGGCTGACCAAGACGGGAGGCAGAAAAAGTGGCAGGTGGTTGCAGCTGA GGGACGGGAGGGACCGGGGGTGGTGTGAGGCGGCTGCTTCTGGGTTTCTGAGATGCAGGAGGCCTTTGTGTGCTGGGTGCTGGACATGTCCGCTGATGT CCGGGTGTGTGGTGTCTTATCTAGTCTCCCTGAGGGGTGGGCTGTCCACTGAGGGAAGCCTTGTAGTTAGAAGCCACAGC

cg00050873 Speichel 11% (16%, max: 63%), Blut 89% (1%, min: 88%), Sperma 10% (4%, max: 22%)

cg03443143 Speichel 30% (19%, max: 73%), Blut 92% (2%, min: 90%), Sperma 8% (4%, max: 25%)

sequence not specific

cg14005657 not tested

TCGCCCTGCTGAGAACCTGGTCCCACACCTACGGTGGACCCAGGTTTCTGAGGAGCTCCGCTGGACCCGAGATCCCGACTGGCCAAAGGGCTCCGGTCCCCA
GCAGGCTCAACTGCGCACAGGAGCTCGGGAGCCAGAGGCCCGGCCCTGGGCTTGCAGAGCCCCACCAACAGGCACCCGAACCGCTGCTGCGGGTGC GGGA
GCCTTGGGTGCTCAAGGCA GCGCACACAACGGT GCGC GCAGGCCGACAATGGCCAACCCTGGCGGCTGGCCTCTGGTGTGCCAGGGCATAGGACAAGAG
GCCCTTGGAAATGCTCCTTGGAGTACAGCATCCTCAGGGAGGAAGCATGGTACTCGAGCCTCTATTTGCCCTCGACCTGTGAGAGTGTGTGCCGGGGCTCTGG
CCTTACAGCAGATCAATCCACCTCAGCACCCGGCAGGCGACTTTCCTCCCGCGGCCCGATCACTTCCCCAGGACACCCCTGCCCTTGGCCCCAGC
AACCAGAGAGAGTTCTCTGCATCTGCTGTATTACCTCCGTACCATCTACCTGGCCTGCCTAACGAAGAGAGATGTTTCTGTGTTC

cg14005657 Speichel 12% (16%, max: 56%), Blut 75% (1%, min: 74%), Sperma 5% (1%, max: 9%)
cg09350919 Speichel 19% (19%, max: 73%), Blut 97% (0,3%, min: 94%), Sperma 11% (2%, max: 22%)

cg04016144 not tested

CTGCGCAGCCCAGCCCAGCCCAGCCCATGCCCGCACCCGTAGGCTCTGGGGGCCCGCTCCCAGCAGACCCGCTCCCTGCAAGACCCACGGCGCCCTG
CTGTGAACCTGGTCCCACACCTACGGTGGACCCAGGTTTCTGAGGAGCTCCGCTGGACCCGAGATCCCGACTGGCCAAAGGGCTCCGGTCCCAGCAGGCT
CAACTGCGCACAGGAGCTCGGGAGCCAGAGGCCCGGCCCTGGGCTTGCAGAGCCCCACCAACAGGCACCCGAACCGCTGCTGCGGGTGC GGAGCCTCTGG
GTCGTCAAGGCA GCGCACACAACGGTGTGTGCAGCGCGACAATGGCCAACCCTGGCGGCTGGCCTCTGGTGTGCCAGGGCATAGGACAAGAGGCCCTTTGG
AATGCTCCTTGGAGTACAGCATCCTCAGGGAGGAAGCATGGTACTCGAGCCTCTATTTGCCCTCGACCTGTGAGAGTGTGTGCCGGGGCTCTGGCCTCTACAG
CAGATCAATCCACCTCAGCACCCGGCAGGCGACTTTCCTCCCGCGGCCCGATCACTTCCCCAGGACACCCCTGCCGCCCTA

cg04016144 Speichel 14% (19%, max: 90%), Blut 95% (1%, min: 93%), Sperma 9% (9%, max: 42%), TSPY4

cg06322277 No cutting site HhaI

TGGCCCTAATTCAGAAAAACGAATTGTTTCTTAAATCATGATTTTACAATACAACATGTCACAGTCAACAAGGAATCATACAGGTTATTTCTTAACGATTGGCTTTT
TTTTTTTTAAGGCGGCTAAATCCTGCTCCTCAGAGCTTCTGTTAAATATTTTTAAAGTTGGCGAAAGATAATTTTTAGAGTGAAACTCGCTCCAGCTTAG
CCGACCTGAGGGGAGGAAGCACAAACAAAAGTCCCGTGGCATAACTGACACCTATGAATCAGTATCAGAACTGAATATGCTAAGAACTCAGTTCAGGCTG
TGACCTTACAACGGAAGAATAATAGTTGTTACCGAGGCGGAATCTGGAATGAAATTCTCACTATTTGACTTCCCGCTGTTTATCACCGCAGATTACGGT
TGCACCGTAAAAGGAGAGGTTCTGTTCCGTCGCGGGATTTCCGCATGGTAAGCGCTGCGTCTAGCTCCGGATTTATCTGCCTCCATCCTTTGAAGAAGGGC
CTTCCATCTTGGCAAGCTTTACTTTTTCGGGTACCGCTGCTTGGCGGGTGGGAATGCTGCTGGTGTCTTACAGGAA

cg06322277 Speichel 14% (15%), Blut 96% (1%), Sperma 1% (1%), RPS4Y2

cg15935877 not tested

TCTGCCACCCCGCGGGCTCCACCTCAACCACCACCTCCACCTCAGCCATGATGCTTCCACCTTCCAGCACCGCTCCTCTTCAAGGCCGCTCCTTGTCTGT
ACCCCGGCCGCTCCTCAGCATTGCCTCAGCCTGAACACGGTTTTCTCTGGGTGCTCCACAGACCCCTGGGCTGCGCAGCCCAGCCCAGCCCATGC
CCCGACCCGTAGGCTCTGGGGCCCGCTCCCAGCAGACCCGCTCCTGCAAGACCCCGCGCTGCTGTGAACCTGGTCCACACCTACGTGGACCCA
GGTTTCTGAGGCGCTGCGCTGGACCCGAGATCCCGACTGGCCAAAGGGCTCCGGTCCCCAGCAGGCTCAACTGCGCACAGGAGCTCGGGAGCCAGAGGC
CCCGGCCCTGGGCTTGCAGAGCCCCACCAACAGGCACCCGAACCGCTGCTGCGGGTGC GGAGCCTCTGGGCTGCAAGGCA GCGCACAAACAGCGT GCGC
AGGCCGACAATGGCCAACCTGGCGGCTGGCCTCTGGTGTGCCAGGGCATAGGACAAGAGGCCCTTTGGAATGCTCCTTGG

cg15935877 Speichel 15% (12%, max: 60%), Blut 92% (1%, min: 90%), Sperma 5% (4%, max: 25%), TSPY1 (TSPY4)
cg05544622 Speichel 16% (18%, max: 52%), Blut 98% (0,3%, min: 98%), Sperma 4% (6%, max: 30%)

non semen

noSp_Y_I cg02288797

TCTGAACTTTAAGAAGCAAGGCA **SCGT**CTTCCAGAGCTTGTAGTTAGGGCCGTTTCAGAACAGACTTCTCCATGGGCTTCCAGGCAGTGACAGGCTCAGACACTGCTATTGGGAATAGCCAATGCTATTCCGAAGAAACAAGCCATTGAGTTTCAGGACTATATTTTACAAAAGGAAACTGGTGAGAACCAAGGTCCCCTTCACTTGCTGTAATACACCCCTCCAGCAGCTGAGGCTGGTATCTCCATTCCTCCAGCCCCAGAGAGACTGGGCGAGGGAGTGAGGGGGAGACTTGGGGTTTGGGGCAATCCTG **CG**GTCAAAGTGGGGTTCTCCCAAGTGCAGACCAATCTCTACCCATGCCAGTAGGAACAGGCAGGCTGAACTGAAG **GAGCTTGAGCTACTGACCCG**ACATGGTCCGTG **GCGC**CGC **ACCG**AGTGG **GCGC**GGACCCGAGACCT **GCGC**CCAG **GCGC**AGTG **GGTGGAAATAAATCCTCGTCAG****GAACCCG**CAGAACAGAG **GCGC**CGTCTTTGGGAA **CCCGCGTGGATTCCAGGC**CTGGGGGCGACA **SCGT**GGCTGCCTCGACACCTCGGCTGCAGGCCT

cg02288797 (Speichel 87%, Blut 87%, Sperma 9%)

noSp_Y_I_forA TM: 64°C, Länge: 20 bp

noSp_Y_I_revA TM: 66°C, Länge: 22 bp

noSp_Y_I_forB TM: 64°C, Länge: 22 bp

noSp_Y_I_revB TM: 64 °C, Länge: 19 bp

noSp_Y_II cg04964672

TACATGCTCACAGAGACATACAGGGGCATATACACAGACATATACATATGCATACACACACCAAACACACAGATACACACAGAACAGACACCGAGGCACACAGACCCACACCCAGCCACTCACCATCTTTGTAAGGGGAACAGTACTTTTCAGAGTCTTCAGACCTACTTACAGCCGCATCCCTCCTTACATGAACTGGATCCCATGCCGCGGATACACCCAGCCCTGTGACCATCAGAGGCCCTGTCTCCCTTTCTTGAGGGAGCCACCCCTACCTGGCTCTCAAACCTATTCTCTACCTGGAAAACATAAAGCTCTTATGACCGTCCACACCATCGTCCAGCAAGCCTACTGGACACACAACCCGACTTTA **SCGT**CCAGTCTCTCCGGAACCTCCCTAAAGGAATCTAAACAAGGACCACTCCAAGCCGCA **SCGT**G **GAAAGCCGC** **CGTGGTGCTAC**CAG **GCGC**TACCGTGGTCCGTCTACCATGTG **CGTCCACAGTCCGTTGAGACTC**CGGCAGGAAGCCTCGTCCCTGGCAGTAGACAGAGCCTTTTCCCAAGCTTTCTGGCTGCCGATCCCGCTGCTTGGTG **TCCACCCCTCTGCTTGGGAGGG**AGATGAGAGCCCGCCAGCGAGCTACCGCACATGGCTCTGGGTCCCGC **ACCG**TGGCCGGGAAAGGAAGCACCTTA

cg04964672 Speichel 62% (8%, min: 54%), Blut 84% (12%, min: 60%), Sperma 3% (5%, max: 25%)

Sp (-)_chrY_II_for TM: 66°C, Länge: 20 bp

Sp (-)_chrY_II_rev TM: 64°C, Länge: 20 bp

Produktlänge: 71 bp, 1 Schnittstelle, keine Nebenprodukte

Sp-**_Y_II_lalu_r**

PCR Produkt: 153bp

noSp_Y_III cg07728631

CACTACCAGG **ACGT**CACCGTCTACCTGGGAGACACCATTACAATGGAGTGTCTGGCGAAAGGGACCCAGCCCCCAAATTCCTGGATCTTCCGTGACAGGAGGGTGTGGCAAACCTCTGTCTCCGTGGAGGGCCGGATCACCTGCACAAACCCGACCTTTCCATCAAGGAG **SCGT**CCTTCTCAGACAGAG **SCGT**CTATAAGT **GCGT****GGCCAGCA** **ACCG****AAACCCG**GGCGGACA **SCGT**GTCCATCCGCCTAC **ACGT**GG **CG**GCACTGCCCCCAATTATCCACCAGGAGAAGCTGTAGAACATCTCGCTGCCCCGGGGCTCAGATTACATTACTGCACTGCCAAAGCT **GCGC**CCCTGCCAGCGT **CTCTGGGTGCTCGGGGAT**GGTACCCAAATCCCGC **CCCT** **CGCA****TTTCTCCACCG****GAAC**TTGTTTGTTCCTCCAAACGGG **ACCG**TCTACATCTGCAACCT **CGCG**CCAAGGACAG **GG****GCGC**TATGAGT **GCGT**GGCCGCCAACCTGATCGGCTCC **GCGC**GCAGTACGGTGCAGCTGAACGTGCA **GCGC**GCAGCAGCGAACGTGCA **GCGC**GCAGCAGCGAACGTGCA **GCGC**G

cg07728631 (Speichel 90%, Blut 84%, Sperma 6%)

cg05213048 (Speichel 65%, Blut 71%, Sperma 7%)

noSp_YIII_forA TM: 64°C, Länge: 19 bp

noSp_YIII_revA TM: 64°C, Länge: 20 bp

noSp_YIII_forB TM: 66°C, Länge: 20 bp

noSp_YIII_revB TM: 64°C, Länge: 19 bp

Sp-YIII_la_f TM 64°C,

Sp-YIII_la_r (reverse primer not Y spezific), TM: 64°C

CAAATTCCTGGATCTTCCGTGACAGGAGGGTGTGGCAAACCTGTCTCCGTGGAGGGCCGGATCACCTGCACCAAACCGGACCCTTTCATCAAGGAGGC
GTCCTTCTCAGACAGAGSCGTCTATAAGTSCGTGGCCAGCAACGCAACCCGGGCGGACA SCGTGTCCATCCGCCTACACGTGGCGGCACTGCCCCCAATTATCC
ACCAGGAGAAGCTGTAGAACATCTCGCTGCCCCCGGGGCTCAGCATTACATTACTGCACTGCCAAAGCTGCGCCCTGCCCA SCGTGCTC

Sp (-)_chrY_III_forA TM: 64°C, 19 nt

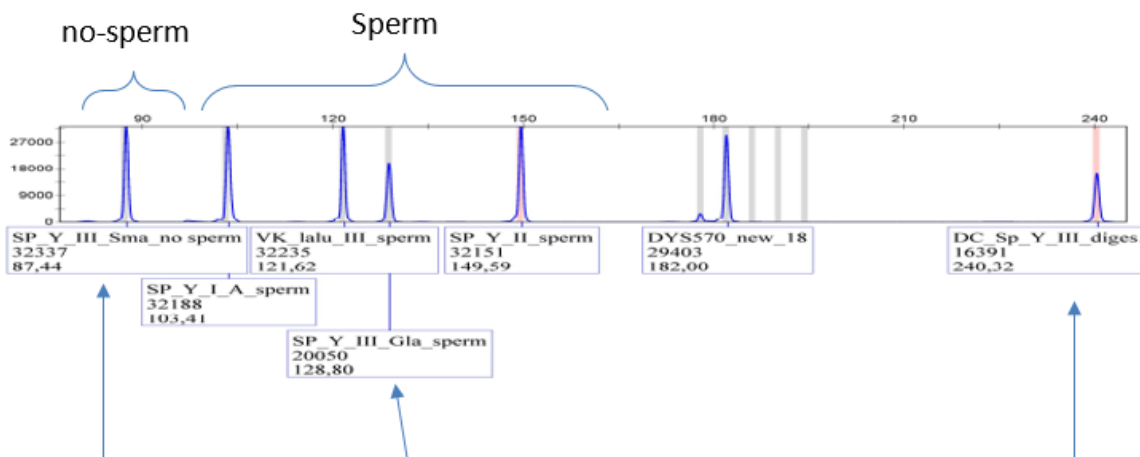
Sp-YIII_Glu_rl TM: 66°C, 22nt

Sp-YIII_Glu_rll TM: 64°C, 20nt

Sp-YIII_Glu_rlll Tm 64°C, 22nt

Sp-YIII_sma_for TM 64°C, 18nt

SmaI / GluI Digestion



Not a real digestion control, will be cut by either SmaI or GluI.

TGGCGGCACTGCCCCCAATTATCCACCAGGAGAAGCTGTAGAACATCTCGCTGCCCCCGGGGCTCAGCATTCA
CATTCACTGCACTGCCAAAGCTGCGGCCCTGCCCAACGCTGCTCGGGTGTCTCGGGGATGGTACCCAAATCCGCC
CCTCGATTTCTCCACCAGGAACTGTTTGTTCCTCCCAACGGGACGCTCTACATCTGCAACCTGCGCCCAAGG
ACAGCGGCGCTATGAGTG

noSp_Y_IV cg23834181

AGGTCGACTAGGGAGATTGCCCCCTAATGGTATTTACCTTAGACCTCGGTGCTTGAGCTGTAATCATTCTAGAACTACTCTTAACCATGTCAATTATCCACAA
GTGTGTTTACTCAGTTTGTGTGTTAATTGTATACGAAATAAATGCCTGGAGTGCCAGCTGCTCAGGGCCGCCGAGTGACAAACCTCTTGGTGTGCAGGCG
GTCGGACACTCAGCTGGACAGGCAAAGCAGAATACCTTCTGTCAAGTACGTTTCATTACATACATCGTTTGGGTGAGGGTCTCCGCCAGATACCCGAGCTA
ATGCCCTCAAGTGTGAGGTGCAACACCTCAAGGCTGGGACCGCTCAAGGTGCAAGCTGGGTAAAGAGAAGAGAGGACTGAGGTCCGGCCCCACC GCGCTC
TGTGTAGAGGACGAAAGCCAGCGCGGGCCCGGTGTCCCAAGGCACC GCGCTACGTGCCAGGTCCCAACATAGGGCGACCGGAATCAGGTGTTGGG
GCCGCACAGACTCCGCGACCACTGCACCACATCGGCCAGCCCGCTG SCGTGTGTTGACGCTCACTTTGGGGCCGGTCTC

cg23834181 (Speichel 68%, Blut 71%, Sperma 7%)

cg25667057 (Speichel 23%, Blut 83%, Sperma 8%)

noSp_Y_IV_for TM: 64°C, Länge: 21 bp

noSp_Y_IV_rev TM: 64°C; Länge: 20 bp

cg27539833 No cutting site HhaI

ACCCATCATTGGCCACAAAACGGGCAAAGATGCCATGCCACCCACCTGCAGAGCACCGAG **BCGT**CTGTGCCGGCCAAGTCAGGGCCAGTGGTCCAGACAAT
GTACAAAGCCTGCCCTGTGGCCCTTGCCAAAGGGCCAGATGTCAAGAGAGAAGCAACCAGATCCGGAGTCGGCCCTAGCCAGAAGCTCACCGGAATAGCC
CAGCCAAAGAAAAGGTCAAGATTTCTATCACTTCCCCGTCTTCCAGAACTTGTGTCTCCAGAGGAGT **ACGC**CGACTTCAGCAGCTTCTGCTGCTAGT **CGAT**
GCAGCAGTACAAACGGCTGCCGAGCTGGAGCTAGAGAAGAAGCAAGAGCCTAATCCATGATTGATGATGTTCCAAAACCCAAGTAGTCAGTCCCTTGTGTAC
TGTGGTAAACCTGTTTATGTTACCCCAACTATTGTTATGCTTATCTTTTATAGAGGCATCTTTCTTCTACTGGTTTTATGAGTACCAATCTTAATTATTGGGACT
AAATTCTGTGAGATTTTCAAGTGTTCAGGTGAAAGACACTAAGGTGCCATCATAATGAACACTGCAGCAAAGATTTCTTAACCTCCTTCTCCTGGATTGAA
CTCTTAGACCATCAGACTAGTACATCTGAGATTAACATCAAGCTGAGATTTAGAGATAAATGTTTTGGCT

cg27539833 no, saliva 92%, blood 93%, semen 6%

cg01053349 No cutting site HhaI

AGTGAGCCGAGATGCCGCTTGTGCCACTGCACTCCAGCCTGGGCGACAGAGCGAGACTCCATATCAAAAAAAAAAAAAAAAAAAAAAAAAAAGACAAAGACA
AAGATTTTAAGCCATAGAGAAGAAAATTTAAGCAGCAAGGCATCAAAAGCAAAGTCTAGTTCAAAATTATTATTAATATCTGCTTTGAACATGGAAGAATG
GAAGAGGGGAGTCA **ACGT**ACAGTAGTTACTCTTTTATTGAGTTTAGTAGCTAATCAACAATTTGTTCTGATATATCTAGATGAGCCAGTGAGACAATTATAA
GTAATAA **CG**GGAAGAACAATACCAGAGTAAATCAAATAGGAAGAAAGTGATAG **BCGT**ATTACACTAATAGAAATAGAGTCCGTCAGTTAGTGAAACTGG
TGACAAACAGCAGAGAAAACCTGGAGAGCTATAAACT **BCGT**GAAATGAAGTGCATTGGAAGTTACAGAAAAT **ACGC**AAGAACAATGGGAGAAGAACTCCAG
AAGTGTAGGGGAGGGGCA **BCGT**GGAGAAGAAAGGATGTG **ACGT**CACTGAGATAACCAGCTCGGCTGTAGCAACTCTGTAGCAAA

cg01053349 no, saliva 84%, blood 87%, semen 5%

cg03515901 No cutting site HhaI

GACAATTATAAGTAATAACGGGAAGAACAATACCAGAGTAAATCAAATAGGAAGAAAGTGATAG **BCGT**ATTACACTAATAGAAATAGAGTCCGTCAGTTAG
TGAAACTGGTGACAACAGCAGAGAAAACCTGGAGAGCTATAAACT **BCGT**GAAATGAAGTGCATTGGAAGTTACAGAAAAT **ACGC**AAGAACAATGGGAGA
AGAATCCAGGAAGTGTAGGGGAGGGGCA **BCGT**GGAGAAGAAAGGATGTG **ACGT**CACTGAGATAACCAGCTCGGCTGTTAGCAACTCTGTTAGCAAAGCTG
TTTGTCTTTCT **CG**GAAACAACAGGTGAGAATTTCCCTTACAGACCTGCCATGCTTTCTAAAGTGGCTCTCCAAACCTACCTTTGTCTTAACCTCAGTTGTCTGTG
ATTCTCAATATAGTAACGATAAGCCTCTTTGAATATGGAGGCCGCTGCAGACGCCCGGCTGAGACCCAAAGCCGGTGGA AAAAGACAGCCCGCGGAAGAC
CCAAAGCCAGCCCAAGACACCTCAATCATGTGAGAAATA **ACGC**AGATACAGGCAGAGTCTTGCCTTACCAGAGCACAAGAAGAAG

cg03515901 no, saliva 89%, blood 90%, semen 4%

cg04477336 No cutting site HhaI

CTGTGAGAGAAGACCAATTTGCTTTGTTGCGGATTTCTAACTGGTTTATCAATGCTCGCAG **ACGC**ATTCTCCCGGATGCTTCAACA **BCGT**AGAAACGACCCC
ATCATTGGCCACAAAACGGGCAAAGATGCCATGCCACCCACCTGCAGAGCACCGAG **BCGT**CTGTGCCGGCCAAGTCAGGGCCAGTGGTCCAGACAATGTAC
AAAGCCTGCCCTGTGGCCCTTGCCAAAGGGCCAGATGTCAAGAGAGAAGCAACCAGATCCGGAGT **CG**GCCCTAGCCAGAAGCTCACCGGAATAGCCAGC
CAAAGAAAAGGTCAAGATTTCTATCACTTCCCCGTCTTCCAGAACTTGTGTCTCCAGAGGAGT **ACGC**CGACTTCAGCAGCTTCTGCTGCTAGTCTGATGCGAG
CAGTACAAACGGCTGCCGAGCTGGAGCTAGAGAAGAAGCAAGAGCCTAATCCATGATTGATGATGTTCCAAAACCCAAGTAGTCAGTCCCTTGTGACTGTG
GTAACCTGTTTATGTTACCCCAACTATTGTTATGCTTATCTTTTATAGAGGCATCTTTCTTCTACTGGTTTTATGAGTAC

cg04477336 no, saliva 92%, blood 91%, semen 5%

cg17115812 No cutting site HhaI

CTGCAGAAAGGCACTATCGTCCGTGGGAGGACTCCAGCCTTACCCTTTTTCTCGGGCTGCCTCAATGCTCCTTACGAAGACTGACATGCTCTCCCTTC
CTTCCGGGGCTTTCTTG **ACGT**TTTGGTTATCCCCGTGGGCGAGAA **ACGC**ACCCTGAGTGCACACCAGGTATCCACGGTCCCTCGGTTCCG **GCGC**CAGAGGCTGC
TGGAAGACACTGTCGTCCGTGGGAGGATCCCTGCCACCGCTTTTTCTGTGCTGCCTCAGAAGTCTTCTTTCAAGCCTGGCATCTTGTCCCTTCTTTAGGG
GCTTTCGTGTTGCTTTGAGATGCCCTTGG **BCGT**GACCG **CG**CAGCTGGGTGCAAGGCAGAAGCTCCACCCTCGCTGGCCGGAGCAGGGTCTGCCAGGAAG
GCACTGTTGCCATGGGAAGTTTTCTTGTACTGTCTCA **ACGT**CCCCTTCAAGCCTGGAGCTCTGTTCCCGTCC **CCCGGG**GGTCTTCTGCCGCTTTGAAGTGC
CCCATAGGCCTGACACGGACCCTGGGTGCAAGACAGGGACTCCACGACCACCCCGGCCCAACACAGGGGCTGCC

cg17115812 Speichel 74% (10%, min: 48%), Blut 78% (8%, min: 58%), Sperma 6% (2%, max: 11%)
cg14151065 Speichel 13% (20%, min: 0,3%), Blut 86% (3%, min: 80%), Sperma 5% (2%, max: 9%)

cg26520468 No cutting site Hhal

CACCCCCGCCTGGGAGACAGACAAAACCTATCTCTAACAAATGAAATAAACATAAAAAAAGCTTTAAAAACACTAAAACATTCTACCTTCTACACTTGCTTTT
GCTGTCTGGGTGATAAAGTGGAGACTTAGATTAACATAATTTGCTCATTGAGCATTATCAAGAAGGCACAGTTTATGCCAAAGCTTACTATGTTAATTTTCTCC
AGGAGTTCTTATGACTCCGAATACCAGGATACAACGGTTTGAGGTTCTCAAGAACGGTACCTTAGTATAAGGAAGTTTCAAGTGCAAGATCGAGGCCAGTAT
ATGTGCACCGCCAGCAACCTGTAACGGCTGGACAGGATGGTGGTCTTTCTCTGGGTACCCTGCAGCAACCTCAAATCCTAGCCTCCCACTACCAGGACGTCAC
CGTCTACCTGGGAGACACCATTACAATGGAGTGTCTGGCGAAAGGACCCAGCCCCCAAATTTCTGGATCTTCCGTGACAGGAGGGTGTGGCAAACCTCTG
TCCTCGTGGAGGGCCGGATCACCTGCACCAAACCGGACCTTTCCATCAAGGAGGCGTCTTCTCAGACAGAGGCGTC

cg26520468 no, saliva 96%, blood 96%, semen 9%

cg23308414 not tested

GCCAGAGATCAGGTGTCTCAGGGCGGTAAGGCCTTAGACACCCGAGTGATACCTGGCTGACACAAGAGCCTGGCCCACCATGCCGCCAGACTCCAGGCATT
ACCGCACTCAAAGCCACGGCTGGATCGGGACAACCTCTAAGCCACTCCTCGCTGCTGCTCGGCTGCTCTCCCTCCACGGCAGCACTGTGGGCCAC
CGCGTGCACCTTCTGCCGGCTTCAAGGGCTCCAGCCATAGCAGACAAGGCCATGCACTGGACCATCTCGCGCGCGCCCTGCTGCTGAGTGAGGACGCGCAGA
GGTGTCCATCCGCTGCACAGACTTCGGGCTCTCTGGTGGTCTCCATTCTCCGACGGCTCAGGGCTCCCAAGGCTCATGAACTCCAAGCTTCCACCACATCG
GGCTTGTGAGCTTGTCTCCAGGAGTCAGGGATACCCTTCTGCTCCTTGCACGGAGGGATTGTTTTGGTTCCTCGCCGCCCTCCTGCAAGGCCCTCCT
TCTCTACCCACCCAGTGTGCCAGGGCTGCTCAAGGGTGAACAGGTGGCTAGCCCCATGGGCCCTTTCTTTACAACG

cg23308414 Speichel 77% (7%, min: 58%), Blut 75% (6%, min: 65%), Sperma 11% (2%, max: 18%)
cg10252249 Speichel 36% (22%, min: 0,2%), Blut 98% (1%, min: 97%), Sperma 5% (2%, max: 14%)

semen

cg00035864 No cutting site Hhal

AAAGTTGGAGTATCCACCTGAACACTGGGCCATGGTGTGGACTGCTTGTGCAACTAAGAGAATGTGGGGATGCAGTTTAAAAACACCTCTGTTTCACTGTCTT
AACCTTTTTGCTGGTGAAGGTACAGGGCCCATCAACCCCTACCAAATTATATTTTACCTGTTTGACCTATTGCAGCTCACAATCTCTTTCCAGTTTGAAT
CCAAAGATGATGGAGGAGTCCCGCTCATGATGTGAAGTACCTGCTCAGCTGAAACCGAATTTGAGATAAATTAAGGGTCTATGTGGACAAGACTGCTAGT
GTCTCTCTGGATTGGTCATATTGCAATGAAACACCAGACGATGTCTGTTCTGGGTGTTGTATTCACTCTTTTCTAGAAGAGTGCCTTATTTGCAGGGGA
AGATAATGGAGACCCTGGCTGGTCAACTAGCCTACCTGTTTATTGTGGATTATGACCCACAGAAACATAAAGAACAGGGAGCCACAGAGCCACAGCCC
AAGTACAGCCACACAGACAGGCCACCAAAGGTTAAGACGCTAAAAAATAAAAAGCCCTGCAGTGTGTTAGCCACATT

cg00035864 Speichel 14% (19%), Blut 24% (2%), Sperma 77% (4%)

cg00479827 No cutting site Hhal

TGTAAGTAATGGAGATTATTCTATGTGATCTTAGTGGGTCTGACTCTGTTAGCAAAAGGCATTAAGAATAGAGGTGCAGCTTCCCTGGCTGGAGAAGATTCTG
CTCATGGACAGGAGCTTCCACTCACTTCTGAGAATCCAGCTAGCGTTTCTTGCCTTATAGATTTAGGAATGCCTCATCAGTCCATGATCACATAGCCAATTCC
TATGTCTTCTTTTCTATCTCCATTGCCCTTCTGGATTACCTGAACTGACACATTCACGTTTCGTAATAATTTACTGCGAAAGTCTTACCGTCTTGCAGCTTCTTTG
CAAACTGTAACCTCCCAAACCAACCTTGCAGCTCCATTTTTTAAAGTAAATGTTTCTTTTTCATACTTTGTTCTTGTGGGAGGATACATTGAGATGTGAA
ACATTGTGTTTCAAATGAATGGGGGATACGATTGACTATGTCCCGACCAAACTCATTGTTGAAATGTAGCTGCCATAATCCCTACCTGTTGTAGGAGGGACC
CAGTAGTATAACTAAATCATGGGGGAGATTTCCATTCTGTGGTAGTGAATAAGTACAAAAATATCTGA

cg00479827 Speichel 12% (17%), Blut 33% (7%), Sperma 86% (4%)

cg04817258 No cutting site Hhal

AACATTCTCAAGGATGTGTGACTCTGTGTCTGTGTGTGTGTGTCTTTGTGTTTGTGTGTGTGTGTGTGTGTGTGTGTGTATGTTTATCCACTTTATTCGGGTGT
CATAATGAATTGATCAATCCACGTGCTTTATTCTCTTCATGAAATAACCAGTCTGCGTGGAGCTGGGCCTCTAAAGTTGTAGAGTGAATGGGTGTGGGATG
GTTGGGATTCTTCTACAGGACAGAGTGGGAGAGGTAAAAGCAAAGACAGCTTAGTTGGAGGCTGACTTCCTCTATGGAAGCAGAGATAGTTCAAGGAAT
GGGGTACTGGGTTCCAGGGCCAGTTTGTGGGACCTCCAAATCCTTCATTTTGGGTATCATCATACACAGTAGCTAAGCACAGGATGATGGAATCTTAA
AGTTGCTTTTGTGTTGAATCCACATGTTCTTTAAAGGTGAATGCATGATCCTTTTCTGGGACAATCAGCCTCTCAGGACTTCTAAAACATCAACGTGAGAAGA
AATGGGCATGTAAGGTGTATGGAGGGACTGTGGGAAAGGTGACAGAGGCATGTGGGAAGGCATTCAGGATACGGTTTTTGG

cg04817258 Speichel 16% (21%), Blut 36% (1%), Sperma 74% (2%)

cg25918849 no cutting site

AGCCAGACATCTTTGCTAAAAATGCCTCTGGGGTCTCAGGTATGATGCTATGACCCAAAGAACCATCAACAACACACCAGACAGACTATATGCCAATCACCA
TGGGACCCGATTCTTGCAGACACACATCTCTTTTGGGAATGGATTTCAAAGGGCAGTTTTTCACTGACCACCTCAGAGTCTTGAACACCTCATCTCCATCAGG
ACACAACCACAGAGATGGTCCAAATGAGCCCTGAGGTCCAGGCTTTTATTGCTCTGCCATGGGTCTTACAGGCAGCCTTTTTCTTGATACCAGGCCAGCTCCG
ACTGTACCATTTTCTCTGCTTAGGCAGGCTGAATGCTGTTACAGCAGGACACATAAGCCTGTCTCAGGAATCCACATAAGCTAGTCTCAGGGCACCAGTCTG
GTGTGAATCTGTCTAGAGTACAGTGAATGCTACTGTTGCTAGCGACAAGTCCCCGCGCTTTGTGGAGAAGACTCCCAAGGAGGAGACCTCCATGGAGGT
TCGTCGGCTGAGGTCTCTACCTGTCTACTCTGTGAGATCCACAGGATAGTCCATAATCCTAGGATAGGGAGGATGTGA

cg25918849 Speichel 17% (14%), Blut 31% (3%), Sperma 80% (2%)

cg08921682 No cutting site Hhal

AATAACTGTCTAACATACTTTCTGCCTGTGTTGGGCACTGCGGCTTAGAAAGTGAAGGCTTATAATTGTTTCTTCTGAGATGTGTGTGGTTTCAACACATGTCC
TCCTTCAAAGTCATCCATAACAGACCTGGGTAATTGTGTTTTATTGACTCTCAGTCTTAAACTGGTTGGTAAGATTATGAGGAATGTTACATTAGGGGCGTTC
ACCATTGAGGTTCTTAGGCAGGAAGATTCCACACCCAGAAGGGACTAGGCAGTTGTTCTCTGAAGTAGAGGTGGGAAAATCTGTTGTAATCCAGAAAGGACT
AGAGCAGGCTCAGCAAACGTGGTCTGTGATGGACCTGATAGTAAGGGGCTTAGGATTTGTGGGCCAGGCAGTTGCAGCTGCTTTACTCTGCCATTGCATTATG
AAGGCCCTACGGAGATGAATGAACATGGCTCAGTGCCAAGAAAACCTTTATTTATAGACATTGATACTGGGTTGCAGTTTGTGACTCTGACCTAGAGCAACACA
CTGTTTTTTTTTCTTTTATGCTTTTTATTTTTATTTTAAAGTACTTGGGTACATATGCAGGATGTGCAGATTTGTATC

cg08921682 Speichel 15% (20%), Blut 53% (5%), Sperma 93% (1%)

cg08593141 unspecific

TCCAGAAGCTGAGGAAGTGGAGGTTGCAGTAAGCTGAGATTGCGCACTTCTACTCCAGCCTGGGTGAAAGAGCGAAACTCTGTCTCAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAGGAAGATGGGCCGGATGCAGTGGCTCAAGGACTGTAATCCCTGTACTTGAGGCAGGCGGATCATTTGAG
GTCAGGAGTTGGAGACCAGTGTGGCCAACATAGTGGAAACCCATGTCCACCAACTCATGACACCGCATGTGGTGTGTTTAACTACTTGTAAAGGCTGGGCTA
CAAGAAGTCTTAGGAAGACTCTTTTTCTACAGGGTACCCACACCTCCAACCTCTGCAAATGAGCCCATCCAGAAAGCTGTCTCTGGAGCACATGCCTGTTTCC
ATCTTCTTGCACAGTTTCAGGCCATGTTAAGGATGGGAGAAGATTGCCTGGCCTCCAGCCTGGATGCCAGCCAGGTATGTGGACTTCAAGTATGAAAGCT
GTCAGGCTTTGCCTCAGGAGAGCACAACTTATGCACTTGTGGTATAGGCAGTACTCAGATTCCCTGGGGCTGTGACCTGCTGT

cg08593141 Speichel 25% (21%, max: 65%), Blut 56% (4%, max: 62%), Sperma 92% (1%, min: 90%)

cg05202434 no cutting site

GCAGCCAATGCAACTCAACGGAAGTGACCTTCTCCTCCAAGCCACAGAGACTTGGCACCAGGCAACAATAACATCAATTGTGATGCTACCCAGGGCTCACAAC
AGTCTGGTGCCTGAGACTAGTGCATGTGCATTCTGTGAGGCAGGATCTGGTGCCAGGCTTCCAGAGCTTTCAGCCTGCCTAAGCAGTGGGAAATGGTATGGGC
AGAGCCAGCCTGGCATAGGGCAAAGGTGGCCTGTGAAAACCCACTATGGGACACTAACTTCTCGACCTCAGGGCCCTTCAGACCATTTACATGGTCCGGT
CTCACAGGAGGAGAAAATATTTTGTGACTCTGAGGTGGTCACTGGAAAAGCTTCTTCTGACTTCATTTCCAAAAAGGCTGTGTGTGAGAATCTGGTTCCACAG
AGATTGGAATATAGTACCGTATTGGAATTGTTGTGTTGTTGAAGGTTCTTTGGGTGATAGAATCATACCTGAGACCACATGTGTGGATGTCAGTGAAGATGGC
TGGGCTTTGACCTACCATCTCCATTCATCTTGACATCACAGAGGCTTTCTGGGAAATGTAGGAGCCACGACGAAGGGGAAG

cg05202434 Speichel 19% (21%), Blut 52% (7%), Sperma 87% (2%)

cg15781156 No cutting site Hhal

TTCTCTGAATAGAATTGTGTTTATAAAACATAGCTCATAAATCTATTTGGCAAAAATAAGATATTCTTCAATATTTAGACATCTCTGCTGATTCATAACAATAACCT
AAATTTTCAGTCTTCCGAACCTCTGAGAACATAACCTCTGATGTTACAAATTCTGGTTTTAGGGTTCAACAAGAGTCTTCGTAGCAAGTATATTAACCAACATAT
GACTAGAGTAAAGGTGCTGTGGTTTCATGAGAAATAACAGCTGTCTCGAAGAGCCAGAAAGCCTGGAAACTTTCTTTCCAGATCAGATAGTTGACTACTCAA
TCAGGGAAACGTTGAGTTCGTCATGCCTAAGAGGTTGTTGCCAGGCTTGGGTCCAGATTGAGATCCAGGCATCAGGAGAGGTTGTTTTGTTAAAAGTGTGGC
TGGAGCAGCATGCAAGGATGAAAAAGAAGGAGAAAGAATGGACTCTTCAAGTAAATGTTGAGGAAGATATTTCTGAAGAGAATTAGCAGAAGAGGCTATGG
ATAGGACAATAGAAGAGGAGACCAGAGGAGAGGAGAAAAAATGGAGCAAGGTGGGAAAATGCAGAATGAAGGGAATGTA

cg15781156 Speichel 18% (18%), Blut 44% (6%), Sperma 69% (2%)

Digestion controls

VK_GlaI cg15183843 ca. 3,5kb distance

Homo sapiens chromosome Y, GRCh38.p13 Primary Assembly Position: 12421150 to 12421449

CACGAACCCGCAGAACAGAGGCGCGTCTTTGGGAAGCCGCTGGATTCCAGGCCTGGGGGCGACAGCGTGGCTGCCTCGACACCCTCGGCTGCAGGCCTC
GCCGGTGTACCCCCGGCTCCTACTACTCCATGTCACCTGCGCCATGGGGCCCCGGCTCCCCGACGCCCTGAGACCCCCACGCCCGCAATTCCTCCT
CGGCGCTCTAGTTCAGCCTCGTGCCTCTGGCCAGGGCCCCCTTGACCCCTGTCTCCACAGTACCTGCGACCCCGCTGATTCTAATACCCATGCGCCCA
GCAACGACACCCGACGCGGAACACCCGCCGACCTCAGCGGTGTCAGCAGTGCCCGCTGCGCCAACGCGACTTGCTTGGAGTACTGGTACATCCTCTCCCCAA
CCCAGCTGCCCCCGACCCGGTCAACCCCTCTCCACTCCCTGGCCACCCTGCGCTCCCGGACCCAGTATCTGCACCTCCTCCGAGCTTGGAGTGCCTGTGCCG
TGTCGCCAGGCCAGGCGCCCTCCCCGTCCTCCAGTGCAGCCCCACCCAGCCACTCCTGCGCTCTCGCCGCCCTCCTCCCCGTCCCGGCTTCTGCCA
TCCTCTCAAACGCGCCCCGAATCCCCTCACGCCCTGCACCTCTCCCTCCCAGCGCTCCCGCAGCCTCTGCCTTGGGCCTGCGCTCCCTCCCAAGCCTCA
GCTCTAGTCCCCCGCTGTCTCCTCATACTGAGGCAGCCTCCGTCTCCCGTGCCACTGCGCTGGACCACCTGTACTCCTCAGCACTCGCGCTCGG
CTCGGCCACCCACCCGCAAACGCGCGTCTAGCCTATCCCTGCGCCCGCACCCCTCCCGCCTTTGCTTTGGGCAACCTCTCTGACCTCCAGCTCCCAAGCGCTCGG
CTCGCCCCACCTCTGCACCTCAAGGCCGCGCCCTCCCCAGCCCCAGCCTCTGCCTCTGGGTTCCGCCCGCGCCCGCTGTACGCCACCCACCCTCGAGACC
TCCTAGGCGTTGCGGCAGCCTCAACGCGCCCCGGCCCCAGCCGCGCCAGGCTCCTCCACTGCATACGATCCCCTGCACCCCGCTGCAGCCCCCGCACCTCT
CCGGCGCCTGGCTGCCTTGCCCAAAGCCGGCGCTGGGGCCCCGGAGGGCAGCGATTGCCTCTGTCTGAAGCCCGGCCCGCTCCGCCAGCCTGGTA
GGCGCGGGTTCAGCTCCTCAGCCCTGCAGCCCTGCCGCAAGCCCGCGCTCCTGCTGTCCAGCCCCAGCTACCAAGGAGAGAGACCCAGGAACCGCCAGT
GGCTGCGCTCCACGCCGCGCGCCAGCCCTCGCCACCGCGGCCCTTGGCAGTTGGCGGTTTCTAGGTTTGGACATTTAACCTTTAATTGGCCGGCCCCAAA
GTAATGTTTTGCGATGACTTAAGGCCCTGGGCCAAAGGCCAGCGCGCAGCCGAGTGGAGCCGCTCTGGAAGCTCCAGAGGAGAAAGCAGAGCTCATAC
ACTATCTTGTGAATGCATGAAAAATACACGTGCGCAAACCTGCACGCATGAATGAATGAATGCACGAAAGAGAGAAAAAATGAGTGTTCAGGCCTCAG
CTGTTGAATA

VK_Gla_for_I Tm 66°C, 19bp

VK_Gla_rev_I Tm 66°C, 19bp

VK_lalu I cg15183843

AAGCCAGGAGAGAGGCTCAGGAGGAACAGCCCTGCCACACTTACCTTGATCTCAAACCCAAAAGAGAATGCAGACAGGCTGCTGCTATTAGAGTGAGAGT
TTTATGGAACACTGACACCCCTGTTTCTCTTTGGTTTAGAGTTGGGGGAATACTGACCACAGTACACAATGACAAGACAACACCAAGTTGGACAAGAGCT
CTCCAGCAACAAGGTATCCGAGACTCAGACTTCTGCTTTGGAACAAAAATGTGCACCTCCTGAAGTTAGCCACTTCCCATCCAGGACACTGTAAAACCATCTA
AAGTGCAAGACAGACCAGCGGATTGAAATAGAACAGATCATGAAACATTGATTGATAGGTGCTTACCTTCCACATCACCTTGCCCTGAAGAAACAACCTGGT
ATCAAGTCTGGTGGCGCGCACAGAACATCCAAATTATCCAATGCTGCTGCTTCAAAGAGGGAGTTTCACTTTCATGTGCCAGTGGCGAGACTTTCAGCA
AAGGCACGGAGTGGAAAAACAGCAAAAGAATTGTCACTACACTACAGCCCAAAAAAGGAGACACTGTACAAAAATCAAGTCCAGCCTGGAGATTGCAGTG
GCTTAGAATTTTACTGACTCTGTGACAACAGTTTCTTTCTACCCCTTGCCTGCCCCCTGCACTCAAGGAATCTTCTGATCACCCCTCAGAAATATCTTAGCATCTT
CTTCTCAGCCCTTCTACTCAAAGGCAGTTTCTGTTTTCTGCAAGAGTTGAGTCTTCTCTTGGCATGAGG

cg15183843 (-vaginal, 96% Speichel, 85% Blut, 82% Sperma)

VK_lalu_I for

GCTTCCACATCACCTTGCCC

VK_lalu_I rev

CCGTGCCTTTGCTGAAAGTCT

VK_lalu_II 27254225 ca. 4kb distance

AGATCCTTTGTTCTGAGGCTCACTCATCTCCGAGCCCGAGCCGTCTCCAGCCTCAGACGGCTCTGCGGCTGCTGATCTGTGCAGCTGGCAGCGGC GGCGCT
GGCGTGTGACATTTTACAGCCCTTTCAGAGGCATGTGTGCTAGGGATGCCGAAATGCCGAGA GCGCGGGCAGGACTAGCTTCCGGGCCGCGCTTTGTGT
GCTGGCTGCTGAGTGTGGCGGGGCGAGGAAGCTGGTAGGGCGGTTGTCGCAAGCTCCA GCTGCAGCTCCGCTACGTGAGAAGACTAGAAAGCGGCGCA
GGACCAGGCCTGCGTTGTTTGC

VK_lalu_II_forw 20bp 66Tm

VK_lalu_II_rev 19bp 66Tm

VK_lalu_III cg17913570 ca. 1.7kb distance

GGGCCTGTCCACTTGACGGAAGCCCTGTAGTTAGAAGCGACAGCAGGGTCGTGCCTGGCGCTCCATGGGAATTGGGTGGGTGCAAAGGAAGTTATATAGG
CTCAAGGCCTACACACCTTTGGGTGACGCGCCGCGAGGGGAAGAAAGCATATCTGGGGAGCTGG

VK_lalu_III_forw Tm 64°, 21bp

VK_lalu_III_rev Tm 64°, 21bp

VK_lalu_IV cg05999368 ca. 0.5kb distance

AGTGATCATTGAGAGTACTGCCTTGGCATCCTCGGTAAGGAGCGCTCCAGCATGGTAGGGAGCTGGTGTGTGGGAGGGTAGGTCTGGCATGAACCTTC
CTGACTCCTCTCTGCAGGATACGGGATGTCTATTCCACTGCAGTCTAGTGGTTGTGGGATCATGAAGGTCAAGCCTCCA GCTGCAGGCCGTACAGCTCCTA
CCTGACCTTCTTCTCAGCTGGTTGGCTGACCATGACTGCCAGGTTCTGGCAGGATTGCTGAGGTGAGCGCCAGGTAGGGCATCATGGGA

More matches on Y Chromosome !!

VK_lalu_IV_forw Tm 64, 20bp

VK_lalu_IV_rev Tm 62, 19bp