

***Francisella tularensis* signatures and validation**

1) Sequence information for all of the signatures utilized in the wet chemistry evaluation

101 Taqman assays (Table 1) including 7 subsp. specific assays were designed from the signature sequences

Table 1, *F. tularensis* Taqman assay primer and probe sequences and their locations on the chromosome. The first 7 assays were designed using subspecies-specific signature sequences. Type A = specific for *F.t.* subsp. *tularensis*, Type B = specific for *F.t.* subsp. *holartica*, nov = specific for *F.t.* subsp. *novicida*, Type AB = specific for and inclusive of both pathogenic subspecies.

Primers and probe^a and their locations on chromosome	Sequence (5' to 3')
FT1082927typeAF	TCAAAGGTTTTGATGTCACCTG
FT1082927typeAR	ATCAATTCCAGAGTATCTAAGA
FT1082927typeAP	ATCACGAGCTAGAGATTCAAAGTCGA
FT823046typeBF	TGCACGATATCCAAGGAACA
FT823046typeBR	TCCTGACAACCTACACCCAAT
FT823046typeBP	TGCACCATCTACTGCTAGTTTGGCTGA
FT33945novF	TTTAAACAAAGAAGTAGGGCAAGA
FT33945novR	TCGATCATGCCAAGAAGCTA
FT33945novP	GTTCCGCTACCGAAAATGGCGAAT
FT76939novF	TGATAATGCCGGTATGTTTGC
FT76939novR	ACACAGAGCATATAGTTGATGACATA
FT76939novP	TGGGCACAATGGAGTAGTAATGTAATCTGG
FT178134novF	GGTCAGAGCCATTTGGTTTAG
FT178134novR	TTCAAAGTTAACAACCTCGGAAA
FT178134novP	GGTTGAAGCGATGATGAGCGGAAC
FT515956typeABF	TGATCCGTTTGATTGTTATCCT
FT515956typeABR	TTTGAGATAAGGCTTTTTGTAACAT
FT515956typeABP	AAATTCATCAGGGCGAGCTGCCTC
FT1503487typeABF	CAAACATTAAACCCATAAGTGCAA
FT1503487typeABR	TTCAAGGTATATATCCACCTCTTGG
FT1503487typeABP	AACTTACACTATCAGCATCTAGCGAGCCT
FT842414F	GCAAAGATCGCTGTGAGACC

FT842414R
FT842414P

GCTGATGCTACAAGTGCTACG
TGAACGAGCGCCCTGAGCAA

FT977288F
FT977288R
FT977288P

CGCACCCAATAAAGTACCTAATGC
TCTACAAGTAACTTCATTATGGGTGTT
CGCTGTAATAGAGCTATCTATATATC

FT389903F
FT389903R
FT389903P

CGTGAAGGTGCAATAGTTGG
CCTTTGCCAAGAATCGTTTT
TGCACGTGTTAGACCTGAATGTGA

FT928157F
FT928157R
FT928157P

GGCGTCTTTAACCAAAAAGG
TCTGACCAATTGGAATACTGTTG
GACGTTGGTGGAGCTCCGGC

FT303880F
FT303880R
FT303880P

CAACCGTGTTGTAGGTCAAGAG
TGTTTTAATAGCCGTTGTCTTAGC
CTTGTAGAGGGGGCGCCTGG

FT81312F
FT81312R
FT81312P

GCATAATATTGTTGAGCGTCCT
TTACAGATGTACCGCCATCAA
TTGTTAAGGGTGAGATTAAGATTCGTCCAA

FT731768F
FT731768R
FT731768P

CCAATAGGTCCAGCACCAGT
TCGCTAGTACTTTTGATCCTATGG
TCCTCACCTGTAAAGTTAAAAGAAAGTGCG

FT1590976F
FT1590976R
FT1590976P

TCAAATTTCCCTAAAGACATGGA
CTACTTTATGCCACCCAGCAA
TCGTTGGGGATTTGGTTGGAAACA

FT826674F
FT826674R
FT826674P

CGACGCATTTGCATTTACAC
CAGTCATTGACAACCCAATCA
ATGTCAAATGGCTATCTATGTAAGAC

FT59100F
FT59100R
FT59100P

AGAAAGCTTGCGGCAAAGG
TGGCATAATTGCAAGGATAACT
TGC GTGGCTCAAACCATACCGA

FT25112F
FT25112R
FT25112P

AGAAAGCAGCATTGTGTTAAAT
TTATTCTAATATCTTACGTAACCGCGT
GCTGATTCACCAGCTACCATTAGGCTTG

FT32523F

GTTTCGTTGGACACCCTTTG

FT32523R FT32523P	CATCAATCTCTACCGGCTCA TCCCGCAAACAGGCTATGTTGAGA
FT37632F FT37632R FT37632P	ACAAGGAGTTATGGAGAGTCCTAAG GCATAAGCATCATTAGTAACCTCTG GGTAATCTGTTGGAGCTAGAAGGCTTTGA
FT55691F FT55691R FT55691P	TAGAGAGTTATATAGCATACCGGCAAA CCAATTATAGGTGAGCCAATCG TGTTTCGATGATGTTCTTGGGTCTTG
FT162583F FT162583R FT162583P	TACCTAAGTCTCGTCACCTAGTAGTTT GATCATGTGGATCAGTAGGTCCAT TGGTGAGCAGGTTTCTAGGGGTGA
FT169131F FT169131R FT169131P	TCTGTGGTAGATACGAAGGGG AGGGAGCTCACCACCACTTA TGTTGACGAAGAAATTTTCGGTTGGA
FT181034F FT181034R FT181034P	TCATAGATTGTTGGCTGAGAAAA TCCATAAAAGGAACATTAAGTGC ACTGCTTGGAGCATCTGTACGCCA
FT207000F FT207000R FT207000P	GAGAGTCTTTAGCAAAGCATTGAA ATAATATCCAATATATGCCTTCACAA TGTACCTCATCGATTAGATAGACTTTATAGCGTCC
FT216343F FT216343R FT216343P	GGTTGTGTAACCAAACCAGCA TCAAATCTTGCTATCTCATACCATTT TCCTGTGCGAAACTTTCAAGCGGA
FT236099F FT236099R FT236099P	CAGCGTCAGCATATCCAGC TCAGGGATACTAGTTTTAGGGGC TCCCATAATAGAACCAGATGCAACCTGA
FT240059F FT240059R FT240059P	AGCTGTAATTTCTGCTGGATAGA AGCGCAAGATCAGCTTAGTT ACAGCTTGGAATTAGTAGGTTTACCAACAAGA
FT307959F FT307959R FT307959P	TAGCAACTGCAGGTACTGGAAA TCGAGCCTACTTGCTGCTCT CGCTAACGGCTAATAATACCGATGTTAAAAGC
FT349991F	TTTGACAAACCAAAGAGCATT

FT349991R	ACCAACTCTCTCAAGCTCGG
FT349991P	GAAATGTCGGAATACTTTCTGCGATACCA
FT394351F	ATCGGCGCAGCTATAGAAAA
FT394351R	GCGGTGGTTCATGGAAATTA
FT394351P	TGATGCTTTTTGTGGCCATGGGATA
FT405842F	ATATGGCAAAGAGAGTGTCGC
FT405842R	ACCAAACTTTGGCCCATTA
FT405842P	ATGGCTGCTAAAGGTGTTGTGCGTG
FT426386F	CTGATACTAGAGCAAACCAGCA
FT426386R	CCTATCCTACGAATACCAGAGTTT
FT426386P	TCGGAGGCAAATTCAGGATTATCGA
FT457764F	GCATGTTGGCCATTAGGATT
FT457764R	TGTGGTTGATAAAGCAACGATT
FT457764P	TGGTGAATTATCGGATAAATATGGACGCA
FT503603F	AAAAAGGTACATTACAGATGGAAATC
FT503603R	TATAGCAAGTAGCTCTTGGCTTTGTAG
FT503603P	TGCCACTAATGTATGTTGACTCTTCTGGTAAGC
FT524177F	CCTTCAGTTGAAGCCATGAA
FT524177R	TTTGAAGATGTATAACCCTGTTACTCG
FT524177P	CGGCTAGATCTATCAACTACCGCACCA
FT553580F	GTGCTGCATTACCTTCGACA
FT553580R	TGCTGCTTAACTTTCAACGC
FT553580P	TGCATAGATTCATCACGAATTGACCATTC
FT664103F	TTTTAACTGATAAGCGTTTGGC
FT664103R	TGTCTGCAACACCTATTCCG
FT664103P	TGATAAGTCTCTTAGTGCTGAAAACGCCA
FT680433F	TGTTACAGTTAGATAGGCTGTCTCG
FT680433R	AGAGATATGGCTATCAAGGTTGG
FT680433P	GAATATTTAGGACCGCTCGTTCAGTGATC
FT826699F	ACGACGCATTTGCATTTACA
FT826699R	ATTGACAACCCAATCAACCC
FT826699P	TGTCAAATGGCTATCTATGTAAGACAATGGGA
FT848661F	TTTCAACGCGCTGATTTATAG

FT848661R FT848661P	TGGCTCTAGTGATGGAATTACTATT TTGAGGTTGAGTCATTAGGGGCGA
FT869241F FT869241R FT869241P	GATAGCTAATATCTGGTAGTCCATGA TACATCGCCCTATTCCGATA GACTAATGCTGTAAGTGTTGGCCACAAGA
FT953946F FT953946R FT953946P	CAATCGATATAGGCTTGGCA CAACGTAAATTAAACCTTGATGAGC TCAGGCTTAGTCGATTCAGCTCCGA
FT965775F FT965775R FT965775P	TGGGAATAGTTCAGCAACCA TTTACCGCGACTAATGGTGT TGGAAGAAGTAACTTGCAACTAACCACCA
FT1102879F FT1102879R FT1102879P	CAGCTAATGGTAGACGCCAAA TTTCTGTAATAATGATGATGTGGCTA TTGATCTTGCGTCGCCTGAGCATA
FT1127681F FT1127681R FT1127681P	GCTAGCTTCATGAGCTTGTTGA ACAGTCCGTGAGTTGCATGA GCGGCATTACATGCATCTGCTATTACA
FT1334646F FT1334646R FT1334646P	CCATCTAGTAATGGTGCGTATGTT AAATTAGCGTTATAGATGTTCGATGG TCACCTTCATTGGTTTTACCCGTGA
FT1465568F FT1465568R FT1465568P	CAAATACCAGAGCTACATCATAAGC GTGGTGGGGCGATTGTTAC ACAATGTTACTGGCTGGCGCCAAG
FT1468657F FT1468657R FT1468657P	TGATTATGATATTCTTATCAATGTCCG AAAAGCTTGGTTTTCTATAGCTCG AATCTCGCCGTCAACATTGGCAAG
FT1493227F FT1493227R FT1493227P	TATGGAAATTGGAAACGGCT AGGTGGTGCAACAATCAAGC GGCACCATTGGTAAAGGTCAGCG
FT1493431F FT1493431R FT1493431P	GAGCGTCCTGAGGAAGTTACC CAGCTAATTGGACATGGCGT CTCCGTGCGAGGTGAGGTAGTTGC
FT1537122F	AGTAAATCATGAAAGGAATCATTGG

FT1537122R FT1537122P	CAAGAAGGTATTAATGAGCAAGGA GCTGCGGCAATCCAAGAACAAAA
FT1613340F FT1613340R FT1613340P	GAGTGTTTCAATTTATCTTAGCGTTAG TCTATGATGTCCTGACCACCAA TACTTGGGCATCGCAAAAAGGACC
FT1633799F FT1633799R FT1633799P	CCTTTTTGTACATTAATGGCTGA TTTCTAATCTAAAGTATTCGGTTGGC CAGCTAGTGGGCCATTGGTGAAG
FT1669820F FT1669820R FT1669820P	CCATCATAGCAACTTGATAACCA AATGCGATGAATAGACTTCTGC GTCTTACCCGCCCAACATCACCT
FT1695764F FT1695764R FT1695764P	TTTATTAGAATTACCCTAGCACCACA TGTGCATATGTCTGCATTAGTTG CACGTGCCTCCTTGATGATATGCTCA
FT1696200F FT1696200R FT1696200P	GCCTTTCTCATCGCATCAAC CAGTCAGAGTTACTGAGCTGGC CCATCTGGCTCCATGATGCTAGTGC
FT1697149F FT1697149R FT1697149P	TTGTAACACCTTGACCAACGA AAAGCAGGGTAAAAGCTTAGAAGA AGCAATAATAGGCGCCCATGGGAA
FT1746767F FT1746767R FT1746767P	GAAACGTCACCACCATAGCA GACAAATGTTTGAGGTCGCA TCGCTAAAACGTTCTTACGCAATGC
FT1855980F FT1855980R FT1855980P	TTTTAGCTAATTGTGTATTATCACTCG AGAATTCATGCAAAAGATGGC GCGCCACCTGTAGATGCAATAACCA
FT17245F FT17245R FT17245P	AACAAAGCCGATTAGTCAAGG CATCTGTATCTTTGACAATCACACC TCAGATGGTGTTATAGTTGATCGTATCCATGG
FT29180F FT29180R FT29180P	GCTGATTCGTGGACCTGTTT TGCCACATATAAAGCTACCAGTG TGACAGACTCAGGCGATACTGTTCTTGT
FT52249F	CTGAGGGCTTGGCTGAGG

FT52249R FT52249P	AGGTTACCATTTTGTACAAGTACAGTT AGAAAAGGGTTCGTGGTCCAGTGGC
FT57647F FT57647R FT57647P	GTAACTCAGGATTAGTTGAGCGTC TGATGTTTCTTTATCAAGTCTATGCAC GGCAGTTGCGTCCAAAAGTTAGACG
FT238353F FT238353R FT238353P	ACAAAACCTGTGATGGTCAAGTCA TCATTTAGAGCGAAATTTTGTG TGGGATATTATGATGGTAATACTGTACAGCA
FT256876F FT256876R FT256876P	GCTTTATCAAGTCAAGATTCTGAGC AGATATCAACTGTCACAATAATCTCAA TAGCACAGCTTGAGAGCGGTGAAC
FT295699F FT295699R FT295699P	GCTAATCTTGTCTAGTGTTGTCCG TCTTGTGCTGTAATAACACCCATC TGTTTGTAAAGGGTGGTATCTGGAATCC
FT304581F FT304581R FT304581P	GGATTGCATTTGGTTCTAGTCC AGACATAATCATTACCTGAAAGCCA GATAGAGCAGCAAGAGCACACGCG
FT309917F FT309917R FT309917P	TTAATGTTTACCCTGAAAAACCA GCATATAACCAATTTTATAGGTAGCGA TGAGCAGGCTGGTCAATTAACGGG
FT318540F FT318540R FT318540P	CCATGAACCAGCTTCACAAT AACTAAAATCACATCGCTTGATGA CATTTTAGGAACTCTACGATGATAAACTTTACGCA
FT319502F FT319502R FT319502P	TCCTTCTTGTAAGGGTGCGT CGAATAATAGCCTGTAAGGGTGA CCGTTTGGTATTTTCCAGGTGGTAAGA
FT331918F FT331918R FT331918P	TTAGATTGGCTGTTGATTATGCTG CACTAAGCTTACCAATATCAACTTCTC GTCGATGGGATATAGTTGAGGCTACTAGAGCT
FT375217F FT375217R FT375217P	GGATAGTAGCACCTAGATAATCACCC TGA CTCAAGCAAATAACTTCACAA GCTCTTCTTAAACACACTCTGGTATACTTTACCG
FT409482F	AAAAGCTTACCACTATTTATCGGA

FT409482R FT409482P	ACCCAAAAATGATATTGCCG TCCGTGCTAAGAAGCGTAACCGGT
FT467717F FT467717R FT467717P	TGGCAGTAGTAATGCTGTCAATC TGCATAAATACCTAACCCAGCA TGATGGGCTAGATGGTTTGGCTATTG
FT482541F FT482541R FT482541P	CTAAATGCATTACGCCACCTTC AATGCAAACCTTAAACACGTGGC GGGTTTTGAAAGGGCGTCCATCTT
FT483308F FT483308R FT483308P	TGTAAGGCATCACCTAAAAGTGC GGAAAGTTGTGCTTGATTTTGG TGTGTCCAACGTGCATCGGCTTAG
FT558481F FT558481R FT558481P	AAGAAACATTCAGCTGGTTTGA TTTAGCTACACTAGCTTGGCCC CACTGGTGAGATTTGTGCTCAAGGC
FT561151F FT561151R FT561151P	GCTTGTCTAGTTTATTAACGCCTTT GGTTATTCAGAAGGTGGTGGA CCTCGCCACCCTAAGCATTTAGCA
FT566332F FT566332R FT566332P	AAAAATGGTGGTAACGTTGG ATCAGTTATTAATGCTTCGGCTTC CATTCGATGTCAATTATGGTTTGGCA
FT708759F FT708759R FT708759P	TCCATAGCTTCAAGATTGCAC AAAAATTTTATTCTTGTGGCAGA GCCAAGGATTTTGGGCTCTACCAA
FT748642F FT748642R FT748642P	TTTCCCATTAGAACTTACTTATACCA CAATATATTACAACCCTAACTCCAGA GACCAGCTCCAATTAATCCAAGCTCA
FT776191F FT776191R FT776191P	TGATTCTGATTTACTAAGAGCTAATGC AAAAAGCTCCAAATAAGCCGA GCCGTTCTGATATGTGGTCTTCGG
FT826103F FT826103R FT826103P	AGGAATTGGTCTTGTAGTTGGTC TCTAGAGCAAAATATCCAGGTACA TGTGTCACTATTAGGACTATCTACAGGTGGTATGG
FT842458F	GCCCTGAGCAATGCCTACT

FT842458R FT842458P	GCTGATGCTACAAGTGCTACG TGATGGGCTTGAGCCTAATATCCCA
FT885207F FT885207R FT885207P	CTGTTGCTACTACAGTTACCTCAGC AAAATGCAGTTCCAGCTTGC GTCACCTTGCTTGCGAATGCTGTG
FT955665F FT955665R FT955665P	GGATTAGATATAACAATAATCCGCGA CGGTAACAATGCTAAAGCGG CGATGCTAAGTTAGTAGCACGGATTATTAACCA
FT1118666F FT1118666R FT1118666P	ACATCGCAAACCATGAGAGG TGATTTTGTATGTTTAGCCGTTTT GCTCATGATCCTGACCTAACTTAATATCGCC
FT1136461F FT1136461R FT1136461P	GCGATACCAATGATTCTCTCTT AAGTGTTGAGTATGTCATCAATAGCC TTGGTGCGATTATTGGCTGTCTAATTATG
FT1179009F FT1179009R FT1179009P	AACCTGATAAACCAAATGCCA AATTTTAGTACTGATGTCGAGCTATG CACCAGGCATCATCGCTACATACTCTTC
FT1183143F FT1183143R FT1183143P	AAATAAACTTGCAGGTCGTAAAGT AAAGTTTTACTAATATCGATACGTTGC CAGGTAATGAGCCAGCCGTCACAA
FT1276202F FT1276202R FT1276202P	AAATATGATAATTGTCTCCGGTTTT TCCAGTGACAGCTACCTCTCTT TGTTTATCCGAGAGAAATTGAGTTATGCATACTT
FT1372530F FT1372530R FT1372530P	AAATAAAGATTTACCCTAATGGCG ATGGGAATTTCTCAAGTCGC CACCGAGCAACGTACTTTACATCTTGAA
FT1473656F FT1473656R FT1473656P	TTGACAATGTCTTTACCAGTTGAG AGCTATCAAAGCAGGAATGACG TGGAGGCGCATAGCATAGCTCAAGA
FT1563720F FT1563720R FT1563720P	GTCACCAATAAGCTCAAGCGA TTGTAAACCCCATCTAAAGCAA CGATGCGAGCAACATCATAGTGCC
FT1601277F	CATTTAACCTCCATTGTCGCT

FT1601277R	TTCATATTATGGTGAAGATTTTACGAC
FT1601277P	CCATGCGATATGCCACTGTAGCAGA
FT1615787F	TTATTATGCTTTTGCTTATCGGC
FT1615787R	TAGTGACAAGAGCTCAGAAGACAG
FT1615787P	CACAATCAAAGCTCTTATAATAATAGCCCGTGA
FT1632609F	TCGTGAGCTATAGATACATTGCTCTTT
FT1632609R	TGTTTATATAGGTGCCTGTGCAAC
FT1632609P	TCAGCGTGTCAATTACCTATCTTGGTACCA
FT1634417F	TTTTGTAAAATCTAAGCTCTCAACG
FT1634417R	AGGTGTGCCTGATATGAAAACA
FT1634417P	CCTCTCTTTGGATAGTACATTGCGTTGGC
FT1698361F	CAAATAAACCAGTACCAATACAGCC
FT1698361R	AATAGATGTTCGCAGAACTTAAACG
FT1698361P	GCTATCATTGACATATGACGAGTATGTAAGCCA
FT1701753F	TCTGAAAATGGTGGTAGCCC
FT1701753R	TTTTTGGGTTTTGATAACGATCT
FT1701753P	CAGTGGTGACAGCGAAGACCCTCTC

^a F: forward primer, R: reverse primer, P: probe

- 2) A complete list of strains panels (including source information) utilized in the environmental wet chemistry evaluation.

Table 2, *Francisella* strains used in this study

Species (no. of isolates)	BEI/ATCC ID	Strain Information
<i>F.tularnsis</i> subsp. <i>tularensis</i> (5)	NR-3015	Genomic DNA from F t subsp. <i>tularensis</i> , strain SCHU S4 (FSC237)
	NR-3017	Genomic DNA from F t subsp. <i>tularensis</i> , strain MA00-2987
	NR-3016	Genomic DNA from F t subsp. <i>tularensis</i> , strain WY96-3418
	DD-506	FRAN001 DNA from F t var <i>tularensis</i>
	DD-201	FRAN016 DNA from F t strain SHU4
<i>F. tularensis</i> subsp. <i>holarctica</i> (6)	ATCC 29684	F t subsp. <i>holarctica</i> strain LVS, army lot#11
	NR-3019	Genomic DNA from F t subsp. <i>holarctica</i> strain, KY99-3387
	NR-3020	Genomic DNA from F t subsp. <i>holarctica</i> strain, OR96-0246
	DD-445	FRAN004 DNA from F t strain LVS var palearctica
	DD-450	FRAN012 DNA from F t subsp. <i>holarctica</i>
	DD-425	FRAN029 DNA from F t subsp. <i>holarctica</i>
<i>F.tularnsis</i> subsp. <i>Novicida</i> (1)	U112	Genomic DNA from F t subsp. <i>novicida</i>
<i>F. philomiragia</i> (1)	ATCC25015	Genomic DNA extracted from <i>francisella Philomiragia</i> , O#319L

Table 3, non-*Francisella* strains (N=7) used in this study

ATCC ID	Strain Information
ATCC 10798	Genomic DNA extracted from <i>Escherichia coli</i> (Migula) Castellani and Chalmers, K-12
ATCC 47085D	genomic DNA from <i>Pseudomonas aeruginosa</i> (Schroeter) Migula, PAO1-LAC
ATCC 33152D-5	Genomic DNA from <i>Legionella pneumophila</i> subsp. <i>pneumophila</i> , Philadelphia-1
ATCC 14579D	Genomic DNA from <i>Bacillus cereus</i> 971
ATCC 700720D-5	Genomic DNA from <i>Salmonella enterica</i> subsp. <i>enterica</i> , serovar <i>Typhimurium</i> , LT2
ATCC 39315	Genomic DNA extracted from <i>Vibrio cholerae</i> deposited as <i>Vibrio cholerae</i> Pacini, N16961
ATCC CRL-5957D	Human genomic DNA (NCI-BL1395)

1855980	19	19	19
295699	15	15	15
304581	16	16	16
309917	18	18	18
318540	16	15	16
319502	15	15	15
331918	20	19	19
561151	15	15	15
566332	15	15	15
708759	22	21	22
748642	21	21	22
776191	18	18	18
826103	16	15	15
1179009	18	16	16
1183143	16	15	15
1372530	16	16	16
1473656	16	16	16
1563720	17	17	17
1601277	15	15	15

18	16	20
16	15	15
17	16	16
19	17	18
16	15	15
16	15	15
20	17	19
16	16	15
16	15	15
23	19	22
22	18	21
19	17	18
16	15	15
21	15	16
16	15	15
17	15	16
16	15	16
18	16	17
16	15	15

19	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
17	>50	>50	>50	>50	>50	>50	>50	>50	>50
18	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	40	>50	>50	>50	>50	>50	>50	>50	>50
20	44	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
22	>50	>50	>50	>50	>50	>50	>50	>50	>50
21	>50	>50	>50	>50	>50	>50	>50	>50	>50
19	41	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
19	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50
19	>50	>50	>50	>50	>50	>50	>50	>50	>50
16	>50	>50	>50	>50	>50	>50	>50	>50	>50

LEGEND	< or =20	21-25	26-30	31-35	36-39	40-50	>50	
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