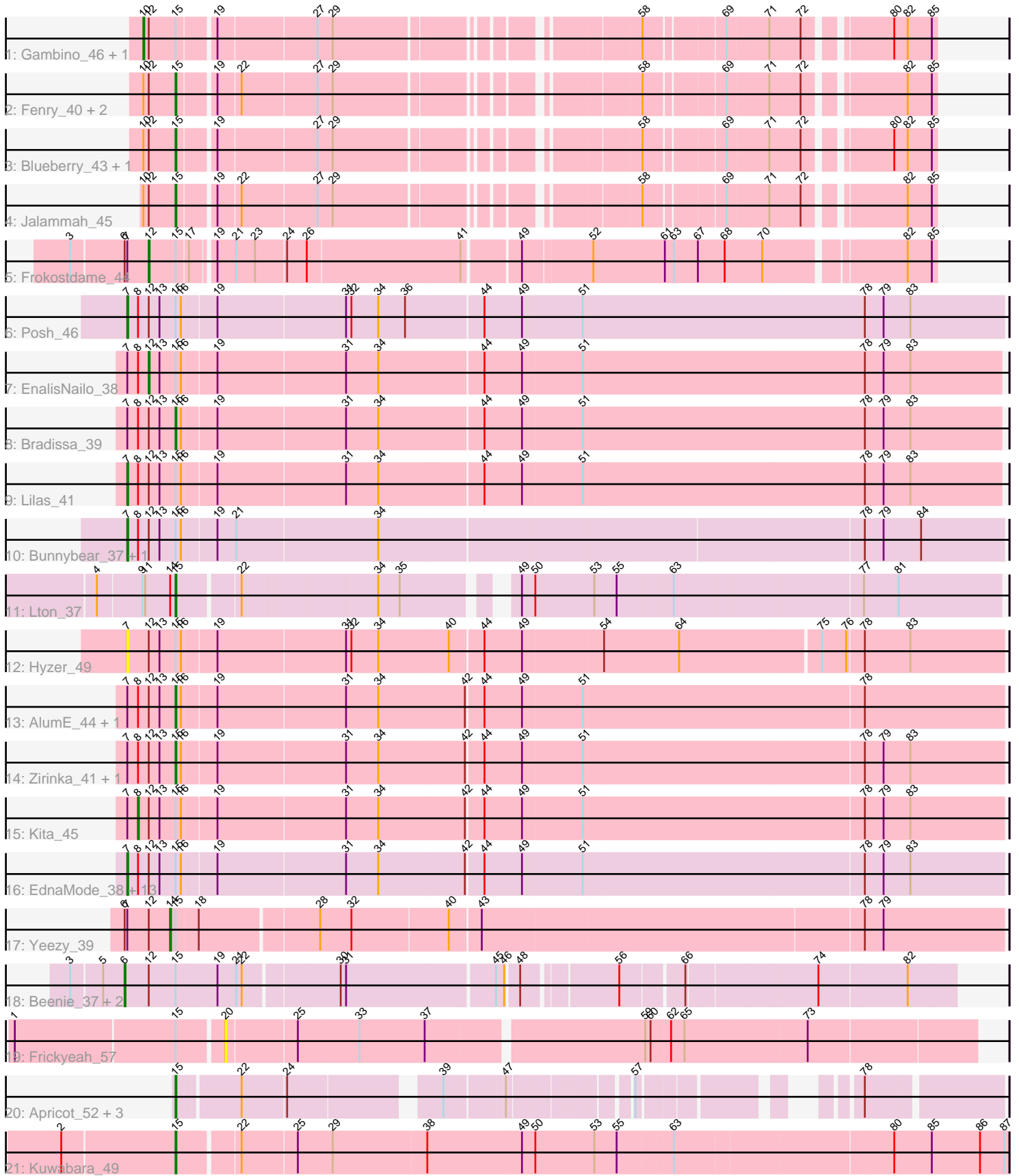


Pham 198164



Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

## Pham 198164 Report

This analysis was run 01/18/25 on database version 583.

Pham number 198164 has 46 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Gambino\_46, Azula\_44
- Track 2 : Fenry\_40, Wocket\_42, KappaFarmDelta\_43
- Track 3 : Blueberry\_43, MissRona\_44
- Track 4 : Jalammah\_45
- Track 5 : Frokostdame\_44
- Track 6 : Posh\_46
- Track 7 : EnalisNailo\_38
- Track 8 : Bradissa\_39
- Track 9 : Lilas\_41
- Track 10 : Bunnybear\_37, Maridalia\_45
- Track 11 : Lton\_37
- Track 12 : Hyzer\_49
- Track 13 : AlumE\_44, BoyNamedSue\_44
- Track 14 : Zirinka\_41, Bialota\_42
- Track 15 : Kita\_45
- Track 16 : EdnaMode\_38, Polly\_41, Eudoria\_44, Pickett\_37, SoilAssassin\_39, LordFarquaad\_41, Tayonia\_44, Neobush\_44, Antonio\_44, Suscepit\_44, Zameen\_44, Trumpet\_44, Attis\_39, Yeet412\_39
- Track 17 : Yeezy\_39
- Track 18 : Beenie\_37, Sekhmet\_44, Invectra\_45
- Track 19 : Frickyeah\_57
- Track 20 : Apricot\_52, Crater\_52, PhorbesPhlower\_36, Phistory\_54
- Track 21 : Kuwabara\_49

### ***Summary of Final Annotations (See graph section above for start numbers):***

The start number called the most often in the published annotations is 7, it was called in 18 of the 43 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antonio\_44, Attis\_39, Bunnybear\_37, EdnaMode\_38, Eudoria\_44, Hyzer\_49, Lilas\_41, LordFarquaad\_41, Maridalia\_45, Neobush\_44, Pickett\_37, Polly\_41, Posh\_46, SoilAssassin\_39, Suscepit\_44, Tayonia\_44, Trumpet\_44, Yeet412\_39, Zameen\_44,

Genes that have the "Most Annotated" start but do not call it:

- AlumE\_44, Bialota\_42, BoyNamedSue\_44, Bradissa\_39, EnalisNailo\_38, Frokostdame\_44, Kita\_45, Yeezy\_39, Zirinka\_41,

Genes that do not have the "Most Annotated" start:

- Apricot\_52, Azula\_44, Beenie\_37, Blueberry\_43, Crater\_52, Fenry\_40, Frickyeah\_57, Gambino\_46, Invecetra\_45, Jalammah\_45, KappaFarmDelta\_43, Kuwabara\_49, Lton\_37, MissRona\_44, Phistory\_54, PhorbesPhlower\_36, Sekhmet\_44, Wocket\_42,

### Summary by start number:

Start 6:

- Found in 5 of 46 ( 10.9% ) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Beenie\_37 (CZ4), Invecetra\_45 (CZ4), Sekhmet\_44 (CZ4),

Start 7:

- Found in 28 of 46 ( 60.9% ) of genes in pham
- Manual Annotations of this start: 18 of 43
- Called 67.9% of time when present
- Phage (with cluster) where this start called: Antonio\_44 (CZ1), Attis\_39 (CZ2), Bunnybear\_37 (CZ), EdnaMode\_38 (CZ2), Eudoria\_44 (CZ1), Hyzer\_49 (CZ1), Lilas\_41 (CY1), LordFarquaad\_41 (CZ2), Maridalia\_45 (CZ1), Neobush\_44 (CZ1), Pickett\_37 (CZ2), Polly\_41 (CZ1), Posh\_46 (CY), SoilAssassin\_39 (CZ2), Susceptit\_44 (CZ1), Tayonia\_44 (CZ1), Trumpet\_44 (CZ1), Yeet412\_39 (CZ2), Zameen\_44 (CZ1),

Start 8:

- Found in 25 of 46 ( 54.3% ) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 4.0% of time when present
- Phage (with cluster) where this start called: Kita\_45 (CZ1),

Start 10:

- Found in 8 of 46 ( 17.4% ) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Azula\_44 (CV), Gambino\_46 (CV),

Start 12:

- Found in 39 of 46 ( 84.8% ) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 5.1% of time when present
- Phage (with cluster) where this start called: EnalisNailo\_38 (CY1), Frokostdame\_44 (CV),

Start 14:

- Found in 2 of 46 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 1 of 43

- Called 50.0% of time when present
- Phage (with cluster) where this start called: Yeezy\_39 (CZ3),

Start 15:

- Found in 46 of 46 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 17 of 43
- Called 37.0% of time when present
- Phage (with cluster) where this start called: AlumE\_44 (CZ1), Apricot\_52 (DN3), Bialota\_42 (CZ1), Blueberry\_43 (CV), BoyNamedSue\_44 (CZ1), Bradissa\_39 (CY1), Crater\_52 (DN3), Fenry\_40 (CV), Jalammah\_45 (CV), KappaFarmDelta\_43 (CV), Kuwabara\_49 (DN4), Lton\_37 (CZ), MissRona\_44 (CV), Phistory\_54 (DN1), PhorbesPhlower\_36 (DH), Wocket\_42 (CV), Zirinka\_41 (CZ1),

Start 20:

- Found in 1 of 46 ( 2.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Frickyeah\_57 (DN1),

### Summary by clusters:

There are 12 clusters represented in this pham: CY1, DH, DN4, CZ2, CZ3, CZ1, CZ4, CZ, CY, DN1, DN3, CV,

Info for manual annotations of cluster CV:

- Start number 10 was manually annotated 2 times for cluster CV.
- Start number 12 was manually annotated 1 time for cluster CV.
- Start number 15 was manually annotated 6 times for cluster CV.

Info for manual annotations of cluster CY:

- Start number 7 was manually annotated 1 time for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 7 was manually annotated 1 time for cluster CY1.
- Start number 12 was manually annotated 1 time for cluster CY1.
- Start number 15 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CZ:

- Start number 7 was manually annotated 1 time for cluster CZ.
- Start number 15 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 7 was manually annotated 9 times for cluster CZ1.
- Start number 8 was manually annotated 1 time for cluster CZ1.
- Start number 15 was manually annotated 4 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 7 was manually annotated 6 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 14 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 6 was manually annotated 2 times for cluster CZ4.

Info for manual annotations of cluster DH:

- Start number 15 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN1:

- Start number 15 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN3:

- Start number 15 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 15 was manually annotated 1 time for cluster DN4.

### **Gene Information:**

Gene: AlumE\_44 Start: 34842, Stop: 33937, Start Num: 15

Candidate Starts for AlumE\_44:

(Start: 7 @34896 has 18 MA's), (Start: 8 @34884 has 1 MA's), (Start: 12 @34872 has 2 MA's), (13, 34860), (Start: 15 @34842 has 17 MA's), (16, 34836), (19, 34800), (31, 34659), (34, 34623), (42, 34527), (44, 34509), (49, 34467), (51, 34401), (78, 34092),

Gene: Antonio\_44 Start: 34169, Stop: 33210, Start Num: 7

Candidate Starts for Antonio\_44:

(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 2 MA's), (13, 34133), (Start: 15 @34115 has 17 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42, 33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Apricot\_52 Start: 34675, Stop: 33923, Start Num: 15

Candidate Starts for Apricot\_52:

(Start: 15 @34675 has 17 MA's), (22, 34609), (24, 34561), (39, 34414), (47, 34354), (57, 34240), (78, 34066),

Gene: Attis\_39 Start: 31302, Stop: 30343, Start Num: 7

Candidate Starts for Attis\_39:

(Start: 7 @31302 has 18 MA's), (Start: 8 @31290 has 1 MA's), (Start: 12 @31278 has 2 MA's), (13, 31266), (Start: 15 @31248 has 17 MA's), (16, 31242), (19, 31206), (31, 31065), (34, 31029), (42, 30933), (44, 30915), (49, 30873), (51, 30807), (78, 30498), (79, 30477), (83, 30447),

Gene: Azula\_44 Start: 34596, Stop: 33832, Start Num: 10

Candidate Starts for Azula\_44:

(Start: 10 @34596 has 2 MA's), (Start: 12 @34590 has 2 MA's), (Start: 15 @34560 has 17 MA's), (19, 34524), (27, 34419), (29, 34404), (58, 34119), (69, 34038), (71, 33993), (72, 33960), (80, 33879), (82, 33864), (85, 33837),

Gene: Beenie\_37 Start: 32686, Stop: 31826, Start Num: 6

Candidate Starts for Beenie\_37:

(3, 32743), (5, 32710), (Start: 6 @32686 has 2 MA's), (Start: 12 @32659 has 2 MA's), (Start: 15 @32629 has 17 MA's), (19, 32584), (21, 32563), (22, 32557), (30, 32458), (31, 32452), (45, 32293), (46, 32284), (48, 32272), (56, 32176), (66, 32113), (74, 31975), (82, 31879),

Gene: Bialota\_42 Start: 34867, Stop: 33962, Start Num: 15

Candidate Starts for Bialota\_42:

(Start: 7 @34921 has 18 MA's), (Start: 8 @34909 has 1 MA's), (Start: 12 @34897 has 2 MA's), (13, 34885), (Start: 15 @34867 has 17 MA's), (16, 34861), (19, 34825), (31, 34684), (34, 34648), (42, 34552), (44, 34534), (49, 34492), (51, 34426), (78, 34117), (79, 34096), (83, 34066),

Gene: Blueberry\_43 Start: 34560, Stop: 33832, Start Num: 15

Candidate Starts for Blueberry\_43:

(Start: 10 @34596 has 2 MA's), (Start: 12 @34590 has 2 MA's), (Start: 15 @34560 has 17 MA's), (19, 34524), (27, 34419), (29, 34404), (58, 34119), (69, 34038), (71, 33993), (72, 33960), (80, 33879), (82, 33864), (85, 33837),

Gene: BoyNamedSue\_44 Start: 34842, Stop: 33937, Start Num: 15

Candidate Starts for BoyNamedSue\_44:

(Start: 7 @34896 has 18 MA's), (Start: 8 @34884 has 1 MA's), (Start: 12 @34872 has 2 MA's), (13, 34860), (Start: 15 @34842 has 17 MA's), (16, 34836), (19, 34800), (31, 34659), (34, 34623), (42, 34527), (44, 34509), (49, 34467), (51, 34401), (78, 34092),

Gene: Bradissa\_39 Start: 34156, Stop: 33251, Start Num: 15

Candidate Starts for Bradissa\_39:

(Start: 7 @34210 has 18 MA's), (Start: 8 @34198 has 1 MA's), (Start: 12 @34186 has 2 MA's), (13, 34174), (Start: 15 @34156 has 17 MA's), (16, 34150), (19, 34114), (31, 33973), (34, 33937), (44, 33823), (49, 33781), (51, 33715), (78, 33403), (79, 33382), (83, 33352),

Gene: Bunnybear\_37 Start: 32567, Stop: 31611, Start Num: 7

Candidate Starts for Bunnybear\_37:

(Start: 7 @32567 has 18 MA's), (Start: 8 @32555 has 1 MA's), (Start: 12 @32543 has 2 MA's), (13, 32531), (Start: 15 @32513 has 17 MA's), (16, 32507), (19, 32471), (21, 32450), (34, 32294), (78, 31766), (79, 31745), (84, 31703),

Gene: Crater\_52 Start: 35070, Stop: 34318, Start Num: 15

Candidate Starts for Crater\_52:

(Start: 15 @35070 has 17 MA's), (22, 35004), (24, 34956), (39, 34809), (47, 34749), (57, 34635), (78, 34461),

Gene: EdnaMode\_38 Start: 29990, Stop: 29031, Start Num: 7

Candidate Starts for EdnaMode\_38:

(Start: 7 @29990 has 18 MA's), (Start: 8 @29978 has 1 MA's), (Start: 12 @29966 has 2 MA's), (13, 29954), (Start: 15 @29936 has 17 MA's), (16, 29930), (19, 29894), (31, 29753), (34, 29717), (42, 29621), (44, 29603), (49, 29561), (51, 29495), (78, 29186), (79, 29165), (83, 29135),

Gene: EnalisNailo\_38 Start: 33720, Stop: 32785, Start Num: 12

Candidate Starts for EnalisNailo\_38:

(Start: 7 @33744 has 18 MA's), (Start: 8 @33732 has 1 MA's), (Start: 12 @33720 has 2 MA's), (13, 33708), (Start: 15 @33690 has 17 MA's), (16, 33684), (19, 33648), (31, 33507), (34, 33471), (44, 33357), (49, 33315), (51, 33249), (78, 32937), (79, 32916), (83, 32886),

Gene: Eudoria\_44 Start: 34169, Stop: 33210, Start Num: 7

Candidate Starts for Eudoria\_44:

(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 2 MA's), (13, 34133), (Start: 15 @34115 has 17 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42, 33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Fenry\_40 Start: 33564, Stop: 32836, Start Num: 15

Candidate Starts for Fenry\_40:

(Start: 10 @33600 has 2 MA's), (Start: 12 @33594 has 2 MA's), (Start: 15 @33564 has 17 MA's), (19, 33528), (22, 33504), (27, 33423), (29, 33408), (58, 33123), (69, 33042), (71, 32997), (72, 32964), (82, 32868), (85, 32841),

Gene: Frickyeah\_57 Start: 35160, Stop: 34366, Start Num: 20

Candidate Starts for Frickyeah\_57:

(1, 35382), (Start: 15 @35208 has 17 MA's), (20, 35160), (25, 35085), (33, 35019), (37, 34947), (59, 34722), (60, 34716), (62, 34695), (65, 34680), (73, 34548),

Gene: Frokostdame\_44 Start: 34314, Stop: 33496, Start Num: 12

Candidate Starts for Frokostdame\_44:

(3, 34398), (Start: 6 @34341 has 2 MA's), (Start: 7 @34338 has 18 MA's), (Start: 12 @34314 has 2 MA's), (Start: 15 @34284 has 17 MA's), (17, 34272), (19, 34251), (21, 34230), (23, 34209), (24, 34176), (26, 34155), (41, 33990), (49, 33933), (52, 33858), (61, 33780), (63, 33771), (67, 33744), (68, 33714), (70, 33672), (82, 33528), (85, 33501),

Gene: Gambino\_46 Start: 34596, Stop: 33832, Start Num: 10

Candidate Starts for Gambino\_46:

(Start: 10 @34596 has 2 MA's), (Start: 12 @34590 has 2 MA's), (Start: 15 @34560 has 17 MA's), (19, 34524), (27, 34419), (29, 34404), (58, 34119), (69, 34038), (71, 33993), (72, 33960), (80, 33879), (82, 33864), (85, 33837),

Gene: Hyzer\_49 Start: 37168, Stop: 36215, Start Num: 7

Candidate Starts for Hyzer\_49:

(Start: 7 @37168 has 18 MA's), (Start: 12 @37144 has 2 MA's), (13, 37132), (Start: 15 @37114 has 17 MA's), (16, 37108), (19, 37072), (31, 36931), (32, 36925), (34, 36895), (40, 36817), (44, 36781), (49, 36739), (54, 36652), (64, 36568), (75, 36415), (76, 36388), (78, 36370), (83, 36319),

Gene: Invectra\_45 Start: 34077, Stop: 33217, Start Num: 6

Candidate Starts for Invectra\_45:

(3, 34134), (5, 34101), (Start: 6 @34077 has 2 MA's), (Start: 12 @34050 has 2 MA's), (Start: 15 @34020 has 17 MA's), (19, 33975), (21, 33954), (22, 33948), (30, 33849), (31, 33843), (45, 33684), (46, 33675), (48, 33663), (56, 33567), (66, 33504), (74, 33366), (82, 33270),

Gene: Jalammah\_45 Start: 34877, Stop: 34149, Start Num: 15

Candidate Starts for Jalammah\_45:

(Start: 10 @34913 has 2 MA's), (Start: 12 @34907 has 2 MA's), (Start: 15 @34877 has 17 MA's), (19, 34841), (22, 34817), (27, 34736), (29, 34721), (58, 34436), (69, 34355), (71, 34310), (72, 34277), (82, 34181), (85, 34154),

Gene: KappaFarmDelta\_43 Start: 32505, Stop: 31777, Start Num: 15

Candidate Starts for KappaFarmDelta\_43:

(Start: 10 @32541 has 2 MA's), (Start: 12 @32535 has 2 MA's), (Start: 15 @32505 has 17 MA's), (19, 32469), (22, 32445), (27, 32364), (29, 32349), (58, 32064), (69, 31983), (71, 31938), (72, 31905), (82, 31809), (85, 31782),

Gene: Kita\_45 Start: 34166, Stop: 33219, Start Num: 8

Candidate Starts for Kita\_45:

(Start: 7 @34178 has 18 MA's), (Start: 8 @34166 has 1 MA's), (Start: 12 @34154 has 2 MA's), (13, 34142), (Start: 15 @34124 has 17 MA's), (16, 34118), (19, 34082), (31, 33941), (34, 33905), (42, 33809), (44, 33791), (49, 33749), (51, 33683), (78, 33374), (79, 33353), (83, 33323),

Gene: Kuwabara\_49 Start: 35751, Stop: 34855, Start Num: 15

Candidate Starts for Kuwabara\_49:

(2, 35874), (Start: 15 @35751 has 17 MA's), (22, 35688), (25, 35628), (29, 35592), (38, 35490), (49, 35385), (50, 35370), (53, 35304), (55, 35280), (63, 35220), (80, 34983), (85, 34941), (86, 34887), (87, 34860),

Gene: Lilas\_41 Start: 35455, Stop: 34496, Start Num: 7

Candidate Starts for Lilas\_41:

(Start: 7 @35455 has 18 MA's), (Start: 8 @35443 has 1 MA's), (Start: 12 @35431 has 2 MA's), (13, 35419), (Start: 15 @35401 has 17 MA's), (16, 35395), (19, 35359), (31, 35218), (34, 35182), (44, 35068), (49, 35026), (51, 34960), (78, 34648), (79, 34627), (83, 34597),

Gene: LordFarquaad\_41 Start: 31283, Stop: 30324, Start Num: 7

Candidate Starts for LordFarquaad\_41:

(Start: 7 @31283 has 18 MA's), (Start: 8 @31271 has 1 MA's), (Start: 12 @31259 has 2 MA's), (13, 31247), (Start: 15 @31229 has 17 MA's), (16, 31223), (19, 31187), (31, 31046), (34, 31010), (42, 30914), (44, 30896), (49, 30854), (51, 30788), (78, 30479), (79, 30458), (83, 30428),

Gene: Lton\_37 Start: 27834, Stop: 26986, Start Num: 15

Candidate Starts for Lton\_37:

(4, 27918), (9, 27870), (11, 27867), (Start: 14 @27840 has 1 MA's), (Start: 15 @27834 has 17 MA's), (22, 27771), (34, 27627), (35, 27603), (49, 27507), (50, 27492), (53, 27426), (55, 27402), (63, 27342), (77, 27138), (81, 27099),

Gene: Maridalia\_45 Start: 34313, Stop: 33357, Start Num: 7

Candidate Starts for Maridalia\_45:

(Start: 7 @34313 has 18 MA's), (Start: 8 @34301 has 1 MA's), (Start: 12 @34289 has 2 MA's), (13, 34277), (Start: 15 @34259 has 17 MA's), (16, 34253), (19, 34217), (21, 34196), (34, 34040), (78, 33512), (79, 33491), (84, 33449),

Gene: MissRona\_44 Start: 34561, Stop: 33833, Start Num: 15

Candidate Starts for MissRona\_44:

(Start: 10 @34597 has 2 MA's), (Start: 12 @34591 has 2 MA's), (Start: 15 @34561 has 17 MA's), (19, 34525), (27, 34420), (29, 34405), (58, 34120), (69, 34039), (71, 33994), (72, 33961), (80, 33880), (82, 33865), (85, 33838),

Gene: Neobush\_44 Start: 34163, Stop: 33204, Start Num: 7

Candidate Starts for Neobush\_44:

(Start: 7 @34163 has 18 MA's), (Start: 8 @34151 has 1 MA's), (Start: 12 @34139 has 2 MA's), (13, 34127), (Start: 15 @34109 has 17 MA's), (16, 34103), (19, 34067), (31, 33926), (34, 33890), (42, 33794), (44, 33776), (49, 33734), (51, 33668), (78, 33359), (79, 33338), (83, 33308),

Gene: Phistory\_54 Start: 35622, Stop: 34870, Start Num: 15

Candidate Starts for Phistory\_54:

(Start: 15 @35622 has 17 MA's), (22, 35556), (24, 35508), (39, 35361), (47, 35301), (57, 35187), (78, 35013),

Gene: PhorbesPhlower\_36 Start: 28118, Stop: 27366, Start Num: 15

Candidate Starts for PhorbesPhlower\_36:

(Start: 15 @28118 has 17 MA's), (22, 28052), (24, 28004), (39, 27857), (47, 27797), (57, 27683), (78, 27509),



Gene: Pickett\_37 Start: 28466, Stop: 27507, Start Num: 7

Candidate Starts for Pickett\_37:

(Start: 7 @28466 has 18 MA's), (Start: 8 @28454 has 1 MA's), (Start: 12 @28442 has 2 MA's), (13, 28430), (Start: 15 @28412 has 17 MA's), (16, 28406), (19, 28370), (31, 28229), (34, 28193), (42, 28097), (44, 28079), (49, 28037), (51, 27971), (78, 27662), (79, 27641), (83, 27611),

Gene: Polly\_41 Start: 33612, Stop: 32653, Start Num: 7

Candidate Starts for Polly\_41:

(Start: 7 @33612 has 18 MA's), (Start: 8 @33600 has 1 MA's), (Start: 12 @33588 has 2 MA's), (13, 33576), (Start: 15 @33558 has 17 MA's), (16, 33552), (19, 33516), (31, 33375), (34, 33339), (42, 33243), (44, 33225), (49, 33183), (51, 33117), (78, 32808), (79, 32787), (83, 32757),

Gene: Posh\_46 Start: 35855, Stop: 34893, Start Num: 7

Candidate Starts for Posh\_46:

(Start: 7 @35855 has 18 MA's), (Start: 8 @35843 has 1 MA's), (Start: 12 @35831 has 2 MA's), (13, 35819), (Start: 15 @35801 has 17 MA's), (16, 35795), (19, 35759), (31, 35618), (32, 35612), (34, 35582), (36, 35552), (44, 35468), (49, 35426), (51, 35360), (78, 35048), (79, 35027), (83, 34997),

Gene: Sekhmet\_44 Start: 33506, Stop: 32646, Start Num: 6

Candidate Starts for Sekhmet\_44:

(3, 33563), (5, 33530), (Start: 6 @33506 has 2 MA's), (Start: 12 @33479 has 2 MA's), (Start: 15 @33449 has 17 MA's), (19, 33404), (21, 33383), (22, 33377), (30, 33278), (31, 33272), (45, 33113), (46, 33104), (48, 33092), (56, 32996), (66, 32933), (74, 32795), (82, 32699),

Gene: SoilAssassin\_39 Start: 31301, Stop: 30342, Start Num: 7

Candidate Starts for SoilAssassin\_39:

(Start: 7 @31301 has 18 MA's), (Start: 8 @31289 has 1 MA's), (Start: 12 @31277 has 2 MA's), (13, 31265), (Start: 15 @31247 has 17 MA's), (16, 31241), (19, 31205), (31, 31064), (34, 31028), (42, 30932), (44, 30914), (49, 30872), (51, 30806), (78, 30497), (79, 30476), (83, 30446),

Gene: Suscepit\_44 Start: 34170, Stop: 33211, Start Num: 7

Candidate Starts for Suscepit\_44:

(Start: 7 @34170 has 18 MA's), (Start: 8 @34158 has 1 MA's), (Start: 12 @34146 has 2 MA's), (13, 34134), (Start: 15 @34116 has 17 MA's), (16, 34110), (19, 34074), (31, 33933), (34, 33897), (42, 33801), (44, 33783), (49, 33741), (51, 33675), (78, 33366), (79, 33345), (83, 33315),

Gene: Tayonia\_44 Start: 34169, Stop: 33210, Start Num: 7

Candidate Starts for Tayonia\_44:

(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 2 MA's), (13, 34133), (Start: 15 @34115 has 17 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42, 33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Trumpet\_44 Start: 34170, Stop: 33211, Start Num: 7

Candidate Starts for Trumpet\_44:

(Start: 7 @34170 has 18 MA's), (Start: 8 @34158 has 1 MA's), (Start: 12 @34146 has 2 MA's), (13, 34134), (Start: 15 @34116 has 17 MA's), (16, 34110), (19, 34074), (31, 33933), (34, 33897), (42, 33801), (44, 33783), (49, 33741), (51, 33675), (78, 33366), (79, 33345), (83, 33315),

Gene: Wocket\_42 Start: 32670, Stop: 31942, Start Num: 15

Candidate Starts for Wocket\_42:

(Start: 10 @32706 has 2 MA's), (Start: 12 @32700 has 2 MA's), (Start: 15 @32670 has 17 MA's), (19, 32634), (22, 32610), (27, 32529), (29, 32514), (58, 32229), (69, 32148), (71, 32103), (72, 32070), (82, 31974), (85, 31947),

Gene: Yeet412\_39 Start: 31302, Stop: 30343, Start Num: 7

Candidate Starts for Yeet412\_39:

(Start: 7 @31302 has 18 MA's), (Start: 8 @31290 has 1 MA's), (Start: 12 @31278 has 2 MA's), (13, 31266), (Start: 15 @31248 has 17 MA's), (16, 31242), (19, 31206), (31, 31065), (34, 31029), (42, 30933), (44, 30915), (49, 30873), (51, 30807), (78, 30498), (79, 30477), (83, 30447),

Gene: Yeezy\_39 Start: 31783, Stop: 30884, Start Num: 14

Candidate Starts for Yeezy\_39:

(Start: 6 @31834 has 2 MA's), (Start: 7 @31831 has 18 MA's), (Start: 12 @31807 has 2 MA's), (Start: 14 @31783 has 1 MA's), (Start: 15 @31777 has 17 MA's), (18, 31753), (28, 31627), (32, 31594), (40, 31489), (43, 31456), (78, 31039), (79, 31018),

Gene: Zameen\_44 Start: 34169, Stop: 33210, Start Num: 7

Candidate Starts for Zameen\_44:

(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 2 MA's), (13, 34133), (Start: 15 @34115 has 17 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42, 33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Zirinka\_41 Start: 34855, Stop: 33950, Start Num: 15

Candidate Starts for Zirinka\_41:

(Start: 7 @34909 has 18 MA's), (Start: 8 @34897 has 1 MA's), (Start: 12 @34885 has 2 MA's), (13, 34873), (Start: 15 @34855 has 17 MA's), (16, 34849), (19, 34813), (31, 34672), (34, 34636), (42, 34540), (44, 34522), (49, 34480), (51, 34414), (78, 34105), (79, 34084), (83, 34054),