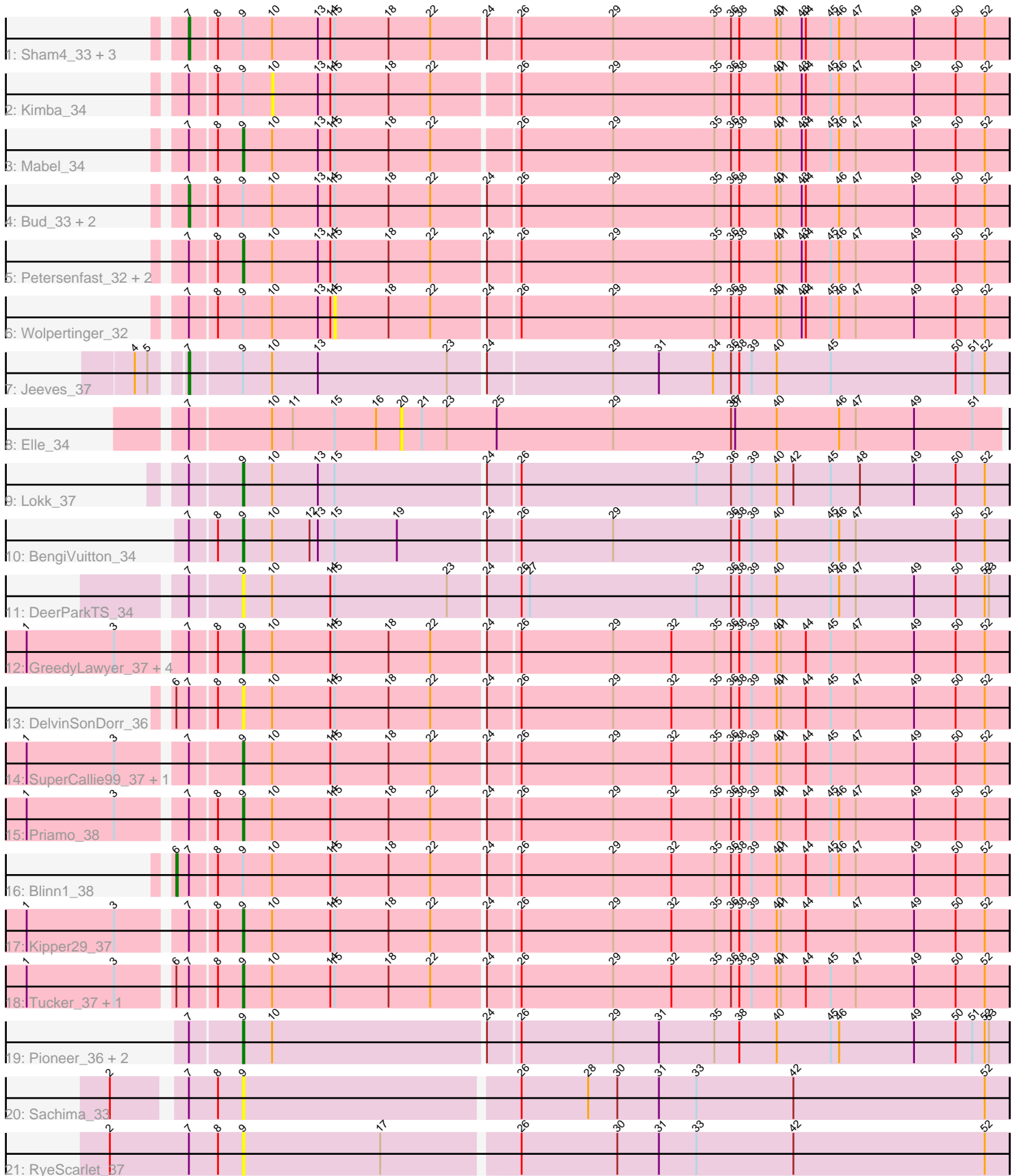


# Pham 311817



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 311817 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311817 has 36 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Sham4\_33, Gilberta\_34, Flaverint\_34, MaCh\_34
- Track 2 : Kimba\_34
- Track 3 : Mabel\_34
- Track 4 : Bud\_33, Hutc2\_33, Bowtie\_34
- Track 5 : Petersenfast\_32, Saskia\_33, Bachome\_35
- Track 6 : Wolpertinger\_32
- Track 7 : Jeeves\_37
- Track 8 : Elle\_34
- Track 9 : Lokk\_37
- Track 10 : BengiVuitton\_34
- Track 11 : DeerParkTS\_34
- Track 12 : GreedyLawyer\_37, Garak\_38, BlessJoy\_37, ToneTone\_34, Candra\_37
- Track 13 : DelvinSonDorr\_36
- Track 14 : SuperCallie99\_37, Gruunaga\_37
- Track 15 : Priamo\_38
- Track 16 : Blinn1\_38
- Track 17 : Kipper29\_37
- Track 18 : Tucker\_37, Wiks\_36
- Track 19 : Pioneer\_36, Ayanochan\_36, ExplosioNervosa\_36
- Track 20 : Sachima\_33
- Track 21 : RyeScarlet\_37

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

The start number called the most often in the published annotations is 9, it was called in 15 of the 24 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ayanochan\_36, Bachome\_35, BengiVuitton\_34, BlessJoy\_37, Candra\_37, DeerParkTS\_34, DelvinSonDorr\_36, ExplosioNervosa\_36, Garak\_38, GreedyLawyer\_37, Gruunaga\_37, Kipper29\_37, Lokk\_37, Mabel\_34, Petersenfast\_32, Pioneer\_36, Priamo\_38, RyeScarlet\_37, Sachima\_33, Saskia\_33, SuperCallie99\_37, ToneTone\_34, Tucker\_37, Wiks\_36,

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

- Blinn1\_38, Bowtie\_34, Bud\_33, Flaverint\_34, Gilberta\_34, Hutc2\_33, Jeeves\_37, Kimba\_34, MaCh\_34, Sham4\_33, Wolpertinger\_32,

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

- Elle\_34,

### Summary by start number:

Start 6:

- Found in 4 of 36 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 1 of 24
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Blinn1\_38 (A6),

Start 7:

- Found in 36 of 36 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 8 of 24
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Bowtie\_34 (A11), Bud\_33 (A11), Flaverint\_34 (A11), Gilberta\_34 (A11), Hutc2\_33 (A11), Jeeves\_37 (A14), MaCh\_34 (A11), Sham4\_33 (A11),

Start 9:

- Found in 35 of 36 ( 97.2% ) of genes in pham
- Manual Annotations of this start: 15 of 24
- Called 68.6% of time when present
- Phage (with cluster) where this start called: Ayanochan\_36 (A9), Bachome\_35 (A11), BengiVuitton\_34 (A2), BlessJoy\_37 (A6), Candra\_37 (A6), DeerParkTS\_34 (A2), DelvinSonDorr\_36 (A6), ExplosioNervosa\_36 (A9), Garak\_38 (A6), GreedyLawyer\_37 (A6), Gruunaga\_37 (A6), Kipper29\_37 (A6), Lokk\_37 (A2), Mabel\_34 (A11), Petersenfast\_32 (A11), Pioneer\_36 (A9), Priamo\_38 (A6), RyeScarlet\_37 (A9), Sachima\_33 (A9), Saskia\_33 (A11), SuperCallie99\_37 (A6), ToneTone\_34 (A6), Tucker\_37 (A6), Wiks\_36 (A6),

Start 10:

- Found in 34 of 36 ( 94.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Kimba\_34 (A11),

Start 15:

- Found in 30 of 36 ( 83.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.3% of time when present
- Phage (with cluster) where this start called: Wolpertinger\_32 (A11),

Start 20:

- Found in 1 of 36 ( 2.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elle\_34 (A15),

## Summary by clusters:

There are 6 clusters represented in this pham: A15, A14, A11, A2, A6, A9,

Info for manual annotations of cluster A11:

- Start number 7 was manually annotated 7 times for cluster A11.
- Start number 9 was manually annotated 2 times for cluster A11.

Info for manual annotations of cluster A14:

- Start number 7 was manually annotated 1 time for cluster A14.

Info for manual annotations of cluster A2:

- Start number 9 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A6:

- Start number 6 was manually annotated 1 time for cluster A6.
- Start number 9 was manually annotated 9 times for cluster A6.

Info for manual annotations of cluster A9:

- Start number 9 was manually annotated 2 times for cluster A9.

## Gene Information:

Gene: Ayanochan\_36 Start: 27076, Stop: 27618, Start Num: 9

Candidate Starts for Ayanochan\_36:

(Start: 7 @27040 has 8 MA's), (Start: 9 @27076 has 15 MA's), (10, 27097), (24, 27247), (26, 27268), (29, 27334), (31, 27367), (35, 27406), (38, 27424), (40, 27451), (45, 27490), (46, 27496), (49, 27550), (50, 27580), (51, 27592), (52, 27601), (53, 27604),

Gene: Bachome\_35 Start: 26144, Stop: 26686, Start Num: 9

Candidate Starts for Bachome\_35:

(Start: 7 @26108 has 8 MA's), (8, 26126), (Start: 9 @26144 has 15 MA's), (10, 26165), (13, 26198), (14, 26207), (15, 26210), (18, 26249), (22, 26279), (24, 26315), (26, 26336), (29, 26402), (35, 26474), (36, 26486), (38, 26492), (40, 26519), (41, 26522), (43, 26537), (44, 26540), (45, 26558), (46, 26564), (47, 26576), (49, 26618), (50, 26648), (52, 26669),

Gene: BengiVuitton\_34 Start: 26453, Stop: 26995, Start Num: 9

Candidate Starts for BengiVuitton\_34:

(Start: 7 @26417 has 8 MA's), (8, 26435), (Start: 9 @26453 has 15 MA's), (10, 26474), (12, 26501), (13, 26507), (15, 26519), (19, 26564), (24, 26624), (26, 26645), (29, 26711), (36, 26795), (38, 26801), (39, 26810), (40, 26828), (45, 26867), (46, 26873), (47, 26885), (50, 26957), (52, 26978),

Gene: BlessJoy\_37 Start: 25105, Stop: 25647, Start Num: 9

Candidate Starts for BlessJoy\_37:

(1, 24961), (3, 25024), (Start: 7 @25069 has 8 MA's), (8, 25087), (Start: 9 @25105 has 15 MA's), (10, 25126), (14, 25168), (15, 25171), (18, 25210), (22, 25240), (24, 25276), (26, 25297), (29, 25363), (32, 25405), (35, 25435), (36, 25447), (38, 25453), (39, 25462), (40, 25480), (41, 25483), (44, 25501), (45, 25519), (47, 25537), (49, 25579), (50, 25609), (52, 25630),

Gene: Blinn1\_38 Start: 25132, Stop: 25719, Start Num: 6

Candidate Starts for Blinn1\_38:

(Start: 6 @25132 has 1 MA's), (Start: 7 @25141 has 8 MA's), (8, 25159), (Start: 9 @25177 has 15 MA's), (10, 25198), (14, 25240), (15, 25243), (18, 25282), (22, 25312), (24, 25348), (26, 25369), (29, 25435), (32, 25477), (35, 25507), (36, 25519), (38, 25525), (39, 25534), (40, 25552), (41, 25555), (44, 25573), (45, 25591), (46, 25597), (47, 25609), (49, 25651), (50, 25681), (52, 25702),

Gene: Bowtie\_34 Start: 26120, Stop: 26698, Start Num: 7

Candidate Starts for Bowtie\_34:

(Start: 7 @26120 has 8 MA's), (8, 26138), (Start: 9 @26156 has 15 MA's), (10, 26177), (13, 26210), (14, 26219), (15, 26222), (18, 26261), (22, 26291), (24, 26327), (26, 26348), (29, 26414), (35, 26486), (36, 26498), (38, 26504), (40, 26531), (41, 26534), (43, 26549), (44, 26552), (46, 26576), (47, 26588), (49, 26630), (50, 26660), (52, 26681),

Gene: Bud\_33 Start: 25675, Stop: 26253, Start Num: 7

Candidate Starts for Bud\_33:

(Start: 7 @25675 has 8 MA's), (8, 25693), (Start: 9 @25711 has 15 MA's), (10, 25732), (13, 25765), (14, 25774), (15, 25777), (18, 25816), (22, 25846), (24, 25882), (26, 25903), (29, 25969), (35, 26041), (36, 26053), (38, 26059), (40, 26086), (41, 26089), (43, 26104), (44, 26107), (46, 26131), (47, 26143), (49, 26185), (50, 26215), (52, 26236),

Gene: Candra\_37 Start: 25146, Stop: 25688, Start Num: 9

Candidate Starts for Candra\_37:

(1, 25002), (3, 25065), (Start: 7 @25110 has 8 MA's), (8, 25128), (Start: 9 @25146 has 15 MA's), (10, 25167), (14, 25209), (15, 25212), (18, 25251), (22, 25281), (24, 25317), (26, 25338), (29, 25404), (32, 25446), (35, 25476), (36, 25488), (38, 25494), (39, 25503), (40, 25521), (41, 25524), (44, 25542), (45, 25560), (47, 25578), (49, 25620), (50, 25650), (52, 25671),

Gene: DeerParkTS\_34 Start: 26427, Stop: 26972, Start Num: 9

Candidate Starts for DeerParkTS\_34:

(Start: 7 @26391 has 8 MA's), (Start: 9 @26427 has 15 MA's), (10, 26448), (14, 26490), (15, 26493), (23, 26574), (24, 26598), (26, 26622), (27, 26628), (33, 26748), (36, 26772), (38, 26778), (39, 26787), (40, 26805), (45, 26844), (46, 26850), (47, 26862), (49, 26904), (50, 26934), (52, 26955), (53, 26958),

Gene: DelvinSonDorr\_36 Start: 25104, Stop: 25646, Start Num: 9

Candidate Starts for DelvinSonDorr\_36:

(Start: 6 @25059 has 1 MA's), (Start: 7 @25068 has 8 MA's), (8, 25086), (Start: 9 @25104 has 15 MA's), (10, 25125), (14, 25167), (15, 25170), (18, 25209), (22, 25239), (24, 25275), (26, 25296), (29, 25362), (32, 25404), (35, 25434), (36, 25446), (38, 25452), (39, 25461), (40, 25479), (41, 25482), (44, 25500), (45, 25518), (47, 25536), (49, 25578), (50, 25608), (52, 25629),

Gene: Elle\_34 Start: 24107, Stop: 24538, Start Num: 20

Candidate Starts for Elle\_34:

(Start: 7 @23957 has 8 MA's), (10, 24014), (11, 24029), (15, 24059), (16, 24089), (20, 24107), (21, 24122), (23, 24140), (25, 24176), (29, 24260), (36, 24344), (37, 24347), (40, 24377), (46, 24422), (47, 24434), (49, 24476), (51, 24518),

Gene: ExplosioNervosa\_36 Start: 27111, Stop: 27653, Start Num: 9

Candidate Starts for ExplosioNervosa\_36:

(Start: 7 @27075 has 8 MA's), (Start: 9 @27111 has 15 MA's), (10, 27132), (24, 27282), (26, 27303), (29, 27369), (31, 27402), (35, 27441), (38, 27459), (40, 27486), (45, 27525), (46, 27531), (49, 27585), (50, 27615), (51, 27627), (52, 27636), (53, 27639),

Gene: Flaverint\_34 Start: 26114, Stop: 26692, Start Num: 7

Candidate Starts for Flaverint\_34:

(Start: 7 @26114 has 8 MA's), (8, 26132), (Start: 9 @26150 has 15 MA's), (10, 26171), (13, 26204), (14, 26213), (15, 26216), (18, 26255), (22, 26285), (24, 26321), (26, 26342), (29, 26408), (35, 26480), (36, 26492), (38, 26498), (40, 26525), (41, 26528), (43, 26543), (44, 26546), (45, 26564), (46, 26570), (47, 26582), (49, 26624), (50, 26654), (52, 26675),

Gene: Garak\_38 Start: 25111, Stop: 25653, Start Num: 9

Candidate Starts for Garak\_38:

(1, 24967), (3, 25030), (Start: 7 @25075 has 8 MA's), (8, 25093), (Start: 9 @25111 has 15 MA's), (10, 25132), (14, 25174), (15, 25177), (18, 25216), (22, 25246), (24, 25282), (26, 25303), (29, 25369), (32, 25411), (35, 25441), (36, 25453), (38, 25459), (39, 25468), (40, 25486), (41, 25489), (44, 25507), (45, 25525), (47, 25543), (49, 25585), (50, 25615), (52, 25636),

Gene: Gilberta\_34 Start: 26111, Stop: 26689, Start Num: 7

Candidate Starts for Gilberta\_34:

(Start: 7 @26111 has 8 MA's), (8, 26129), (Start: 9 @26147 has 15 MA's), (10, 26168), (13, 26201), (14, 26210), (15, 26213), (18, 26252), (22, 26282), (24, 26318), (26, 26339), (29, 26405), (35, 26477), (36, 26489), (38, 26495), (40, 26522), (41, 26525), (43, 26540), (44, 26543), (45, 26561), (46, 26567), (47, 26579), (49, 26621), (50, 26651), (52, 26672),

Gene: GreedyLawyer\_37 Start: 25110, Stop: 25652, Start Num: 9

Candidate Starts for GreedyLawyer\_37:

(1, 24966), (3, 25029), (Start: 7 @25074 has 8 MA's), (8, 25092), (Start: 9 @25110 has 15 MA's), (10, 25131), (14, 25173), (15, 25176), (18, 25215), (22, 25245), (24, 25281), (26, 25302), (29, 25368), (32, 25410), (35, 25440), (36, 25452), (38, 25458), (39, 25467), (40, 25485), (41, 25488), (44, 25506), (45, 25524), (47, 25542), (49, 25584), (50, 25614), (52, 25635),

Gene: Gruunaga\_37 Start: 25099, Stop: 25641, Start Num: 9

Candidate Starts for Gruunaga\_37:

(1, 24955), (3, 25018), (Start: 7 @25063 has 8 MA's), (Start: 9 @25099 has 15 MA's), (10, 25120), (14, 25162), (15, 25165), (18, 25204), (22, 25234), (24, 25270), (26, 25291), (29, 25357), (32, 25399), (35, 25429), (36, 25441), (38, 25447), (39, 25456), (40, 25474), (41, 25477), (44, 25495), (45, 25513), (47, 25531), (49, 25573), (50, 25603), (52, 25624),

Gene: Hutc2\_33 Start: 25667, Stop: 26245, Start Num: 7

Candidate Starts for Hutc2\_33:

(Start: 7 @25667 has 8 MA's), (8, 25685), (Start: 9 @25703 has 15 MA's), (10, 25724), (13, 25757), (14, 25766), (15, 25769), (18, 25808), (22, 25838), (24, 25874), (26, 25895), (29, 25961), (35, 26033), (36, 26045), (38, 26051), (40, 26078), (41, 26081), (43, 26096), (44, 26099), (46, 26123), (47, 26135), (49, 26177), (50, 26207), (52, 26228),

Gene: Jeeves\_37 Start: 26658, Stop: 27236, Start Num: 7

Candidate Starts for Jeeves\_37:

(4, 26631), (5, 26640), (Start: 7 @26658 has 8 MA's), (Start: 9 @26694 has 15 MA's), (10, 26715), (13, 26748), (23, 26841), (24, 26865), (29, 26952), (31, 26985), (34, 27024), (36, 27036), (38, 27042), (39, 27051), (40, 27069), (45, 27108), (50, 27198), (51, 27210), (52, 27219),

Gene: Kimba\_34 Start: 26141, Stop: 26662, Start Num: 10

Candidate Starts for Kimba\_34:

(Start: 7 @26084 has 8 MA's), (8, 26102), (Start: 9 @26120 has 15 MA's), (10, 26141), (13, 26174), (14, 26183), (15, 26186), (18, 26225), (22, 26255), (26, 26312), (29, 26378), (35, 26450), (36, 26462), (38, 26468), (40, 26495), (41, 26498), (43, 26513), (44, 26516), (45, 26534), (46, 26540), (47, 26552), (49, 26594), (50, 26624), (52, 26645),

Gene: Kipper29\_37 Start: 25110, Stop: 25652, Start Num: 9

Candidate Starts for Kipper29\_37:

(1, 24966), (3, 25029), (Start: 7 @25074 has 8 MA's), (8, 25092), (Start: 9 @25110 has 15 MA's), (10, 25131), (14, 25173), (15, 25176), (18, 25215), (22, 25245), (24, 25281), (26, 25302), (29, 25368), (32, 25410), (35, 25440), (36, 25452), (38, 25458), (39, 25467), (40, 25485), (41, 25488), (44, 25506), (47, 25542), (49, 25584), (50, 25614), (52, 25635),

Gene: Lokk\_37 Start: 27588, Stop: 28130, Start Num: 9

Candidate Starts for Lokk\_37:

(Start: 7 @27552 has 8 MA's), (Start: 9 @27588 has 15 MA's), (10, 27609), (13, 27642), (15, 27654), (24, 27759), (26, 27780), (33, 27906), (36, 27930), (39, 27945), (40, 27963), (42, 27975), (45, 28002), (48, 28023), (49, 28062), (50, 28092), (52, 28113),

Gene: MaCh\_34 Start: 26108, Stop: 26686, Start Num: 7

Candidate Starts for MaCh\_34:

(Start: 7 @26108 has 8 MA's), (8, 26126), (Start: 9 @26144 has 15 MA's), (10, 26165), (13, 26198), (14, 26207), (15, 26210), (18, 26249), (22, 26279), (24, 26315), (26, 26336), (29, 26402), (35, 26474), (36, 26486), (38, 26492), (40, 26519), (41, 26522), (43, 26537), (44, 26540), (45, 26558), (46, 26564), (47, 26576), (49, 26618), (50, 26648), (52, 26669),

Gene: Mabel\_34 Start: 26118, Stop: 26660, Start Num: 9

Candidate Starts for Mabel\_34:

(Start: 7 @26082 has 8 MA's), (8, 26100), (Start: 9 @26118 has 15 MA's), (10, 26139), (13, 26172), (14, 26181), (15, 26184), (18, 26223), (22, 26253), (26, 26310), (29, 26376), (35, 26448), (36, 26460), (38, 26466), (40, 26493), (41, 26496), (43, 26511), (44, 26514), (45, 26532), (46, 26538), (47, 26550), (49, 26592), (50, 26622), (52, 26643),

Gene: Petersenfast\_32 Start: 25704, Stop: 26246, Start Num: 9

Candidate Starts for Petersenfast\_32:

(Start: 7 @25668 has 8 MA's), (8, 25686), (Start: 9 @25704 has 15 MA's), (10, 25725), (13, 25758), (14, 25767), (15, 25770), (18, 25809), (22, 25839), (24, 25875), (26, 25896), (29, 25962), (35, 26034), (36, 26046), (38, 26052), (40, 26079), (41, 26082), (43, 26097), (44, 26100), (45, 26118), (46, 26124), (47, 26136), (49, 26178), (50, 26208), (52, 26229),

Gene: Pioneer\_36 Start: 27076, Stop: 27618, Start Num: 9

Candidate Starts for Pioneer\_36:

(Start: 7 @27040 has 8 MA's), (Start: 9 @27076 has 15 MA's), (10, 27097), (24, 27247), (26, 27268), (29, 27334), (31, 27367), (35, 27406), (38, 27424), (40, 27451), (45, 27490), (46, 27496), (49, 27550), (50, 27580), (51, 27592), (52, 27601), (53, 27604),

Gene: Priamo\_38 Start: 25149, Stop: 25691, Start Num: 9

Candidate Starts for Priamo\_38:

(1, 25005), (3, 25068), (Start: 7 @25113 has 8 MA's), (8, 25131), (Start: 9 @25149 has 15 MA's), (10, 25170), (14, 25212), (15, 25215), (18, 25254), (22, 25284), (24, 25320), (26, 25341), (29, 25407), (32, 25449), (35, 25479), (36, 25491), (38, 25497), (39, 25506), (40, 25524), (41, 25527), (44, 25545), (45, 25563), (46, 25569), (47, 25581), (49, 25623), (50, 25653), (52, 25674),

Gene: RyeScarlet\_37 Start: 27076, Stop: 27618, Start Num: 9

Candidate Starts for RyeScarlet\_37:

(2, 26980), (Start: 7 @27037 has 8 MA's), (8, 27058), (Start: 9 @27076 has 15 MA's), (17, 27175), (26, 27268), (30, 27337), (31, 27367), (33, 27394), (42, 27463), (52, 27601),

Gene: Sachima\_33 Start: 27052, Stop: 27594, Start Num: 9

Candidate Starts for Sachima\_33:

(2, 26968), (Start: 7 @27013 has 8 MA's), (8, 27034), (Start: 9 @27052 has 15 MA's), (26, 27244), (28, 27292), (30, 27313), (31, 27343), (33, 27370), (42, 27439), (52, 27577),

Gene: Saskia\_33 Start: 25901, Stop: 26443, Start Num: 9

Candidate Starts for Saskia\_33:

(Start: 7 @25865 has 8 MA's), (8, 25883), (Start: 9 @25901 has 15 MA's), (10, 25922), (13, 25955), (14, 25964), (15, 25967), (18, 26006), (22, 26036), (24, 26072), (26, 26093), (29, 26159), (35, 26231), (36, 26243), (38, 26249), (40, 26276), (41, 26279), (43, 26294), (44, 26297), (45, 26315), (46, 26321), (47, 26333), (49, 26375), (50, 26405), (52, 26426),

Gene: Sham4\_33 Start: 25667, Stop: 26245, Start Num: 7

Candidate Starts for Sham4\_33:

(Start: 7 @25667 has 8 MA's), (8, 25685), (Start: 9 @25703 has 15 MA's), (10, 25724), (13, 25757), (14, 25766), (15, 25769), (18, 25808), (22, 25838), (24, 25874), (26, 25895), (29, 25961), (35, 26033), (36, 26045), (38, 26051), (40, 26078), (41, 26081), (43, 26096), (44, 26099), (45, 26117), (46, 26123), (47, 26135), (49, 26177), (50, 26207), (52, 26228),

Gene: SuperCallie99\_37 Start: 25102, Stop: 25644, Start Num: 9

Candidate Starts for SuperCallie99\_37:

(1, 24958), (3, 25021), (Start: 7 @25066 has 8 MA's), (Start: 9 @25102 has 15 MA's), (10, 25123), (14, 25165), (15, 25168), (18, 25207), (22, 25237), (24, 25273), (26, 25294), (29, 25360), (32, 25402), (35, 25432), (36, 25444), (38, 25450), (39, 25459), (40, 25477), (41, 25480), (44, 25498), (45, 25516), (47, 25534), (49, 25576), (50, 25606), (52, 25627),

Gene: ToneTone\_34 Start: 24815, Stop: 25357, Start Num: 9

Candidate Starts for ToneTone\_34:

(1, 24671), (3, 24734), (Start: 7 @24779 has 8 MA's), (8, 24797), (Start: 9 @24815 has 15 MA's), (10, 24836), (14, 24878), (15, 24881), (18, 24920), (22, 24950), (24, 24986), (26, 25007), (29, 25073), (32, 25115), (35, 25145), (36, 25157), (38, 25163), (39, 25172), (40, 25190), (41, 25193), (44, 25211), (45, 25229), (47, 25247), (49, 25289), (50, 25319), (52, 25340),

Gene: Tucker\_37 Start: 24901, Stop: 25443, Start Num: 9

Candidate Starts for Tucker\_37:

(1, 24757), (3, 24820), (Start: 6 @24856 has 1 MA's), (Start: 7 @24865 has 8 MA's), (8, 24883), (Start: 9 @24901 has 15 MA's), (10, 24922), (14, 24964), (15, 24967), (18, 25006), (22, 25036), (24, 25072), (26, 25093), (29, 25159), (32, 25201), (35, 25231), (36, 25243), (38, 25249), (39, 25258), (40, 25276), (41, 25279), (44, 25297), (45, 25315), (47, 25333), (49, 25375), (50, 25405), (52, 25426),

Gene: Wiks\_36 Start: 24883, Stop: 25425, Start Num: 9

Candidate Starts for Wiks\_36:

(1, 24739), (3, 24802), (Start: 6 @24838 has 1 MA's), (Start: 7 @24847 has 8 MA's), (8, 24865), (Start: 9 @24883 has 15 MA's), (10, 24904), (14, 24946), (15, 24949), (18, 24988), (22, 25018), (24, 25054), (26, 25075), (29, 25141), (32, 25183), (35, 25213), (36, 25225), (38, 25231), (39, 25240), (40, 25258), (41, 25261), (44, 25279), (45, 25297), (47, 25315), (49, 25357), (50, 25387), (52, 25408),

Gene: Wolpertinger\_32 Start: 25770, Stop: 26246, Start Num: 15

Candidate Starts for Wolpertinger\_32:

(Start: 7 @25668 has 8 MA's), (8, 25686), (Start: 9 @25704 has 15 MA's), (10, 25725), (13, 25758), (14, 25767), (15, 25770), (18, 25809), (22, 25839), (24, 25875), (26, 25896), (29, 25962), (35, 26034), (36, 26046), (38, 26052), (40, 26079), (41, 26082), (43, 26097), (44, 26100), (45, 26118), (46, 26124), (47, 26136), (49, 26178), (50, 26208), (52, 26229),

