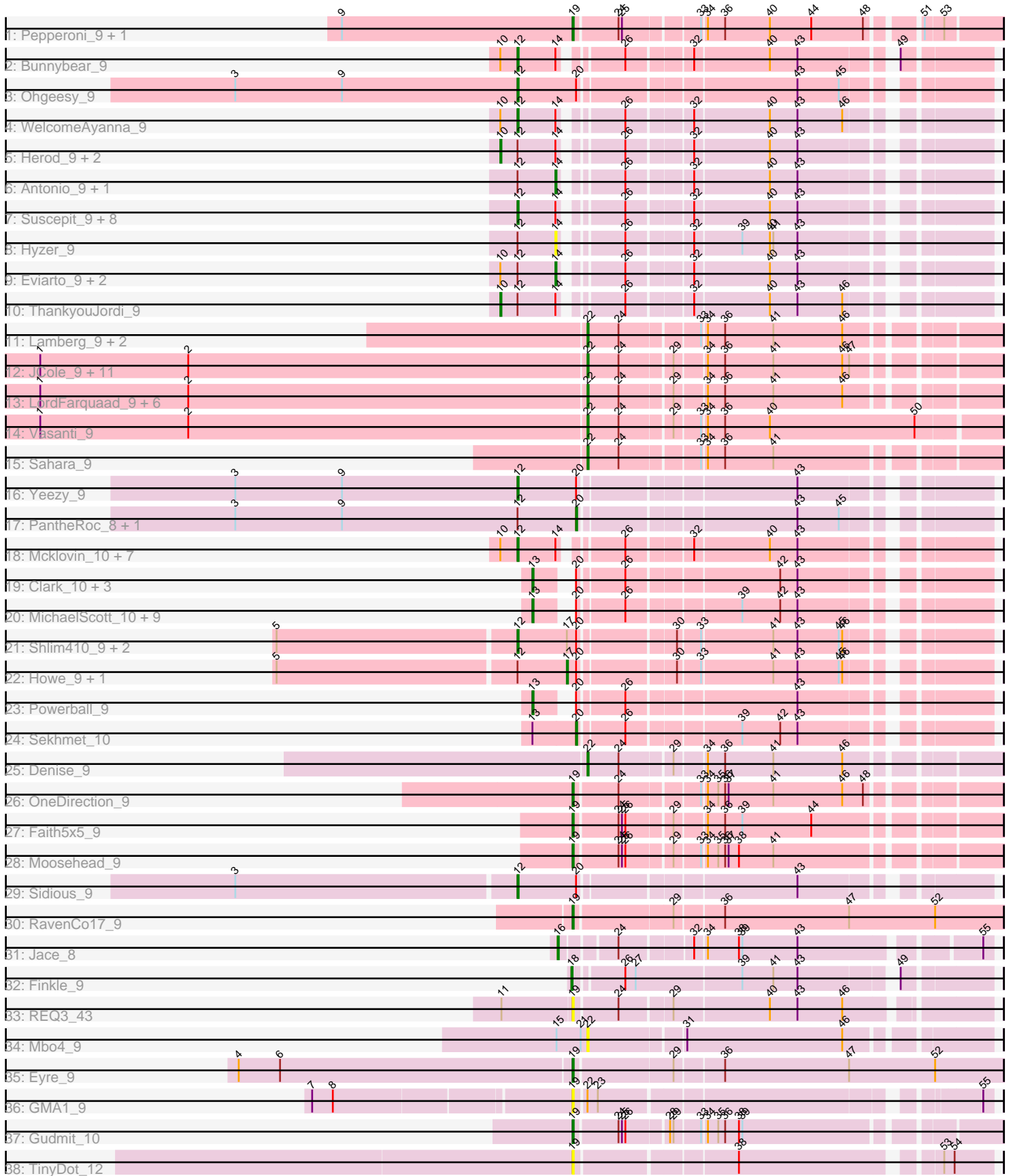


Pham 157771



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 157771 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157771 has 94 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Pepperoni\_9, Lton\_9
- Track 2 : Bunnybear\_9
- Track 3 : Ohgeesy\_9
- Track 4 : WelcomeAyanna\_9
- Track 5 : Herod\_9, BatStarr\_9, Zirinka\_9
- Track 6 : Antonio\_9, Maridalia\_9
- Track 7 : Suscepit\_9, Polly\_9, Manasvini\_9, Trumpet\_9, Tayonia\_9, Kita\_9, Zameen\_9, Eudoria\_9, Neobush\_9
- Track 8 : Hyzer\_9
- Track 9 : Eviarto\_9, Hugley\_9, TimTam\_9
- Track 10 : ThankyouJordi\_9
- Track 11 : Lamberg\_9, EdnaMode\_9, Nettuno\_9
- Track 12 : JCole\_9, Cynthia\_9, Clap\_9, GemG\_9, Whiteclaw\_9, Sproutie\_9, Gizermo\_9, Ebert\_9, Savage\_9, Haley23\_9, TuertoX\_9, Mocha12\_9
- Track 13 : LordFarquaad\_9, Yeet412\_9, Attis\_9, SoilAssassin\_9, Matteo\_9, Bjanes7\_9, Pickett\_9
- Track 14 : Vasanti\_9
- Track 15 : Sahara\_9
- Track 16 : Yeezy\_9
- Track 17 : PantheRoc\_8, BaxterFox\_9
- Track 18 : Mcklovin\_10, Agueybana\_9, Nymphadora\_9, AlumE\_9, Bialota\_9, BoyNamedSue\_9, Madeline\_9, Bosnia\_9
- Track 19 : Clark\_10, Annalisa\_10, Dorito\_9, PhriskyACE\_9
- Track 20 : MichaelScott\_10, DobbysSock\_9, Suerte\_9, WinkNick\_10, Easley\_10, Dolores\_10, Oregano\_10, Samman98\_10, Beenie\_10, Thimann\_10
- Track 21 : Shlim410\_9, Adora\_9, Hortense\_9
- Track 22 : Howe\_9, Twinkle\_9
- Track 23 : Powerball\_9
- Track 24 : Sekhmet\_10
- Track 25 : Denise\_9
- Track 26 : OneDirection\_9
- Track 27 : Faith5x5\_9
- Track 28 : Moosehead\_9
- Track 29 : Sidious\_9
- Track 30 : RavenCo17\_9
- Track 31 : Jace\_8
- Track 32 : Finkle\_9

- Track 33 : REQ3\_43
- Track 34 : Mbo4\_9
- Track 35 : Eyre\_9
- Track 36 : GMA1\_9
- Track 37 : Gudmit\_10
- Track 38 : TinyDot\_12

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

The start number called the most often in the published annotations is 12, it was called in 25 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adora\_9, Agueybana\_9, AlumE\_9, Bialota\_9, Bosnia\_9, BoyNamedSue\_9, Bunnybear\_9, Eudoria\_9, Hortense\_9, Kita\_9, Madeline\_9, Manasvini\_9, Mcklovin\_10, Neobush\_9, Nymphadora\_9, Ohgeesy\_9, Polly\_9, Shlim410\_9, Sidious\_9, Suscepit\_9, Tayonia\_9, Trumpet\_9, WelcomeAyanna\_9, Yeezy\_9, Zameen\_9,

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

- Antonio\_9, BatStarr\_9, BaxterFox\_9, Eviarto\_9, Herod\_9, Howe\_9, Hugley\_9, Hyzer\_9, Maridalia\_9, PantheRoc\_8, ThankyouJordi\_9, TimTam\_9, Twinkle\_9, Zirinka\_9,

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

- Annalisa\_10, Attis\_9, Beenie\_10, Bjanes7\_9, Clap\_9, Clark\_10, Cynthia\_9, Denise\_9, DobbysSock\_9, Dolores\_10, Dorito\_9, Easley\_10, Ebert\_9, EdnaMode\_9, Eyre\_9, Faith5x5\_9, Finkle\_9, GMA1\_9, GemG\_9, Gizermo\_9, Gudmit\_10, Haley23\_9, JCole\_9, Jace\_8, Lamberg\_9, LordFarquaad\_9, Lton\_9, Matteo\_9, Mbo4\_9, MichaelScott\_10, Mocha12\_9, Moosehead\_9, Nettuno\_9, OneDirection\_9, Oregano\_10, Pepperoni\_9, PhriskyACE\_9, Pickett\_9, Powerball\_9, REQ3\_43, RavenCo17\_9, Sahara\_9, Samman98\_10, Savage\_9, Sekhmet\_10, SoilAssassin\_9, Sproutie\_9, Suerte\_9, Thimann\_10, TinyDot\_12, TuertoX\_9, Vasanti\_9, Whiteclaw\_9, WinkNick\_10, Yeet412\_9,

**Summary by start number:**

Start 10:

- Found in 17 of 94 ( 18.1% ) of genes in pham
- Manual Annotations of this start: 4 of 82
- Called 23.5% of time when present
- Phage (with cluster) where this start called: BatStarr\_9 (CZ1), Herod\_9 (CZ1), ThankyouJordi\_9 (CZ1), Zirinka\_9 (CZ1),

Start 12:

- Found in 39 of 94 ( 41.5% ) of genes in pham
- Manual Annotations of this start: 25 of 82
- Called 64.1% of time when present
- Phage (with cluster) where this start called: Adora\_9 (CZ4), Agueybana\_9 (CZ1), AlumE\_9 (CZ1), Bialota\_9 (CZ1), Bosnia\_9 (CZ1), BoyNamedSue\_9 (CZ1),

Bunnybear\_9 (CZ), Eudoria\_9 (CZ1), Hortense\_9 (CZ4), Kita\_9 (CZ1), Madeline\_9 (CZ1), Manasvini\_9 (CZ1), Mcklovin\_10 (CZ4), Neobush\_9 (CZ1), Nymphadora\_9 (CZ1), Ohgeesy\_9 (CZ), Polly\_9 (CZ1), Shlim410\_9 (CZ4), Sidious\_9 (CZ7), Suscepit\_9 (CZ1), Tayonia\_9 (CZ1), Trumpet\_9 (CZ1), WelcomeAyanna\_9 (CZ1), Yeezy\_9 (CZ3), Zameen\_9 (CZ1),

Start 13:

- Found in 16 of 94 ( 17.0% ) of genes in pham
- Manual Annotations of this start: 13 of 82
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Annalisa\_10 (CZ4), Beenie\_10 (CZ4), Clark\_10 (CZ4), DobbysSock\_9 (CZ4), Dolores\_10 (CZ4), Dorito\_9 (CZ4), Easley\_10 (CZ4), MichaelScott\_10 (CZ4), Oregano\_10 (CZ4), PhriskyACE\_9 (CZ4), Powerball\_9 (CZ4), Samman98\_10 (CZ4), Suerte\_9 (CZ4), Thimann\_10 (CZ4), WinkNick\_10 (CZ4),

Start 14:

- Found in 29 of 94 ( 30.9% ) of genes in pham
- Manual Annotations of this start: 4 of 82
- Called 20.7% of time when present
- Phage (with cluster) where this start called: Antonio\_9 (CZ1), Eviarto\_9 (CZ1), Hugley\_9 (CZ1), Hyzer\_9 (CZ1), Maridalia\_9 (CZ1), TimTam\_9 (CZ1),

Start 16:

- Found in 1 of 94 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jace\_8 (singleton),

Start 17:

- Found in 5 of 94 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Howe\_9 (CZ4), Twinkle\_9 (CZ4),

Start 18:

- Found in 1 of 94 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finkle\_9 (singleton),

Start 19:

- Found in 11 of 94 ( 11.7% ) of genes in pham
- Manual Annotations of this start: 7 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Eyre\_9 (singleton), Faith5x5\_9 (CZ6), GMA1\_9 (singleton), Gudmit\_10 (singleton), Lton\_9 (CZ), Moosehead\_9 (CZ6), OneDirection\_9 (CZ6), Pepperoni\_9 (CZ), REQ3\_43 (singleton), RavenCo17\_9 (CZ8), TinyDot\_12 (singleton),

Start 20:

- Found in 26 of 94 ( 27.7% ) of genes in pham
- Manual Annotations of this start: 2 of 82

- Called 11.5% of time when present
- Phage (with cluster) where this start called: BaxterFox\_9 (CZ3), PantheRoc\_8 (CZ3), Sekhmet\_10 (CZ4),

Start 22:

- Found in 27 of 94 ( 28.7% ) of genes in pham
- Manual Annotations of this start: 23 of 82
- Called 96.3% of time when present
- Phage (with cluster) where this start called: Attis\_9 (CZ2), Bjanes7\_9 (CZ2), Clap\_9 (CZ2), Cynthia\_9 (CZ2), Denise\_9 (CZ5), Ebert\_9 (CZ2), EdnaMode\_9 (CZ2), GemG\_9 (CZ2), Gizermo\_9 (CZ2), Haley23\_9 (CZ2), JCole\_9 (CZ2), Lamberg\_9 (CZ2), LordFarquaad\_9 (CZ2), Matteo\_9 (CZ2), Mbo4\_9 (singleton), Mocha12\_9 (CZ2), Nettuno\_9 (CZ2), Pickett\_9 (CZ2), Sahara\_9 (CZ2), Savage\_9 (CZ2), SoilAssassin\_9 (CZ2), Sproutie\_9 (CZ2), TuertoX\_9 (CZ2), Vasanti\_9 (CZ2), Whiteclaw\_9 (CZ2), Yeet412\_9 (CZ2),

### Summary by clusters:

There are 10 clusters represented in this pham: singleton, CZ2, CZ3, CZ1, CZ6, CZ7, CZ4, CZ5, CZ, CZ8,

Info for manual annotations of cluster CZ:

- Start number 12 was manually annotated 2 times for cluster CZ.
- Start number 19 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 10 was manually annotated 4 times for cluster CZ1.
- Start number 12 was manually annotated 17 times for cluster CZ1.
- Start number 14 was manually annotated 4 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 22 was manually annotated 22 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 12 was manually annotated 1 time for cluster CZ3.
- Start number 20 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 12 was manually annotated 4 times for cluster CZ4.
- Start number 13 was manually annotated 13 times for cluster CZ4.
- Start number 17 was manually annotated 2 times for cluster CZ4.
- Start number 20 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 22 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 19 was manually annotated 3 times for cluster CZ6.

Info for manual annotations of cluster CZ7:

- Start number 12 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster CZ8:

- Start number 19 was manually annotated 1 time for cluster CZ8.

**Gene Information:**

Gene: Adora\_9 Start: 6677, Stop: 7039, Start Num: 12

Candidate Starts for Adora\_9:

(5, 6473), (Start: 12 @6677 has 25 MA's), (Start: 17 @6719 has 2 MA's), (Start: 20 @6725 has 2 MA's), (30, 6800), (33, 6818), (41, 6878), (43, 6899), (45, 6935), (46, 6938),

Gene: Agueybana\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Agueybana\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: AlumE\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for AlumE\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Annalisa\_10 Start: 7010, Stop: 7345, Start Num: 13

Candidate Starts for Annalisa\_10:

(Start: 13 @7010 has 13 MA's), (Start: 20 @7031 has 2 MA's), (26, 7067), (42, 7190), (43, 7205),

Gene: Antonio\_9 Start: 7377, Stop: 7697, Start Num: 14

Candidate Starts for Antonio\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Attis\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Attis\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: BatStarr\_9 Start: 7329, Stop: 7697, Start Num: 10

Candidate Starts for BatStarr\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: BaxterFox\_9 Start: 6731, Stop: 7045, Start Num: 20

Candidate Starts for BaxterFox\_9:

(3, 6434), (9, 6527), (Start: 12 @6680 has 25 MA's), (Start: 20 @6731 has 2 MA's), (43, 6905), (45, 6941),

Gene: Beenie\_10 Start: 7004, Stop: 7339, Start Num: 13

Candidate Starts for Beenie\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: Bialota\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Bialota\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Bjaner7\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Bjaner7\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Bosnia\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Bosnia\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: BoyNamedSue\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for BoyNamedSue\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Bunnybear\_9 Start: 7335, Stop: 7688, Start Num: 12

Candidate Starts for Bunnybear\_9:

(Start: 10 @7320 has 4 MA's), (Start: 12 @7335 has 25 MA's), (Start: 14 @7368 has 4 MA's), (26, 7410), (32, 7461), (40, 7524), (43, 7548), (49, 7617),

Gene: Clap\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Clap\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Clark\_10 Start: 7010, Stop: 7345, Start Num: 13

Candidate Starts for Clark\_10:

(Start: 13 @7010 has 13 MA's), (Start: 20 @7031 has 2 MA's), (26, 7067), (42, 7190), (43, 7205),

Gene: Cynthia\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Cynthia\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Denise\_9 Start: 6517, Stop: 6843, Start Num: 22

Candidate Starts for Denise\_9:

(Start: 22 @6517 has 23 MA's), (24, 6544), (29, 6586), (34, 6610), (36, 6625), (41, 6667), (46, 6727),

Gene: DobbysSock\_9 Start: 6502, Stop: 6837, Start Num: 13

Candidate Starts for DobbysSock\_9:

(Start: 13 @6502 has 13 MA's), (Start: 20 @6523 has 2 MA's), (26, 6559), (39, 6649), (42, 6682), (43, 6697),

Gene: Dolores\_10 Start: 7004, Stop: 7339, Start Num: 13

Candidate Starts for Dolores\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: Dorito\_9 Start: 6508, Stop: 6843, Start Num: 13

Candidate Starts for Dorito\_9:

(Start: 13 @6508 has 13 MA's), (Start: 20 @6529 has 2 MA's), (26, 6565), (42, 6688), (43, 6703),

Gene: Easley\_10 Start: 7004, Stop: 7339, Start Num: 13

Candidate Starts for Easley\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: Ebert\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Ebert\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: EdnaMode\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for EdnaMode\_9:

(Start: 22 @6508 has 23 MA's), (24, 6535), (33, 6598), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Eudoria\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Eudoria\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Eviarto\_9 Start: 7377, Stop: 7697, Start Num: 14

Candidate Starts for Eviarto\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Eyre\_9 Start: 7136, Stop: 7498, Start Num: 19

Candidate Starts for Eyre\_9:

(4, 6848), (6, 6884), (Start: 19 @7136 has 7 MA's), (29, 7217), (36, 7256), (47, 7364), (52, 7439),

Gene: Faith5x5\_9 Start: 6467, Stop: 6802, Start Num: 19

Candidate Starts for Faith5x5\_9:

(Start: 19 @6467 has 7 MA's), (24, 6503), (25, 6506), (26, 6509), (29, 6545), (34, 6569), (36, 6584), (39, 6599), (44, 6659),

Gene: Finkle\_9 Start: 6638, Stop: 6967, Start Num: 18

Candidate Starts for Finkle\_9:

(Start: 18 @6638 has 1 MA's), (26, 6677), (27, 6686), (39, 6776), (41, 6803), (43, 6824), (49, 6896),

Gene: GMA1\_9 Start: 6867, Stop: 7187, Start Num: 19

Candidate Starts for GMA1\_9:

(7, 6651), (8, 6669), (Start: 19 @6867 has 7 MA's), (Start: 22 @6876 has 23 MA's), (23, 6885), (55, 7179),

Gene: GemG\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for GemG\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Gizermo\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Gizermo\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),



Gene: Gudmit\_10 Start: 7283, Stop: 7618, Start Num: 19

Candidate Starts for Gudmit\_10:

(Start: 19 @7283 has 7 MA's), (24, 7319), (25, 7322), (26, 7325), (28, 7358), (29, 7361), (33, 7382), (34, 7385), (35, 7394), (36, 7400), (38, 7412), (39, 7415),

Gene: Haley23\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Haley23\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Herod\_9 Start: 7329, Stop: 7697, Start Num: 10

Candidate Starts for Herod\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Hortense\_9 Start: 6677, Stop: 7039, Start Num: 12

Candidate Starts for Hortense\_9:

(5, 6473), (Start: 12 @6677 has 25 MA's), (Start: 17 @6719 has 2 MA's), (Start: 20 @6725 has 2 MA's), (30, 6800), (33, 6818), (41, 6878), (43, 6899), (45, 6935), (46, 6938),

Gene: Howe\_9 Start: 6719, Stop: 7039, Start Num: 17

Candidate Starts for Howe\_9:

(5, 6473), (Start: 12 @6677 has 25 MA's), (Start: 17 @6719 has 2 MA's), (Start: 20 @6725 has 2 MA's), (30, 6800), (33, 6818), (41, 6878), (43, 6899), (45, 6935), (46, 6938),

Gene: Hugley\_9 Start: 7377, Stop: 7697, Start Num: 14

Candidate Starts for Hugley\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Hyzer\_9 Start: 7378, Stop: 7698, Start Num: 14

Candidate Starts for Hyzer\_9:

(Start: 12 @7345 has 25 MA's), (Start: 14 @7378 has 4 MA's), (26, 7420), (32, 7471), (39, 7510), (40, 7534), (41, 7537), (43, 7558),

Gene: JCole\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for JCole\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Jace\_8 Start: 7053, Stop: 7382, Start Num: 16

Candidate Starts for Jace\_8:

(Start: 16 @7053 has 1 MA's), (24, 7095), (32, 7152), (34, 7161), (38, 7188), (39, 7191), (43, 7239), (55, 7374),

Gene: Kita\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Kita\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Lamberg\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Lamberg\_9:

(Start: 22 @6508 has 23 MA's), (24, 6535), (33, 6598), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: LordFarquaad\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for LordFarquaad\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Lton\_9 Start: 6521, Stop: 6856, Start Num: 19

Candidate Starts for Lton\_9:

(9, 6320), (Start: 19 @6521 has 7 MA's), (24, 6557), (25, 6560), (33, 6620), (34, 6623), (36, 6638), (40, 6677), (44, 6713), (48, 6758), (51, 6794), (53, 6809),

Gene: Madeline\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Madeline\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Manasvini\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Manasvini\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Maridalia\_9 Start: 7377, Stop: 7697, Start Num: 14

Candidate Starts for Maridalia\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Matteo\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Matteo\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Mbo4\_9 Start: 7186, Stop: 7509, Start Num: 22

Candidate Starts for Mbo4\_9:

(15, 7159), (21, 7180), (Start: 22 @7186 has 23 MA's), (31, 7264), (46, 7399),

Gene: Mcklovin\_10 Start: 7803, Stop: 8156, Start Num: 12

Candidate Starts for Mcklovin\_10:

(Start: 10 @7788 has 4 MA's), (Start: 12 @7803 has 25 MA's), (Start: 14 @7836 has 4 MA's), (26, 7878), (32, 7929), (40, 7992), (43, 8016),

Gene: MichaelScott\_10 Start: 7004, Stop: 7339, Start Num: 13

Candidate Starts for MichaelScott\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: Mocha12\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Mocha12\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Moosehead\_9 Start: 6464, Stop: 6799, Start Num: 19

Candidate Starts for Moosehead\_9:

(Start: 19 @6464 has 7 MA's), (24, 6500), (25, 6503), (26, 6506), (29, 6542), (33, 6563), (34, 6566), (35, 6575), (36, 6581), (37, 6584), (38, 6593), (41, 6623),

Gene: Neobush\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Neobush\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Nettuno\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Nettuno\_9:

(Start: 22 @6508 has 23 MA's), (24, 6535), (33, 6598), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Nymphadora\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Nymphadora\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Ohgeesy\_9 Start: 6680, Stop: 7045, Start Num: 12

Candidate Starts for Ohgeesy\_9:

(3, 6434), (9, 6527), (Start: 12 @6680 has 25 MA's), (Start: 20 @6731 has 2 MA's), (43, 6905), (45, 6941),

Gene: OneDirection\_9 Start: 6465, Stop: 6800, Start Num: 19

Candidate Starts for OneDirection\_9:

(Start: 19 @6465 has 7 MA's), (24, 6501), (33, 6564), (34, 6567), (35, 6576), (36, 6582), (37, 6585), (41, 6624), (46, 6684), (48, 6702),

Gene: Oregano\_10 Start: 6675, Stop: 7010, Start Num: 13

Candidate Starts for Oregano\_10:

(Start: 13 @6675 has 13 MA's), (Start: 20 @6696 has 2 MA's), (26, 6732), (39, 6822), (42, 6855), (43, 6870),

Gene: PantheRoc\_8 Start: 6731, Stop: 7045, Start Num: 20

Candidate Starts for PantheRoc\_8:

(3, 6434), (9, 6527), (Start: 12 @6680 has 25 MA's), (Start: 20 @6731 has 2 MA's), (43, 6905), (45, 6941),

Gene: Pepperoni\_9 Start: 6815, Stop: 7150, Start Num: 19

Candidate Starts for Pepperoni\_9:

(9, 6614), (Start: 19 @6815 has 7 MA's), (24, 6851), (25, 6854), (33, 6914), (34, 6917), (36, 6932), (40, 6971), (44, 7007), (48, 7052), (51, 7088), (53, 7103),

Gene: PhriskyACE\_9 Start: 6508, Stop: 6843, Start Num: 13

Candidate Starts for PhriskyACE\_9:

(Start: 13 @6508 has 13 MA's), (Start: 20 @6529 has 2 MA's), (26, 6565), (42, 6688), (43, 6703),

Gene: Pickett\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Pickett\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Polly\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Polly\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Powerball\_9 Start: 6508, Stop: 6843, Start Num: 13

Candidate Starts for Powerball\_9:

(Start: 13 @6508 has 13 MA's), (Start: 20 @6529 has 2 MA's), (26, 6565), (43, 6703),

Gene: REQ3\_43 Start: 23906, Stop: 24238, Start Num: 19

Candidate Starts for REQ3\_43:

(11, 23846), (Start: 19 @23906 has 7 MA's), (24, 23942), (29, 23984), (40, 24065), (43, 24089), (46, 24128),

Gene: RavenCo17\_9 Start: 7317, Stop: 7679, Start Num: 19

Candidate Starts for RavenCo17\_9:

(Start: 19 @7317 has 7 MA's), (29, 7398), (36, 7437), (47, 7545), (52, 7620),

Gene: Sahara\_9 Start: 6524, Stop: 6850, Start Num: 22

Candidate Starts for Sahara\_9:

(Start: 22 @6524 has 23 MA's), (24, 6551), (33, 6614), (34, 6617), (36, 6632), (41, 6674),

Gene: Samman98\_10 Start: 7004, Stop: 7339, Start Num: 13

Candidate Starts for Samman98\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: Savage\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Savage\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Sekhmet\_10 Start: 7025, Stop: 7339, Start Num: 20

Candidate Starts for Sekhmet\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: Shlim410\_9 Start: 6677, Stop: 7039, Start Num: 12

Candidate Starts for Shlim410\_9:

(5, 6473), (Start: 12 @6677 has 25 MA's), (Start: 17 @6719 has 2 MA's), (Start: 20 @6725 has 2 MA's), (30, 6800), (33, 6818), (41, 6878), (43, 6899), (45, 6935), (46, 6938),

Gene: Sidious\_9 Start: 6674, Stop: 7039, Start Num: 12

Candidate Starts for Sidious\_9:

(3, 6434), (Start: 12 @6674 has 25 MA's), (Start: 20 @6725 has 2 MA's), (43, 6899),

Gene: SoilAssassin\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for SoilAssassin\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Sproutie\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Sproutie\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Suerte\_9 Start: 6502, Stop: 6837, Start Num: 13

Candidate Starts for Suerte\_9:

(Start: 13 @6502 has 13 MA's), (Start: 20 @6523 has 2 MA's), (26, 6559), (39, 6649), (42, 6682), (43, 6697),

Gene: Suscepit\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Suscepit\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Tayonia\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Tayonia\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: ThankyouJordi\_9 Start: 7327, Stop: 7695, Start Num: 10

Candidate Starts for ThankyouJordi\_9:

(Start: 10 @7327 has 4 MA's), (Start: 12 @7342 has 25 MA's), (Start: 14 @7375 has 4 MA's), (26, 7417), (32, 7468), (40, 7531), (43, 7555), (46, 7594),

Gene: Thimann\_10 Start: 7004, Stop: 7339, Start Num: 13

Candidate Starts for Thimann\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: TimTam\_9 Start: 7377, Stop: 7697, Start Num: 14

Candidate Starts for TimTam\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: TinyDot\_12 Start: 7635, Stop: 7961, Start Num: 19

Candidate Starts for TinyDot\_12:

(Start: 19 @7635 has 7 MA's), (38, 7764), (53, 7920), (54, 7929),

Gene: Trumpet\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Trumpet\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: TuertoX\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for TuertoX\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: Twinkle\_9 Start: 6719, Stop: 7039, Start Num: 17

Candidate Starts for Twinkle\_9:

(5, 6473), (Start: 12 @6677 has 25 MA's), (Start: 17 @6719 has 2 MA's), (Start: 20 @6725 has 2 MA's), (30, 6800), (33, 6818), (41, 6878), (43, 6899), (45, 6935), (46, 6938),

Gene: Vasanti\_9 Start: 6512, Stop: 6853, Start Num: 22

Candidate Starts for Vasanti\_9:

(1, 6038), (2, 6167), (Start: 22 @6512 has 23 MA's), (24, 6539), (29, 6581), (33, 6602), (34, 6605), (36, 6620), (40, 6659), (50, 6785),

Gene: WelcomeAyanna\_9 Start: 7342, Stop: 7695, Start Num: 12

Candidate Starts for WelcomeAyanna\_9:

(Start: 10 @7327 has 4 MA's), (Start: 12 @7342 has 25 MA's), (Start: 14 @7375 has 4 MA's), (26, 7417), (32, 7468), (40, 7531), (43, 7555), (46, 7594),

Gene: Whiteclaw\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Whiteclaw\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718), (47, 6724),

Gene: WinkNick\_10 Start: 7004, Stop: 7339, Start Num: 13

Candidate Starts for WinkNick\_10:

(Start: 13 @7004 has 13 MA's), (Start: 20 @7025 has 2 MA's), (26, 7061), (39, 7151), (42, 7184), (43, 7199),

Gene: Yeet412\_9 Start: 6508, Stop: 6834, Start Num: 22

Candidate Starts for Yeet412\_9:

(1, 6034), (2, 6163), (Start: 22 @6508 has 23 MA's), (24, 6535), (29, 6577), (34, 6601), (36, 6616), (41, 6658), (46, 6718),

Gene: Yeezy\_9 Start: 6677, Stop: 7042, Start Num: 12

Candidate Starts for Yeezy\_9:

(3, 6431), (9, 6524), (Start: 12 @6677 has 25 MA's), (Start: 20 @6728 has 2 MA's), (43, 6902),

Gene: Zameen\_9 Start: 7344, Stop: 7697, Start Num: 12

Candidate Starts for Zameen\_9:

(Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),

Gene: Zirinka\_9 Start: 7329, Stop: 7697, Start Num: 10

Candidate Starts for Zirinka\_9:

(Start: 10 @7329 has 4 MA's), (Start: 12 @7344 has 25 MA's), (Start: 14 @7377 has 4 MA's), (26, 7419), (32, 7470), (40, 7533), (43, 7557),