

Pham 285518



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 285518 Report

This analysis was run 03/28/26 on database version 641.

Pham number 285518 has 76 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Mildred21\_34
- Track 2 : LilSaint\_35
- Track 3 : Navo\_32, Liandry\_33, Eliot67\_33, FreddyDRoo\_33, Squillum\_33, PinkiePie\_33
- Track 4 : Paradiddles\_30, Braelyn\_33, WhereRU\_30, Persimmon\_30, Davielle\_30, Bartholomune\_33
- Track 5 : Anedea\_32, Riptide\_32
- Track 6 : Larnav\_33
- Track 7 : Shuckle\_31, Peebs\_32
- Track 8 : Sushi23\_33, Teutsch\_32, Scheme\_33, Samisti12\_32
- Track 9 : Cursive\_31, Watermoore\_33, Leo04\_33, Lululemon\_32, Coogler\_33, Cross\_33, BlueOtter\_33, PacManQ\_32, HangryHippo\_33
- Track 10 : MulchMansion\_33, LilMartin\_33, Angela\_33
- Track 11 : Marsus\_33
- Track 12 : Daubenski\_35, Cadmus\_32
- Track 13 : EGole\_33
- Track 14 : Bmoc\_32
- Track 15 : Pepperwood\_33
- Track 16 : NootNoot\_30
- Track 17 : Brizzy\_36, Wipeout\_34, Bordeaux\_34, PumpkinSpice\_35, MindFlayer\_34, IchabodCrane\_34, Enygma\_33, Gibbi\_38, Birchlyn\_33, Battuta\_34, Rikishi\_36, Quaran19\_36, CeilingFan\_35, KentuckyRacer\_36, Spelly\_36, Spilled\_36, Karimac\_35, TomSawyer\_34, Jollison\_35, Amabiko\_36, AcciDwight\_38, JimJam\_36, Starbow\_34, SaltySpittoon\_36
- Track 18 : Stanimal\_36, Sollertia\_36, BoomerJR\_36, AngryGiraffe\_36, Yaboi\_37, Genie2\_36
- Track 19 : Mugiwara\_36
- Track 20 : Elmer\_35, Wofford\_33
- Track 21 : LukeCage\_35

### ***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 32 of the 72 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AcciDwight\_38, Amabiko\_36, AngryGiraffe\_36, Battuta\_34, Birchlyn\_33, BoomerJR\_36, Bordeaux\_34, Brizzy\_36, CeilingFan\_35, Elmer\_35, Enygma\_33, Genie2\_36, Gibbi\_38, IchabodCrane\_34, JimJam\_36, Jollison\_35, Karimac\_35, KentuckyRacer\_36, LukeCage\_35, MindFlayer\_34, Mugiwara\_36, PumpkinSpice\_35, Quaran19\_36, Rikishi\_36, SaltySpittoon\_36, Sollertia\_36, Spelly\_36, Spilled\_36, Stanimal\_36, Starbow\_34, TomSawyer\_34, Wipeout\_34, Wofford\_33, Yaboi\_37,

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

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

- Anedea\_32, Angela\_33, Bartholomune\_33, BlueOtter\_33, Bmoc\_32, Braelyn\_33, Cadmus\_32, Coogler\_33, Cross\_33, Cursive\_31, Daubenski\_35, Davielle\_30, EGole\_33, Eliot67\_33, FreddyDRoo\_33, HangryHippo\_33, Larnav\_33, Leo04\_33, Liandry\_33, LilMartin\_33, LilSaint\_35, Lululemon\_32, Marsus\_33, Mildred21\_34, MulchMansion\_33, Navo\_32, NootNoot\_30, PacManQ\_32, Paradiddles\_30, Peebs\_32, Pepperwood\_33, Persimmon\_30, PinkiePie\_33, Riptide\_32, Samisti12\_32, Scheme\_33, Shuckle\_31, Squillum\_33, Sushi23\_33, Teutsch\_32, Watermoore\_33, WhereRU\_30,

### Summary by start number:

Start 8:

- Found in 9 of 76 ( 11.8% ) of genes in pham
- Manual Annotations of this start: 9 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anedea\_32 (BE1), Angela\_33 (BE1), Cadmus\_32 (BE1), Daubenski\_35 (BE1), LilMartin\_33 (BE1), LilSaint\_35 (BE1), Marsus\_33 (BE1), MulchMansion\_33 (BE1), Riptide\_32 (BE1),

Start 9:

- Found in 34 of 76 ( 44.7% ) of genes in pham
- Manual Annotations of this start: 32 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AcciDwight\_38 (BE2), Amabiko\_36 (BE2), AngryGiraffe\_36 (BE2), Battuta\_34 (BE2), Birchlyn\_33 (BE2), BoomerJR\_36 (BE2), Bordeaux\_34 (BE2), Brizzy\_36 (BE2), CeilingFan\_35 (BE2), Elmer\_35 (BE2), Enygma\_33 (BE2), Genie2\_36 (BE2), Gibbi\_38 (BE2), IchabodCrane\_34 (BE2), JimJam\_36 (BE2), Jollison\_35 (BE2), Karimac\_35 (BE2), KentuckyRacer\_36 (BE2), LukeCage\_35 (BE2), MindFlayer\_34 (BE2), Mugiwara\_36 (BE2), PumpkinSpice\_35 (BE2), Quaran19\_36 (BE2), Rikishi\_36 (BE2), SaltySpittoon\_36 (BE2), Sollertia\_36 (BE2), Spelly\_36 (BE2), Spilled\_36 (BE2), Stanimal\_36 (BE2), Starbow\_34 (BE2), TomSawyer\_34 (BE2), Wipeout\_34 (BE2), Wofford\_33 (BE2), Yaboi\_37 (BE2),

Start 10:

- Found in 33 of 76 ( 43.4% ) of genes in pham
- Manual Annotations of this start: 31 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bartholomune\_33 (BE1), BlueOtter\_33 (BE1), Bmoc\_32 (BE1), Braelyn\_33 (BE1), Coogler\_33 (BE1), Cross\_33 (BE1), Cursive\_31 (BE1), Davielle\_30 (BE1), EGole\_33 (BE1), Eliot67\_33 (BE1),

FreddyDRoo\_33 (BE1), HangryHippo\_33 (BE1), Larnav\_33 (BE1), Leo04\_33 (BE1), Liandry\_33 (BE1), Lululemon\_32 (BE1), Mildred21\_34 (BE1), Navo\_32 (BE1), NootNoot\_30 (BE1), PacManQ\_32 (BE1), Paradiddles\_30 (BE1), Peebs\_32 (BE1), Pepperwood\_33 (BE1), Persimmon\_30 (BE1), PinkiePie\_33 (BE1), Samisti12\_32 (BE1), Scheme\_33 (BE1), Shuckle\_31 (BE1), Squillium\_33 (BE1), Sushi23\_33 (BE1), Teutsch\_32 (BE1), Watermoore\_33 (BE1), WhereRU\_30 (BE1),

### **Summary by clusters:**

There are 2 clusters represented in this pham: BE2, BE1,

Info for manual annotations of cluster BE1:

- Start number 8 was manually annotated 9 times for cluster BE1.
- Start number 10 was manually annotated 31 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 9 was manually annotated 32 times for cluster BE2.

### **Gene Information:**

Gene: AcciDwight\_38 Start: 16181, Stop: 15975, Start Num: 9

Candidate Starts for AcciDwight\_38:

(1, 16265), (Start: 9 @16181 has 32 MA's), (14, 16148), (23, 15989),

Gene: Amabiko\_36 Start: 16226, Stop: 16020, Start Num: 9

Candidate Starts for Amabiko\_36:

(1, 16310), (Start: 9 @16226 has 32 MA's), (14, 16193), (23, 16034),

Gene: Anedea\_32 Start: 15212, Stop: 15003, Start Num: 8

Candidate Starts for Anedea\_32:

(Start: 8 @15212 has 9 MA's), (15, 15173), (16, 15161), (17, 15149),

Gene: Angela\_33 Start: 15247, Stop: 15038, Start Num: 8

Candidate Starts for Angela\_33:

(Start: 8 @15247 has 9 MA's), (16, 15196), (17, 15184), (18, 15172), (22, 15064),

Gene: AngryGiraffe\_36 Start: 16035, Stop: 15829, Start Num: 9

Candidate Starts for AngryGiraffe\_36:

(Start: 9 @16035 has 32 MA's), (14, 16002), (20, 15906), (23, 15843),

Gene: Bartholomune\_33 Start: 14992, Stop: 14789, Start Num: 10

Candidate Starts for Bartholomune\_33:

(Start: 10 @14992 has 31 MA's), (11, 14974), (12, 14968), (16, 14947),

Gene: Battuta\_34 Start: 16202, Stop: 15996, Start Num: 9

Candidate Starts for Battuta\_34:

(1, 16286), (Start: 9 @16202 has 32 MA's), (14, 16169), (23, 16010),

Gene: Birchlyn\_33 Start: 14083, Stop: 13877, Start Num: 9

Candidate Starts for Birchlyn\_33:

(1, 14167), (Start: 9 @14083 has 32 MA's), (14, 14050), (23, 13891),

Gene: BlueOtter\_33 Start: 14943, Stop: 14740, Start Num: 10

Candidate Starts for BlueOtter\_33:

(Start: 10 @14943 has 31 MA's), (12, 14919), (19, 14847),

Gene: Bmoc\_32 Start: 15380, Stop: 15177, Start Num: 10

Candidate Starts for Bmoc\_32:

(Start: 10 @15380 has 31 MA's), (20, 15254),

Gene: BoomerJR\_36 Start: 16035, Stop: 15829, Start Num: 9

Candidate Starts for BoomerJR\_36:

(Start: 9 @16035 has 32 MA's), (14, 16002), (20, 15906), (23, 15843),

Gene: Bordeaux\_34 Start: 16217, Stop: 16011, Start Num: 9

Candidate Starts for Bordeaux\_34:

(1, 16301), (Start: 9 @16217 has 32 MA's), (14, 16184), (23, 16025),

Gene: Braelyn\_33 Start: 15387, Stop: 15184, Start Num: 10

Candidate Starts for Braelyn\_33:

(Start: 10 @15387 has 31 MA's), (11, 15369), (12, 15363), (16, 15342),

Gene: Brizzy\_36 Start: 15876, Stop: 15670, Start Num: 9

Candidate Starts for Brizzy\_36:

(1, 15960), (Start: 9 @15876 has 32 MA's), (14, 15843), (23, 15684),

Gene: Cadmus\_32 Start: 14591, Stop: 14382, Start Num: 8

Candidate Starts for Cadmus\_32:

(4, 14639), (Start: 8 @14591 has 9 MA's), (16, 14540), (19, 14489), (21, 14426),

Gene: CeilingFan\_35 Start: 15977, Stop: 15771, Start Num: 9

Candidate Starts for CeilingFan\_35:

(1, 16061), (Start: 9 @15977 has 32 MA's), (14, 15944), (23, 15785),

Gene: Coogler\_33 Start: 14932, Stop: 14729, Start Num: 10

Candidate Starts for Coogler\_33:

(Start: 10 @14932 has 31 MA's), (12, 14908), (19, 14836),

Gene: Cross\_33 Start: 14944, Stop: 14741, Start Num: 10

Candidate Starts for Cross\_33:

(Start: 10 @14944 has 31 MA's), (12, 14920), (19, 14848),

Gene: Cursive\_31 Start: 13761, Stop: 13558, Start Num: 10

Candidate Starts for Cursive\_31:

(Start: 10 @13761 has 31 MA's), (12, 13737), (19, 13665),

Gene: Daubenski\_35 Start: 15355, Stop: 15146, Start Num: 8

Candidate Starts for Daubenski\_35:

(4, 15403), (Start: 8 @15355 has 9 MA's), (16, 15304), (19, 15253), (21, 15190),

Gene: Davielle\_30 Start: 14221, Stop: 14018, Start Num: 10

Candidate Starts for Davielle\_30:

(Start: 10 @14221 has 31 MA's), (11, 14203), (12, 14197), (16, 14176),

Gene: EGole\_33 Start: 15805, Stop: 15602, Start Num: 10  
Candidate Starts for EGole\_33:  
(Start: 10 @15805 has 31 MA's), (13, 15778), (16, 15760), (20, 15679), (23, 15616),

Gene: Eliot67\_33 Start: 14992, Stop: 14789, Start Num: 10  
Candidate Starts for Eliot67\_33:  
(Start: 10 @14992 has 31 MA's), (11, 14974), (12, 14968), (16, 14947), (22, 14815),

Gene: Elmer\_35 Start: 15504, Stop: 15298, Start Num: 9  
Candidate Starts for Elmer\_35:  
(5, 15549), (6, 15540), (Start: 9 @15504 has 32 MA's), (14, 15471), (23, 15312),

Gene: Enygma\_33 Start: 15348, Stop: 15142, Start Num: 9  
Candidate Starts for Enygma\_33:  
(1, 15432), (Start: 9 @15348 has 32 MA's), (14, 15315), (23, 15156),

Gene: FreddyDRoo\_33 Start: 14992, Stop: 14789, Start Num: 10  
Candidate Starts for FreddyDRoo\_33:  
(Start: 10 @14992 has 31 MA's), (11, 14974), (12, 14968), (16, 14947), (22, 14815),

Gene: Genie2\_36 Start: 16038, Stop: 15832, Start Num: 9  
Candidate Starts for Genie2\_36:  
(Start: 9 @16038 has 32 MA's), (14, 16005), (20, 15909), (23, 15846),

Gene: Gibbi\_38 Start: 15837, Stop: 15631, Start Num: 9  
Candidate Starts for Gibbi\_38:  
(1, 15921), (Start: 9 @15837 has 32 MA's), (14, 15804), (23, 15645),

Gene: HangryHippo\_33 Start: 14943, Stop: 14740, Start Num: 10  
Candidate Starts for HangryHippo\_33:  
(Start: 10 @14943 has 31 MA's), (12, 14919), (19, 14847),

Gene: IchabodCrane\_34 Start: 15929, Stop: 15723, Start Num: 9  
Candidate Starts for IchabodCrane\_34:  
(1, 16013), (Start: 9 @15929 has 32 MA's), (14, 15896), (23, 15737),

Gene: JimJam\_36 Start: 16165, Stop: 15959, Start Num: 9  
Candidate Starts for JimJam\_36:  
(1, 16249), (Start: 9 @16165 has 32 MA's), (14, 16132), (23, 15973),

Gene: Jollison\_35 Start: 16183, Stop: 15977, Start Num: 9  
Candidate Starts for Jollison\_35:  
(1, 16267), (Start: 9 @16183 has 32 MA's), (14, 16150), (23, 15991),

Gene: Karimac\_35 Start: 16332, Stop: 16126, Start Num: 9  
Candidate Starts for Karimac\_35:  
(1, 16416), (Start: 9 @16332 has 32 MA's), (14, 16299), (23, 16140),

Gene: KentuckyRacer\_36 Start: 15978, Stop: 15772, Start Num: 9  
Candidate Starts for KentuckyRacer\_36:  
(1, 16062), (Start: 9 @15978 has 32 MA's), (14, 15945), (23, 15786),

Gene: Larnav\_33 Start: 14891, Stop: 14688, Start Num: 10

Candidate Starts for Larnav\_33:  
(Start: 10 @14891 has 31 MA's), (12, 14867), (19, 14795),

Gene: Leo04\_33 Start: 14942, Stop: 14739, Start Num: 10  
Candidate Starts for Leo04\_33:  
(Start: 10 @14942 has 31 MA's), (12, 14918), (19, 14846),

Gene: Liandry\_33 Start: 14991, Stop: 14788, Start Num: 10  
Candidate Starts for Liandry\_33:  
(Start: 10 @14991 has 31 MA's), (11, 14973), (12, 14967), (16, 14946), (22, 14814),

Gene: LilMartin\_33 Start: 15194, Stop: 14985, Start Num: 8  
Candidate Starts for LilMartin\_33:  
(Start: 8 @15194 has 9 MA's), (16, 15143), (17, 15131), (18, 15119), (22, 15011),

Gene: LilSaint\_35 Start: 15430, Stop: 15221, Start Num: 8  
Candidate Starts for LilSaint\_35:  
(2, 15496), (7, 15448), (Start: 8 @15430 has 9 MA's), (16, 15379), (17, 15367),

Gene: LukeCage\_35 Start: 15915, Stop: 15709, Start Num: 9  
Candidate Starts for LukeCage\_35:  
(1, 15999), (Start: 9 @15915 has 32 MA's), (14, 15882), (23, 15723),

Gene: Lululemon\_32 Start: 14323, Stop: 14120, Start Num: 10  
Candidate Starts for Lululemon\_32:  
(Start: 10 @14323 has 31 MA's), (12, 14299), (19, 14227),

Gene: Marsus\_33 Start: 15071, Stop: 14862, Start Num: 8  
Candidate Starts for Marsus\_33:  
(Start: 8 @15071 has 9 MA's), (16, 15020), (18, 14996),

Gene: Mildred21\_34 Start: 15301, Stop: 15098, Start Num: 10  
Candidate Starts for Mildred21\_34:  
(Start: 10 @15301 has 31 MA's), (14, 15271),

Gene: MindFlayer\_34 Start: 15836, Stop: 15630, Start Num: 9  
Candidate Starts for MindFlayer\_34:  
(1, 15920), (Start: 9 @15836 has 32 MA's), (14, 15803), (23, 15644),

Gene: Mugiwara\_36 Start: 15831, Stop: 15625, Start Num: 9  
Candidate Starts for Mugiwara\_36:  
(1, 15915), (3, 15888), (Start: 9 @15831 has 32 MA's), (14, 15798), (23, 15639),

Gene: MulchMansion\_33 Start: 15195, Stop: 14986, Start Num: 8  
Candidate Starts for MulchMansion\_33:  
(Start: 8 @15195 has 9 MA's), (16, 15144), (17, 15132), (18, 15120), (22, 15012),

Gene: Navo\_32 Start: 15150, Stop: 14947, Start Num: 10  
Candidate Starts for Navo\_32:  
(Start: 10 @15150 has 31 MA's), (11, 15132), (12, 15126), (16, 15105), (22, 14973),

Gene: NootNoot\_30 Start: 14173, Stop: 13970, Start Num: 10  
Candidate Starts for NootNoot\_30:

(Start: 10 @14173 has 31 MA's), (11, 14155), (12, 14149), (16, 14128), (22, 13996),

Gene: PacManQ\_32 Start: 14323, Stop: 14120, Start Num: 10

Candidate Starts for PacManQ\_32:

(Start: 10 @14323 has 31 MA's), (12, 14299), (19, 14227),

Gene: Paradiddles\_30 Start: 14164, Stop: 13961, Start Num: 10

Candidate Starts for Paradiddles\_30:

(Start: 10 @14164 has 31 MA's), (11, 14146), (12, 14140), (16, 14119),

Gene: Peebs\_32 Start: 14642, Stop: 14439, Start Num: 10

Candidate Starts for Peebs\_32:

(Start: 10 @14642 has 31 MA's), (12, 14618), (19, 14546),

Gene: Pepperwood\_33 Start: 14815, Stop: 14612, Start Num: 10

Candidate Starts for Pepperwood\_33:

(Start: 10 @14815 has 31 MA's), (12, 14791),

Gene: Persimmon\_30 Start: 14221, Stop: 14018, Start Num: 10

Candidate Starts for Persimmon\_30:

(Start: 10 @14221 has 31 MA's), (11, 14203), (12, 14197), (16, 14176),

Gene: PinkiePie\_33 Start: 14992, Stop: 14789, Start Num: 10

Candidate Starts for PinkiePie\_33:

(Start: 10 @14992 has 31 MA's), (11, 14974), (12, 14968), (16, 14947), (22, 14815),

Gene: PumpkinSpice\_35 Start: 16226, Stop: 16020, Start Num: 9

Candidate Starts for PumpkinSpice\_35:

(1, 16310), (Start: 9 @16226 has 32 MA's), (14, 16193), (23, 16034),

Gene: Quaran19\_36 Start: 16217, Stop: 16011, Start Num: 9

Candidate Starts for Quaran19\_36:

(1, 16301), (Start: 9 @16217 has 32 MA's), (14, 16184), (23, 16025),

Gene: Rikishi\_36 Start: 16132, Stop: 15926, Start Num: 9

Candidate Starts for Rikishi\_36:

(1, 16216), (Start: 9 @16132 has 32 MA's), (14, 16099), (23, 15940),

Gene: Riptide\_32 Start: 14938, Stop: 14729, Start Num: 8

Candidate Starts for Riptide\_32:

(Start: 8 @14938 has 9 MA's), (15, 14899), (16, 14887), (17, 14875),

Gene: SaltySpittoon\_36 Start: 16226, Stop: 16020, Start Num: 9

Candidate Starts for SaltySpittoon\_36:

(1, 16310), (Start: 9 @16226 has 32 MA's), (14, 16193), (23, 16034),

Gene: Samisti12\_32 Start: 15412, Stop: 15209, Start Num: 10

Candidate Starts for Samisti12\_32:

(Start: 10 @15412 has 31 MA's), (12, 15388),

Gene: Scheme\_33 Start: 14826, Stop: 14623, Start Num: 10

Candidate Starts for Scheme\_33:

(Start: 10 @14826 has 31 MA's), (12, 14802),

Gene: Shuckle\_31 Start: 15095, Stop: 14892, Start Num: 10

Candidate Starts for Shuckle\_31:

(Start: 10 @15095 has 31 MA's), (12, 15071), (19, 14999),

Gene: Sollertia\_36 Start: 16038, Stop: 15832, Start Num: 9

Candidate Starts for Sollertia\_36:

(Start: 9 @16038 has 32 MA's), (14, 16005), (20, 15909), (23, 15846),

Gene: Spelly\_36 Start: 16181, Stop: 15975, Start Num: 9

Candidate Starts for Spelly\_36:

(1, 16265), (Start: 9 @16181 has 32 MA's), (14, 16148), (23, 15989),

Gene: Spilled\_36 Start: 15935, Stop: 15729, Start Num: 9

Candidate Starts for Spilled\_36:

(1, 16019), (Start: 9 @15935 has 32 MA's), (14, 15902), (23, 15743),

Gene: Squillum\_33 Start: 14991, Stop: 14788, Start Num: 10

Candidate Starts for Squillum\_33:

(Start: 10 @14991 has 31 MA's), (11, 14973), (12, 14967), (16, 14946), (22, 14814),

Gene: Stanimal\_36 Start: 16038, Stop: 15832, Start Num: 9

Candidate Starts for Stanimal\_36:

(Start: 9 @16038 has 32 MA's), (14, 16005), (20, 15909), (23, 15846),

Gene: Starbow\_34 Start: 16202, Stop: 15996, Start Num: 9

Candidate Starts for Starbow\_34:

(1, 16286), (Start: 9 @16202 has 32 MA's), (14, 16169), (23, 16010),

Gene: Sushi23\_33 Start: 15038, Stop: 14835, Start Num: 10

Candidate Starts for Sushi23\_33:

(Start: 10 @15038 has 31 MA's), (12, 15014),

Gene: Teutsch\_32 Start: 14731, Stop: 14528, Start Num: 10

Candidate Starts for Teutsch\_32:

(Start: 10 @14731 has 31 MA's), (12, 14707),

Gene: TomSawyer\_34 Start: 15820, Stop: 15614, Start Num: 9

Candidate Starts for TomSawyer\_34:

(1, 15904), (Start: 9 @15820 has 32 MA's), (14, 15787), (23, 15628),

Gene: Watermoore\_33 Start: 14944, Stop: 14741, Start Num: 10

Candidate Starts for Watermoore\_33:

(Start: 10 @14944 has 31 MA's), (12, 14920), (19, 14848),

Gene: WhereRU\_30 Start: 14221, Stop: 14018, Start Num: 10

Candidate Starts for WhereRU\_30:

(Start: 10 @14221 has 31 MA's), (11, 14203), (12, 14197), (16, 14176),

Gene: Wipeout\_34 Start: 15842, Stop: 15636, Start Num: 9

Candidate Starts for Wipeout\_34:

(1, 15926), (Start: 9 @15842 has 32 MA's), (14, 15809), (23, 15650),

Gene: Wofford\_33 Start: 14982, Stop: 14776, Start Num: 9

Candidate Starts for Wofford\_33:

(5, 15027), (6, 15018), (Start: 9 @14982 has 32 MA's), (14, 14949), (23, 14790),

Gene: Yaboi\_37 Start: 16014, Stop: 15808, Start Num: 9

Candidate Starts for Yaboi\_37:

(Start: 9 @16014 has 32 MA's), (14, 15981), (20, 15885), (23, 15822),