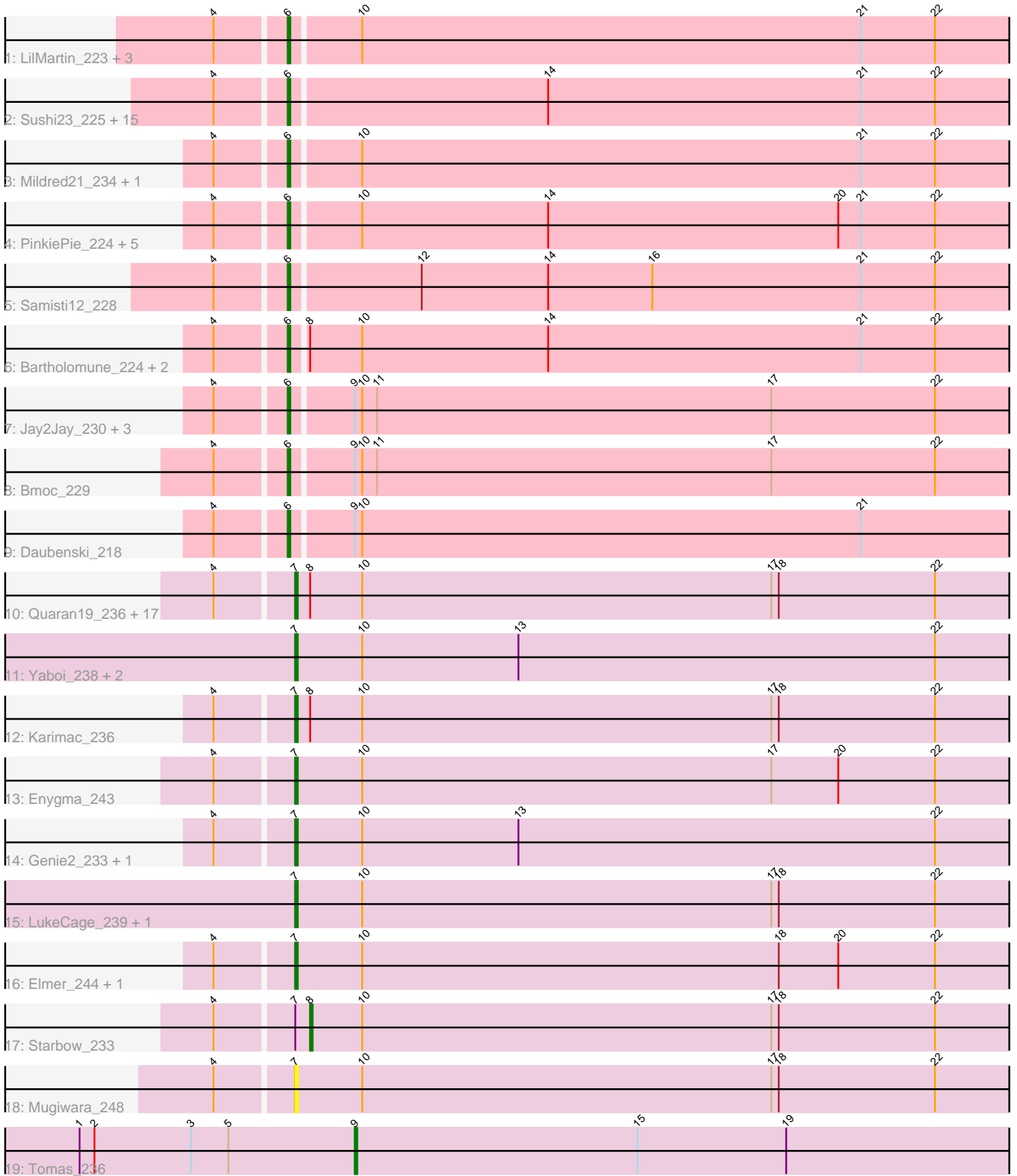


# Pham 186801



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 186801 Report

This analysis was run 11/02/24 on database version 579.

Pham number 186801 has 70 members, 4 are drafts.

Phages represented in each track:

- Track 1 : LilMartin\_223, MulchMansion\_227, Anedea\_237, Angela\_227
- Track 2 : Sushi23\_225, PacManQ\_221, BlueOtter\_222, HangryHippo\_222, Watermoore\_223, Scheme\_227, Tribute\_220, Larnav\_224, Teutsch\_223, Cross\_223, Pepperwood\_224, Leo04\_224, Peebs\_221, EGole\_228, Lululemon\_221, Cursive\_227
- Track 3 : Mildred21\_234, Paradiddles\_216
- Track 4 : PinkiePie\_224, Squillium\_227, Braelyn\_220, NootNoot\_221, Liandry\_224, WhereRU\_223
- Track 5 : Samisti12\_228
- Track 6 : Bartholomune\_224, Persimmon\_227, Navo\_218
- Track 7 : Jay2Jay\_230, Targaryen\_224, Evy\_214, Warpy\_227
- Track 8 : Bmoc\_229
- Track 9 : Daubenski\_218
- Track 10 : Quarant19\_236, Battuta\_234, Birchlyn\_235, PumpkinSpice\_239, CeilingFan\_248, Jollison\_233, Bordeaux\_234, Spilled\_243, Gibbi\_244, MindFlayer\_229, SaltySpittoon\_236, TomSawyer\_240, JimJam\_243, Wipeout\_226, KentuckyRacer\_242, Amabiko\_240, IchabodCrane\_230, Spelly\_241
- Track 11 : Yaboi\_238, Stanimal\_233, BoomerJR\_233
- Track 12 : Karimac\_236
- Track 13 : Enygma\_243
- Track 14 : Genie2\_233, Sollertia\_234
- Track 15 : LukeCage\_239, StarPlatinum\_243
- Track 16 : Elmer\_244, Wofford\_236
- Track 17 : Starbow\_233
- Track 18 : Mugiwara\_248
- Track 19 : Tomas\_236

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

The start number called the most often in the published annotations is 6, it was called in 37 of the 66 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anedea\_237, Angela\_227, Bartholomune\_224, BlueOtter\_222, Bmoc\_229, Braelyn\_220, Cross\_223, Cursive\_227, Daubenski\_218, EGole\_228, Evy\_214, HangryHippo\_222, Jay2Jay\_230, Larnav\_224, Leo04\_224, Liandry\_224, LilMartin\_223, Lululemon\_221, Mildred21\_234, MulchMansion\_227, Navo\_218, NootNoot\_221, PacManQ\_221, Paradiddles\_216, Peebs\_221, Pepperwood\_224, Persimmon\_227, PinkiePie\_224, Samisti12\_228, Scheme\_227, Squillium\_227, Sushi23\_225, Targaryen\_224, Teutsch\_223, Tribute\_220, Warpy\_227, Watermoore\_223, WhereRU\_223,

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

- 

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

- Amabiko\_240, Battuta\_234, Birchlyn\_235, BoomerJR\_233, Bordeaux\_234, CeilingFan\_248, Elmer\_244, Enygma\_243, Genie2\_233, Gibbi\_244, IchabodCrane\_230, JimJam\_243, Jollison\_233, Karimac\_236, KentuckyRacer\_242, LukeCage\_239, MindFlayer\_229, Mugiwara\_248, PumpkinSpice\_239, Quaran19\_236, SaltySpitoon\_236, Sollertia\_234, Spelly\_241, Spilled\_243, Stanimal\_233, StarPlatinum\_243, Starbow\_233, TomSawyer\_240, Tomas\_236, Wipeout\_226, Wofford\_236, Yaboi\_238,

### Summary by start number:

Start 6:

- Found in 38 of 70 ( 54.3% ) of genes in pham
- Manual Annotations of this start: 37 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anedea\_237 (BE1), Angela\_227 (BE1), Bartholomune\_224 (BE1), BlueOtter\_222 (BE1), Bmoc\_229 (BE1), Braelyn\_220 (BE1), Cross\_223 (BE1), Cursive\_227 (BE1), Daubenski\_218 (BE1), EGole\_228 (BE1), Evy\_214 (BE1), HangryHippo\_222 (BE1), Jay2Jay\_230 (BE1), Larnav\_224 (BE1), Leo04\_224 (BE1), Liandry\_224 (BE1), LilMartin\_223 (BE1), Lululemon\_221 (BE1), Mildred21\_234 (BE1), MulchMansion\_227 (BE1), Navo\_218 (BE1), NootNoot\_221 (BE1), PacManQ\_221 (BE1), Paradiddles\_216 (BE1), Peebs\_221 (BE1), Pepperwood\_224 (BE1), Persimmon\_227 (BE1), PinkiePie\_224 (BE1), Samisti12\_228 (BE1), Scheme\_227 (BE1), Squillium\_227 (BE1), Sushi23\_225 (BE1), Targaryen\_224 (BE1), Teutsch\_223 (BE1), Tribute\_220 (BE1), Warpy\_227 (BE1), Watermoore\_223 (BE1), WhereRU\_223 (BE1),

Start 7:

- Found in 31 of 70 ( 44.3% ) of genes in pham
- Manual Annotations of this start: 27 of 66
- Called 96.8% of time when present
- Phage (with cluster) where this start called: Amabiko\_240 (BE2), Battuta\_234 (BE2), Birchlyn\_235 (BE2), BoomerJR\_233 (BE2), Bordeaux\_234 (BE2), CeilingFan\_248 (BE2), Elmer\_244 (BE2), Enygma\_243 (BE2), Genie2\_233 (BE2), Gibbi\_244 (BE2), IchabodCrane\_230 (BE2), JimJam\_243 (BE2), Jollison\_233 (BE2), Karimac\_236 (BE2), KentuckyRacer\_242 (BE2), LukeCage\_239 (BE2), MindFlayer\_229 (BE2), Mugiwara\_248 (BE2), PumpkinSpice\_239 (BE2), Quaran19\_236 (BE2), SaltySpitoon\_236 (BE2), Sollertia\_234 (BE2), Spelly\_241 (BE2), Spilled\_243 (BE2), Stanimal\_233 (BE2), StarPlatinum\_243 (BE2), TomSawyer\_240 (BE2), Wipeout\_226 (BE2), Wofford\_236 (BE2), Yaboi\_238 (BE2),

Start 8:

- Found in 23 of 70 ( 32.9% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 4.3% of time when present
- Phage (with cluster) where this start called: Starbow\_233 (BE2),

Start 9:

- Found in 7 of 70 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Tomas\_236 (BE2),

**Summary by clusters:**

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

Info for manual annotations of cluster BE1:

- Start number 6 was manually annotated 37 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 7 was manually annotated 27 times for cluster BE2.
- Start number 8 was manually annotated 1 time for cluster BE2.
- Start number 9 was manually annotated 1 time for cluster BE2.

**Gene Information:**

Gene: Amabiko\_240 Start: 111391, Stop: 111699, Start Num: 7

Candidate Starts for Amabiko\_240:

(4, 111361), (Start: 7 @111391 has 27 MA's), (Start: 8 @111397 has 1 MA's), (10, 111418), (17, 111583), (18, 111586), (22, 111649),

Gene: Anedea\_237 Start: 114868, Stop: 115173, Start Num: 6

Candidate Starts for Anedea\_237:

(4, 114841), (Start: 6 @114868 has 37 MA's), (10, 114898), (21, 115099), (22, 115129),

Gene: Angela\_227 Start: 113095, Stop: 113397, Start Num: 6

Candidate Starts for Angela\_227:

(4, 113068), (Start: 6 @113095 has 37 MA's), (10, 113122), (21, 113323), (22, 113353),

Gene: Bartholomune\_224 Start: 112848, Stop: 113156, Start Num: 6

Candidate Starts for Bartholomune\_224:

(4, 112821), (Start: 6 @112848 has 37 MA's), (Start: 8 @112854 has 1 MA's), (10, 112875), (14, 112950), (21, 113076), (22, 113106),

Gene: Battuta\_234 Start: 110706, Stop: 111014, Start Num: 7

Candidate Starts for Battuta\_234:

(4, 110676), (Start: 7 @110706 has 27 MA's), (Start: 8 @110712 has 1 MA's), (10, 110733), (17, 110898), (18, 110901), (22, 110964),

Gene: Birchlyn\_235 Start: 108639, Stop: 108947, Start Num: 7

Candidate Starts for Birchlyn\_235:

(4, 108609), (Start: 7 @108639 has 27 MA's), (Start: 8 @108645 has 1 MA's), (10, 108666), (17, 108831), (18, 108834), (22, 108897),

Gene: BlueOtter\_222 Start: 112984, Stop: 113292, Start Num: 6

Candidate Starts for BlueOtter\_222:

(4, 112957), (Start: 6 @112984 has 37 MA's), (14, 113086), (21, 113212), (22, 113242),

Gene: Bmoc\_229 Start: 113536, Stop: 113847, Start Num: 6

Candidate Starts for Bmoc\_229:

(4, 113509), (Start: 6 @113536 has 37 MA's), (Start: 9 @113560 has 1 MA's), (10, 113563), (11, 113569), (17, 113728), (22, 113794),

Gene: BoomerJR\_233 Start: 111307, Stop: 111612, Start Num: 7

Candidate Starts for BoomerJR\_233:

(Start: 7 @111307 has 27 MA's), (10, 111334), (13, 111397), (22, 111565),

Gene: Bordeaux\_234 Start: 111289, Stop: 111597, Start Num: 7

Candidate Starts for Bordeaux\_234:

(4, 111259), (Start: 7 @111289 has 27 MA's), (Start: 8 @111295 has 1 MA's), (10, 111316), (17, 111481), (18, 111484), (22, 111547),

Gene: Braelyn\_220 Start: 112495, Stop: 112803, Start Num: 6

Candidate Starts for Braelyn\_220:

(4, 112468), (Start: 6 @112495 has 37 MA's), (10, 112522), (14, 112597), (20, 112714), (21, 112723), (22, 112753),

Gene: CeilingFan\_248 Start: 112084, Stop: 112392, Start Num: 7

Candidate Starts for CeilingFan\_248:

(4, 112054), (Start: 7 @112084 has 27 MA's), (Start: 8 @112090 has 1 MA's), (10, 112111), (17, 112276), (18, 112279), (22, 112342),

Gene: Cross\_223 Start: 113629, Stop: 113937, Start Num: 6

Candidate Starts for Cross\_223:

(4, 113602), (Start: 6 @113629 has 37 MA's), (14, 113731), (21, 113857), (22, 113887),

Gene: Cursive\_227 Start: 113736, Stop: 114044, Start Num: 6

Candidate Starts for Cursive\_227:

(4, 113709), (Start: 6 @113736 has 37 MA's), (14, 113838), (21, 113964), (22, 113994),

Gene: Daubenski\_218 Start: 114118, Stop: 114420, Start Num: 6

Candidate Starts for Daubenski\_218:

(4, 114091), (Start: 6 @114118 has 37 MA's), (Start: 9 @114142 has 1 MA's), (10, 114145), (21, 114346),

Gene: EGole\_228 Start: 115820, Stop: 116128, Start Num: 6

Candidate Starts for EGole\_228:

(4, 115793), (Start: 6 @115820 has 37 MA's), (14, 115922), (21, 116048), (22, 116078),

Gene: Elmer\_244 Start: 114882, Stop: 115190, Start Num: 7

Candidate Starts for Elmer\_244:

(4, 114852), (Start: 7 @114882 has 27 MA's), (10, 114909), (18, 115077), (20, 115101), (22, 115140),

Gene: Enygma\_243 Start: 114092, Stop: 114400, Start Num: 7

Candidate Starts for Enygma\_243:

(4, 114062), (Start: 7 @114092 has 27 MA's), (10, 114119), (17, 114284), (20, 114311), (22, 114350),

Gene: Evy\_214 Start: 113803, Stop: 114114, Start Num: 6

Candidate Starts for Evy\_214:

(4, 113776), (Start: 6 @113803 has 37 MA's), (Start: 9 @113827 has 1 MA's), (10, 113830), (11, 113836), (17, 113995), (22, 114061),

Gene: Genie2\_233 Start: 111432, Stop: 111740, Start Num: 7

Candidate Starts for Genie2\_233:

(4, 111402), (Start: 7 @111432 has 27 MA's), (10, 111459), (13, 111522), (22, 111690),

Gene: Gibbi\_244 Start: 111577, Stop: 111885, Start Num: 7

Candidate Starts for Gibbi\_244:

(4, 111547), (Start: 7 @111577 has 27 MA's), (Start: 8 @111583 has 1 MA's), (10, 111604), (17, 111769), (18, 111772), (22, 111835),

Gene: HangryHippo\_222 Start: 112984, Stop: 113292, Start Num: 6

Candidate Starts for HangryHippo\_222:

(4, 112957), (Start: 6 @112984 has 37 MA's), (14, 113086), (21, 113212), (22, 113242),

Gene: IchabodCrane\_230 Start: 111092, Stop: 111400, Start Num: 7

Candidate Starts for IchabodCrane\_230:

(4, 111062), (Start: 7 @111092 has 27 MA's), (Start: 8 @111098 has 1 MA's), (10, 111119), (17, 111284), (18, 111287), (22, 111350),

Gene: Jay2Jay\_230 Start: 113958, Stop: 114269, Start Num: 6

Candidate Starts for Jay2Jay\_230:

(4, 113931), (Start: 6 @113958 has 37 MA's), (Start: 9 @113982 has 1 MA's), (10, 113985), (11, 113991), (17, 114150), (22, 114216),

Gene: JimJam\_243 Start: 113013, Stop: 113321, Start Num: 7

Candidate Starts for JimJam\_243:

(4, 112983), (Start: 7 @113013 has 27 MA's), (Start: 8 @113019 has 1 MA's), (10, 113040), (17, 113205), (18, 113208), (22, 113271),

Gene: Jollison\_233 Start: 111223, Stop: 111531, Start Num: 7

Candidate Starts for Jollison\_233:

(4, 111193), (Start: 7 @111223 has 27 MA's), (Start: 8 @111229 has 1 MA's), (10, 111250), (17, 111415), (18, 111418), (22, 111481),

Gene: Karimac\_236 Start: 111408, Stop: 111716, Start Num: 7

Candidate Starts for Karimac\_236:

(4, 111378), (Start: 7 @111408 has 27 MA's), (Start: 8 @111414 has 1 MA's), (10, 111435), (17, 111600), (18, 111603), (22, 111666),

Gene: KentuckyRacer\_242 Start: 112928, Stop: 113236, Start Num: 7

Candidate Starts for KentuckyRacer\_242:

(4, 112898), (Start: 7 @112928 has 27 MA's), (Start: 8 @112934 has 1 MA's), (10, 112955), (17, 113120), (18, 113123), (22, 113186),

Gene: Larnav\_224 Start: 113902, Stop: 114210, Start Num: 6

Candidate Starts for Larnav\_224:

(4, 113875), (Start: 6 @113902 has 37 MA's), (14, 114004), (21, 114130), (22, 114160),

Gene: Leo04\_224 Start: 114010, Stop: 114318, Start Num: 6

Candidate Starts for Leo04\_224:

(4, 113983), (Start: 6 @114010 has 37 MA's), (14, 114112), (21, 114238), (22, 114268),

Gene: Liandry\_224 Start: 113384, Stop: 113692, Start Num: 6

Candidate Starts for Liandry\_224:

(4, 113357), (Start: 6 @113384 has 37 MA's), (10, 113411), (14, 113486), (20, 113603), (21, 113612), (22, 113642),

Gene: LilMartin\_223 Start: 112035, Stop: 112337, Start Num: 6

Candidate Starts for LilMartin\_223:

(4, 112008), (Start: 6 @112035 has 37 MA's), (10, 112062), (21, 112263), (22, 112293),

Gene: LukeCage\_239 Start: 113253, Stop: 113561, Start Num: 7

Candidate Starts for LukeCage\_239:

(Start: 7 @113253 has 27 MA's), (10, 113280), (17, 113445), (18, 113448), (22, 113511),

Gene: Lululemon\_221 Start: 112789, Stop: 113097, Start Num: 6

Candidate Starts for Lululemon\_221:

(4, 112762), (Start: 6 @112789 has 37 MA's), (14, 112891), (21, 113017), (22, 113047),

Gene: Mildred21\_234 Start: 112174, Stop: 112482, Start Num: 6

Candidate Starts for Mildred21\_234:

(4, 112147), (Start: 6 @112174 has 37 MA's), (10, 112201), (21, 112402), (22, 112432),

Gene: MindFlayer\_229 Start: 110608, Stop: 110916, Start Num: 7

Candidate Starts for MindFlayer\_229:

(4, 110578), (Start: 7 @110608 has 27 MA's), (Start: 8 @110614 has 1 MA's), (10, 110635), (17, 110800), (18, 110803), (22, 110866),

Gene: Mugiwara\_248 Start: 113791, Stop: 114099, Start Num: 7

Candidate Starts for Mugiwara\_248:

(4, 113761), (Start: 7 @113791 has 27 MA's), (10, 113818), (17, 113983), (18, 113986), (22, 114049),

Gene: MulchMansion\_227 Start: 113669, Stop: 113971, Start Num: 6

Candidate Starts for MulchMansion\_227:

(4, 113642), (Start: 6 @113669 has 37 MA's), (10, 113696), (21, 113897), (22, 113927),

Gene: Navo\_218 Start: 111699, Stop: 112007, Start Num: 6

Candidate Starts for Navo\_218:

(4, 111672), (Start: 6 @111699 has 37 MA's), (Start: 8 @111705 has 1 MA's), (10, 111726), (14, 111801), (21, 111927), (22, 111957),

Gene: NootNoot\_221 Start: 112229, Stop: 112537, Start Num: 6

Candidate Starts for NootNoot\_221:

(4, 112202), (Start: 6 @112229 has 37 MA's), (10, 112256), (14, 112331), (20, 112448), (21, 112457), (22, 112487),

Gene: PacManQ\_221 Start: 112789, Stop: 113097, Start Num: 6

Candidate Starts for PacManQ\_221:

(4, 112762), (Start: 6 @112789 has 37 MA's), (14, 112891), (21, 113017), (22, 113047),

Gene: Paradiddles\_216 Start: 114604, Stop: 114912, Start Num: 6

Candidate Starts for Paradiddles\_216:

(4, 114577), (Start: 6 @114604 has 37 MA's), (10, 114631), (21, 114832), (22, 114862),

Gene: Peebs\_221 Start: 113873, Stop: 114181, Start Num: 6

Candidate Starts for Peebs\_221:

(4, 113846), (Start: 6 @113873 has 37 MA's), (14, 113975), (21, 114101), (22, 114131),

Gene: Pepperwood\_224 Start: 113681, Stop: 113989, Start Num: 6

Candidate Starts for Pepperwood\_224:

(4, 113654), (Start: 6 @113681 has 37 MA's), (14, 113783), (21, 113909), (22, 113939),

Gene: Persimmon\_227 Start: 112717, Stop: 113025, Start Num: 6

Candidate Starts for Persimmon\_227:

(4, 112690), (Start: 6 @112717 has 37 MA's), (Start: 8 @112723 has 1 MA's), (10, 112744), (14, 112819), (21, 112945), (22, 112975),

Gene: PinkiePie\_224 Start: 113384, Stop: 113692, Start Num: 6

Candidate Starts for PinkiePie\_224:

(4, 113357), (Start: 6 @113384 has 37 MA's), (10, 113411), (14, 113486), (20, 113603), (21, 113612), (22, 113642),

Gene: PumpkinSpice\_239 Start: 111829, Stop: 112137, Start Num: 7

Candidate Starts for PumpkinSpice\_239:

(4, 111799), (Start: 7 @111829 has 27 MA's), (Start: 8 @111835 has 1 MA's), (10, 111856), (17, 112021), (18, 112024), (22, 112087),

Gene: Quaran19\_236 Start: 111270, Stop: 111578, Start Num: 7

Candidate Starts for Quaran19\_236:

(4, 111240), (Start: 7 @111270 has 27 MA's), (Start: 8 @111276 has 1 MA's), (10, 111297), (17, 111462), (18, 111465), (22, 111528),

Gene: SaltySpittoon\_236 Start: 110812, Stop: 111120, Start Num: 7

Candidate Starts for SaltySpittoon\_236:

(4, 110782), (Start: 7 @110812 has 27 MA's), (Start: 8 @110818 has 1 MA's), (10, 110839), (17, 111004), (18, 111007), (22, 111070),

Gene: Samisti12\_228 Start: 115275, Stop: 115583, Start Num: 6

Candidate Starts for Samisti12\_228:

(4, 115248), (Start: 6 @115275 has 37 MA's), (12, 115326), (14, 115377), (16, 115419), (21, 115503), (22, 115533),

Gene: Scheme\_227 Start: 114920, Stop: 115228, Start Num: 6

Candidate Starts for Scheme\_227:

(4, 114893), (Start: 6 @114920 has 37 MA's), (14, 115022), (21, 115148), (22, 115178),

Gene: Sollertia\_234 Start: 111421, Stop: 111729, Start Num: 7

Candidate Starts for Sollertia\_234:

(4, 111391), (Start: 7 @111421 has 27 MA's), (10, 111448), (13, 111511), (22, 111679),

Gene: Spelly\_241 Start: 110741, Stop: 111049, Start Num: 7

Candidate Starts for Spelly\_241:



(4, 110711), (Start: 7 @110741 has 27 MA's), (Start: 8 @110747 has 1 MA's), (10, 110768), (17, 110933), (18, 110936), (22, 110999),

Gene: Spilled\_243 Start: 111945, Stop: 112253, Start Num: 7

Candidate Starts for Spilled\_243:

(4, 111915), (Start: 7 @111945 has 27 MA's), (Start: 8 @111951 has 1 MA's), (10, 111972), (17, 112137), (18, 112140), (22, 112203),

Gene: Squillium\_227 Start: 113386, Stop: 113694, Start Num: 6

Candidate Starts for Squillium\_227:

(4, 113359), (Start: 6 @113386 has 37 MA's), (10, 113413), (14, 113488), (20, 113605), (21, 113614), (22, 113644),

Gene: Stanimal\_233 Start: 111793, Stop: 112098, Start Num: 7

Candidate Starts for Stanimal\_233:

(Start: 7 @111793 has 27 MA's), (10, 111820), (13, 111883), (22, 112051),

Gene: StarPlatinum\_243 Start: 113753, Stop: 114061, Start Num: 7

Candidate Starts for StarPlatinum\_243:

(Start: 7 @113753 has 27 MA's), (10, 113780), (17, 113945), (18, 113948), (22, 114011),

Gene: Starbow\_233 Start: 110791, Stop: 111093, Start Num: 8

Candidate Starts for Starbow\_233:

(4, 110755), (Start: 7 @110785 has 27 MA's), (Start: 8 @110791 has 1 MA's), (10, 110812), (17, 110977), (18, 110980), (22, 111043),

Gene: Sushi23\_225 Start: 114739, Stop: 115047, Start Num: 6

Candidate Starts for Sushi23\_225:

(4, 114712), (Start: 6 @114739 has 37 MA's), (14, 114841), (21, 114967), (22, 114997),

Gene: Targaryen\_224 Start: 114911, Stop: 115222, Start Num: 6

Candidate Starts for Targaryen\_224:

(4, 114884), (Start: 6 @114911 has 37 MA's), (Start: 9 @114935 has 1 MA's), (10, 114938), (11, 114944), (17, 115103), (22, 115169),

Gene: Teutsch\_223 Start: 114104, Stop: 114412, Start Num: 6

Candidate Starts for Teutsch\_223:

(4, 114077), (Start: 6 @114104 has 37 MA's), (14, 114206), (21, 114332), (22, 114362),

Gene: TomSawyer\_240 Start: 113256, Stop: 113564, Start Num: 7

Candidate Starts for TomSawyer\_240:

(4, 113226), (Start: 7 @113256 has 27 MA's), (Start: 8 @113262 has 1 MA's), (10, 113283), (17, 113448), (18, 113451), (22, 113514),

Gene: Tomas\_236 Start: 115186, Stop: 115470, Start Num: 9

Candidate Starts for Tomas\_236:

(1, 115075), (2, 115081), (3, 115120), (5, 115135), (Start: 9 @115186 has 1 MA's), (15, 115300), (19, 115360),

Gene: Tribute\_220 Start: 114269, Stop: 114577, Start Num: 6

Candidate Starts for Tribute\_220:

(4, 114242), (Start: 6 @114269 has 37 MA's), (14, 114371), (21, 114497), (22, 114527),

Gene: Warpy\_227 Start: 113396, Stop: 113707, Start Num: 6

Candidate Starts for Warpy\_227:

(4, 113369), (Start: 6 @113396 has 37 MA's), (Start: 9 @113420 has 1 MA's), (10, 113423), (11, 113429), (17, 113588), (22, 113654),

Gene: Watermoore\_223 Start: 114627, Stop: 114935, Start Num: 6

Candidate Starts for Watermoore\_223:

(4, 114600), (Start: 6 @114627 has 37 MA's), (14, 114729), (21, 114855), (22, 114885),

Gene: WhereRU\_223 Start: 112878, Stop: 113186, Start Num: 6

Candidate Starts for WhereRU\_223:

(4, 112851), (Start: 6 @112878 has 37 MA's), (10, 112905), (14, 112980), (20, 113097), (21, 113106), (22, 113136),

Gene: Wipeout\_226 Start: 112208, Stop: 112516, Start Num: 7

Candidate Starts for Wipeout\_226:

(4, 112178), (Start: 7 @112208 has 27 MA's), (Start: 8 @112214 has 1 MA's), (10, 112235), (17, 112400), (18, 112403), (22, 112466),

Gene: Wofford\_236 Start: 114496, Stop: 114804, Start Num: 7

Candidate Starts for Wofford\_236:

(4, 114466), (Start: 7 @114496 has 27 MA's), (10, 114523), (18, 114691), (20, 114715), (22, 114754),

Gene: Yaboi\_238 Start: 111356, Stop: 111661, Start Num: 7

Candidate Starts for Yaboi\_238:

(Start: 7 @111356 has 27 MA's), (10, 111383), (13, 111446), (22, 111614),