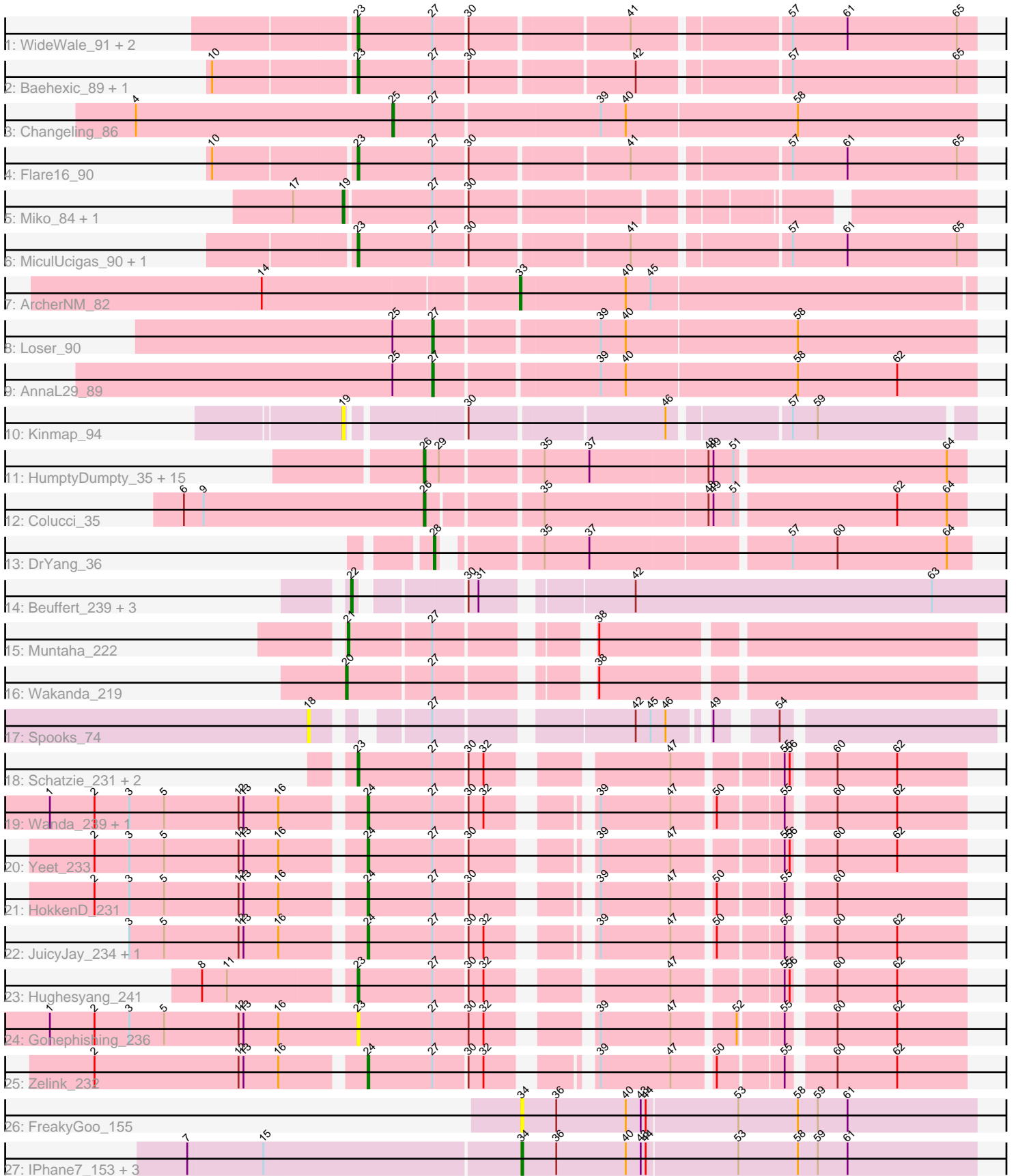


Pham 202975



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 202975 Report

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

Pham number 202975 has 57 members, 6 are drafts.

Phages represented in each track:

- Track 1 : WideWale\_91, Equemioh13\_90, Updawg\_91
- Track 2 : Baehexic\_89, Centaur\_90
- Track 3 : Changeling\_86
- Track 4 : Flare16\_90
- Track 5 : Miko\_84, Rachaly\_85
- Track 6 : MiculUcigas\_90, Sknot\_90
- Track 7 : ArcherNM\_82
- Track 8 : Loser\_90
- Track 9 : AnnaL29\_89
- Track 10 : Kinmap\_94
- Track 11 : HumptyDumpty\_35, RosiePosie\_35, EdgarPoe\_35, Linus\_35, Tophat\_35, Conboy\_35, JayCookie\_35, Chocolat\_35, MoyaNatalis\_35, JaNo\_35, Scavito\_35, Chipper1996\_350, Chubster\_35, PrincessTrina\_35, Mordred\_35, Kabreeze\_35
- Track 12 : Colucci\_35
- Track 13 : DrYang\_36
- Track 14 : Beuffert\_239, Blueeyedbeauty\_241, Annadreamy\_229, Limpid\_236
- Track 15 : Muntaha\_222
- Track 16 : Wakanda\_219
- Track 17 : Spooks\_74
- Track 18 : Schatzie\_231, BAKA\_241, Phoebus\_237
- Track 19 : Wanda\_239, Klein\_247
- Track 20 : Yeet\_233
- Track 21 : HokkenD\_231
- Track 22 : JuicyJay\_234, Beem\_242
- Track 23 : Hughesyang\_241
- Track 24 : Gonephishing\_236
- Track 25 : Zelink\_232
- Track 26 : FreakyGoo\_155
- Track 27 : IPhone7\_153, TyDawg\_149, Auspice\_156, SlimJimmy\_153

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

The start number called the most often in the published annotations is 26, it was called in 16 of the 51 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Chipper1996\_350, Chocolat\_35, Chubster\_35, Colucci\_35, Conboy\_35, EdgarPoe\_35, HumptyDumpty\_35, JaNo\_35, JayCookie\_35, Kabreeze\_35, Linus\_35, Mordred\_35, MoyaNatalis\_35, PrincessTrina\_35, RosiePosie\_35, Scavito\_35, Tophat\_35,

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

- 

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

- AnnaL29\_89, Annadreamy\_229, ArcherNM\_82, Auspice\_156, BAKA\_241, Baehexic\_89, Beem\_242, Beuffert\_239, Blueeyedbeauty\_241, Centaur\_90, Changeling\_86, DrYang\_36, Equemioh13\_90, Flare16\_90, FreakyGoo\_155, Gonephishing\_236, HokkenD\_231, Hughesyang\_241, IPhane7\_153, JuicyJay\_234, Kinmap\_94, Klein\_247, Limpid\_236, Loser\_90, MiculUcigas\_90, Miko\_84, Muntaha\_222, Phoebus\_237, Rachaly\_85, Schatzie\_231, Sknot\_90, SlimJimmy\_153, Spooks\_74, TyDawg\_149, Updawg\_91, Wakanda\_219, Wanda\_239, WideWale\_91, Yeet\_233, Zelink\_232,

### Summary by start number:

Start 18:

- Found in 1 of 57 ( 1.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Spooks\_74 (BT),

Start 19:

- Found in 3 of 57 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 2 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kinmap\_94 (A21), Miko\_84 (A2), Rachaly\_85 (A2),

Start 20:

- Found in 1 of 57 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wakanda\_219 (BK2),

Start 21:

- Found in 1 of 57 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Muntaha\_222 (BK2),

Start 22:

- Found in 4 of 57 ( 7.0% ) of genes in pham
- Manual Annotations of this start: 4 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy\_229 (BK1), Beuffert\_239 (BK1), Blueeyedbeauty\_241 (BK1), Limpid\_236 (BK1),

Start 23:

- Found in 13 of 57 ( 22.8% ) of genes in pham
- Manual Annotations of this start: 11 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BAKA\_241 (J), Baehexic\_89 (A2), Centaur\_90 (A2), Equemioh13\_90 (A2), Flare16\_90 (A2), Gonephishing\_236 (J), Hughesyang\_241 (J), MiculUcigas\_90 (A2), Phoebus\_237 (J), Schatzie\_231 (J), Sknot\_90 (A2), Updawg\_91 (A2), WideWale\_91 (A2),

Start 24:

- Found in 7 of 57 ( 12.3% ) of genes in pham
- Manual Annotations of this start: 7 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beem\_242 (J), HokkenD\_231 (J), JuicyJay\_234 (J), Klein\_247 (J), Wanda\_239 (J), Yeet\_233 (J), Zelink\_232 (J),

Start 25:

- Found in 3 of 57 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 1 of 51
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Changeling\_86 (A2),

Start 26:

- Found in 17 of 57 ( 29.8% ) of genes in pham
- Manual Annotations of this start: 16 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chipper1996\_350 (AR), Chocolat\_35 (AR), Chubster\_35 (AR), Colucci\_35 (AR), Conboy\_35 (AR), EdgarPoe\_35 (AR), HumptyDumpty\_35 (AR), JaNo\_35 (AR), JayCookie\_35 (AR), Kabreeze\_35 (AR), Linus\_35 (AR), Mordred\_35 (AR), MoyaNatalis\_35 (AR), PrincessTrina\_35 (AR), RosiePosie\_35 (AR), Scavito\_35 (AR), Tophat\_35 (AR),

Start 27:

- Found in 28 of 57 ( 49.1% ) of genes in pham
- Manual Annotations of this start: 2 of 51
- Called 7.1% of time when present
- Phage (with cluster) where this start called: AnnaL29\_89 (A2), Loser\_90 (A2),

Start 28:

- Found in 1 of 57 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DrYang\_36 (AR),

Start 33:

- Found in 1 of 57 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArcherNM\_82 (A2),

Start 34:

- Found in 5 of 57 ( 8.8% ) of genes in pham

- Manual Annotations of this start: 4 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Auspice\_156 (M1), FreakyGoo\_155 (M1), IPhone7\_153 (M1), SlimJimmy\_153 (M1), TyDawg\_149 (M1),

### **Summary by clusters:**

There are 8 clusters represented in this pham: A21, J, BT, A2, M1, BK1, BK2, AR,

Info for manual annotations of cluster A2:

- Start number 19 was manually annotated 2 times for cluster A2.
- Start number 23 was manually annotated 7 times for cluster A2.
- Start number 25 was manually annotated 1 time for cluster A2.
- Start number 27 was manually annotated 2 times for cluster A2.
- Start number 33 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster AR:

- Start number 26 was manually annotated 16 times for cluster AR.
- Start number 28 was manually annotated 1 time for cluster AR.

Info for manual annotations of cluster BK1:

- Start number 22 was manually annotated 4 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 20 was manually annotated 1 time for cluster BK2.
- Start number 21 was manually annotated 1 time for cluster BK2.

Info for manual annotations of cluster J:

- Start number 23 was manually annotated 4 times for cluster J.
- Start number 24 was manually annotated 7 times for cluster J.

Info for manual annotations of cluster M1:

- Start number 34 was manually annotated 4 times for cluster M1.

### **Gene Information:**

Gene: AnnaL29\_89 Start: 49609, Stop: 49292, Start Num: 27

Candidate Starts for AnnaL29\_89:

(Start: 25 @49633 has 1 MA's), (Start: 27 @49609 has 2 MA's), (39, 49516), (40, 49501), (58, 49399), (62, 49339),

Gene: Annadreamy\_229 Start: 111840, Stop: 112202, Start Num: 22

Candidate Starts for Annadreamy\_229:

(Start: 22 @111840 has 4 MA's), (30, 111894), (31, 111900), (42, 111978), (63, 112155),

Gene: ArcherNM\_82 Start: 48789, Stop: 48520, Start Num: 33

Candidate Starts for ArcherNM\_82:

(14, 48936), (Start: 33 @48789 has 1 MA's), (40, 48726), (45, 48711),

Gene: Auspice\_156 Start: 78089, Stop: 77817, Start Num: 34

Candidate Starts for Auspice\_156:

(7, 78284), (15, 78239), (Start: 34 @78089 has 4 MA's), (36, 78068), (40, 78026), (43, 78017), (44, 78014), (53, 77960), (58, 77924), (59, 77912), (61, 77894),

Gene: BAKA\_241 Start: 110720, Stop: 110400, Start Num: 23

Candidate Starts for BAKA\_241:

(Start: 23 @110720 has 11 MA's), (Start: 27 @110675 has 2 MA's), (30, 110657), (32, 110648), (47, 110558), (55, 110501), (56, 110498), (60, 110477), (62, 110441),

Gene: Baehexic\_89 Start: 49622, Stop: 49272, Start Num: 23

Candidate Starts for Baehexic\_89:

(10, 49703), (Start: 23 @49622 has 11 MA's), (Start: 27 @49577 has 2 MA's), (30, 49559), (42, 49466), (57, 49382), (65, 49283),

Gene: Beem\_242 Start: 112166, Stop: 111855, Start Num: 24

Candidate Starts for Beem\_242:

(3, 112301), (5, 112280), (12, 112235), (13, 112232), (16, 112211), (Start: 24 @112166 has 7 MA's), (Start: 27 @112127 has 2 MA's), (30, 112109), (32, 112100), (39, 112055), (47, 112013), (50, 111992), (55, 111956), (60, 111932), (62, 111896),

Gene: Beuffert\_239 Start: 116330, Stop: 116692, Start Num: 22

Candidate Starts for Beuffert\_239:

(Start: 22 @116330 has 4 MA's), (30, 116384), (31, 116390), (42, 116468), (63, 116645),

Gene: Blueeyedbeauty\_241 Start: 116156, Stop: 116518, Start Num: 22

Candidate Starts for Blueeyedbeauty\_241:

(Start: 22 @116156 has 4 MA's), (30, 116210), (31, 116216), (42, 116294), (63, 116471),

Gene: Centaur\_90 Start: 49489, Stop: 49139, Start Num: 23

Candidate Starts for Centaur\_90:

(10, 49570), (Start: 23 @49489 has 11 MA's), (Start: 27 @49444 has 2 MA's), (30, 49426), (42, 49333), (57, 49249), (65, 49150),

Gene: Changeling\_86 Start: 49621, Stop: 49277, Start Num: 25

Candidate Starts for Changeling\_86:

(4, 49774), (Start: 25 @49621 has 1 MA's), (Start: 27 @49597 has 2 MA's), (39, 49501), (40, 49486), (58, 49384),

Gene: Chipper1996\_350 Start: 29519, Stop: 29208, Start Num: 26

Candidate Starts for Chipper1996\_350:

(Start: 26 @29519 has 16 MA's), (29, 29510), (35, 29453), (37, 29426), (48, 29357), (49, 29354), (51, 29342), (64, 29219),

Gene: Chocolat\_35 Start: 29519, Stop: 29208, Start Num: 26

Candidate Starts for Chocolat\_35:

(Start: 26 @29519 has 16 MA's), (29, 29510), (35, 29453), (37, 29426), (48, 29357), (49, 29354), (51, 29342), (64, 29219),

Gene: Chubster\_35 Start: 29291, Stop: 28980, Start Num: 26

Candidate Starts for Chubster\_35:

(Start: 26 @29291 has 16 MA's), (29, 29282), (35, 29225), (37, 29198), (48, 29129), (49, 29126), (51, 29114), (64, 28991),

Gene: Colucci\_35 Start: 29165, Stop: 28857, Start Num: 26

Candidate Starts for Colucci\_35:

(6, 29309), (9, 29297), (Start: 26 @29165 has 16 MA's), (35, 29102), (48, 29006), (49, 29003), (51, 28991), (62, 28898), (64, 28868),

Gene: Conboy\_35 Start: 29518, Stop: 29207, Start Num: 26

Candidate Starts for Conboy\_35:

(Start: 26 @29518 has 16 MA's), (29, 29509), (35, 29452), (37, 29425), (48, 29356), (49, 29353), (51, 29341), (64, 29218),

Gene: DrYang\_36 Start: 30909, Stop: 30613, Start Num: 28

Candidate Starts for DrYang\_36:

(Start: 28 @30909 has 1 MA's), (35, 30861), (37, 30834), (57, 30720), (60, 30693), (64, 30627),

Gene: EdgarPoe\_35 Start: 29518, Stop: 29207, Start Num: 26

Candidate Starts for EdgarPoe\_35:

(Start: 26 @29518 has 16 MA's), (29, 29509), (35, 29452), (37, 29425), (48, 29356), (49, 29353), (51, 29341), (64, 29218),

Gene: Equemioh13\_90 Start: 49724, Stop: 49374, Start Num: 23

Candidate Starts for Equemioh13\_90:

(Start: 23 @49724 has 11 MA's), (Start: 27 @49679 has 2 MA's), (30, 49661), (41, 49571), (57, 49484), (61, 49451), (65, 49385),

Gene: Flare16\_90 Start: 49539, Stop: 49189, Start Num: 23

Candidate Starts for Flare16\_90:

(10, 49620), (Start: 23 @49539 has 11 MA's), (Start: 27 @49494 has 2 MA's), (30, 49476), (41, 49386), (57, 49299), (61, 49266), (65, 49200),

Gene: FreakyGoo\_155 Start: 78003, Stop: 77731, Start Num: 34

Candidate Starts for FreakyGoo\_155:

(Start: 34 @78003 has 4 MA's), (36, 77982), (40, 77940), (43, 77931), (44, 77928), (53, 77874), (58, 77838), (59, 77826), (61, 77808),

Gene: Gonephishing\_236 Start: 109863, Stop: 109540, Start Num: 23

Candidate Starts for Gonephishing\_236:

(1, 110049), (2, 110022), (3, 110001), (5, 109980), (12, 109935), (13, 109932), (16, 109911), (Start: 23 @109863 has 11 MA's), (Start: 27 @109818 has 2 MA's), (30, 109797), (32, 109788), (39, 109740), (47, 109698), (52, 109665), (55, 109641), (60, 109617), (62, 109581),

Gene: HokkenD\_231 Start: 112106, Stop: 111795, Start Num: 24

Candidate Starts for HokkenD\_231:

(2, 112262), (3, 112241), (5, 112220), (12, 112175), (13, 112172), (16, 112151), (Start: 24 @112106 has 7 MA's), (Start: 27 @112067 has 2 MA's), (30, 112049), (39, 111995), (47, 111953), (50, 111932), (55, 111896), (60, 111872),

Gene: Hughesyang\_241 Start: 112144, Stop: 111824, Start Num: 23

Candidate Starts for Hughesyang\_241:

(8, 112228), (11, 112213), (Start: 23 @112144 has 11 MA's), (Start: 27 @112099 has 2 MA's), (30, 112081), (32, 112072), (47, 111982), (55, 111925), (56, 111922), (60, 111901), (62, 111865),

Gene: HumptyDumpty\_35 Start: 29517, Stop: 29206, Start Num: 26

Candidate Starts for HumptyDumpty\_35:

(Start: 26 @29517 has 16 MA's), (29, 29508), (35, 29451), (37, 29424), (48, 29355), (49, 29352), (51, 29340), (64, 29217),

Gene: IPhane7\_153 Start: 77705, Stop: 77433, Start Num: 34

Candidate Starts for IPhane7\_153:

(7, 77900), (15, 77855), (Start: 34 @77705 has 4 MA's), (36, 77684), (40, 77642), (43, 77633), (44, 77630), (53, 77576), (58, 77540), (59, 77528), (61, 77510),

Gene: JaNo\_35 Start: 29517, Stop: 29206, Start Num: 26

Candidate Starts for JaNo\_35:

(Start: 26 @29517 has 16 MA's), (29, 29508), (35, 29451), (37, 29424), (48, 29355), (49, 29352), (51, 29340), (64, 29217),

Gene: JayCookie\_35 Start: 29521, Stop: 29210, Start Num: 26

Candidate Starts for JayCookie\_35:

(Start: 26 @29521 has 16 MA's), (29, 29512), (35, 29455), (37, 29428), (48, 29359), (49, 29356), (51, 29344), (64, 29221),

Gene: JuicyJay\_234 Start: 112115, Stop: 111804, Start Num: 24

Candidate Starts for JuicyJay\_234:

(3, 112250), (5, 112229), (12, 112184), (13, 112181), (16, 112160), (Start: 24 @112115 has 7 MA's), (Start: 27 @112076 has 2 MA's), (30, 112058), (32, 112049), (39, 112004), (47, 111962), (50, 111941), (55, 111905), (60, 111881), (62, 111845),

Gene: Kabreeze\_35 Start: 29517, Stop: 29206, Start Num: 26

Candidate Starts for Kabreeze\_35:

(Start: 26 @29517 has 16 MA's), (29, 29508), (35, 29451), (37, 29424), (48, 29355), (49, 29352), (51, 29340), (64, 29217),

Gene: Kinmap\_94 Start: 48187, Stop: 47843, Start Num: 19

Candidate Starts for Kinmap\_94:

(Start: 19 @48187 has 2 MA's), (30, 48124), (46, 48013), (57, 47947), (59, 47932),

Gene: Klein\_247 Start: 111346, Stop: 111035, Start Num: 24

Candidate Starts for Klein\_247:

(1, 111529), (2, 111502), (3, 111481), (5, 111460), (12, 111415), (13, 111412), (16, 111391), (Start: 24 @111346 has 7 MA's), (Start: 27 @111307 has 2 MA's), (30, 111289), (32, 111280), (39, 111235), (47, 111193), (50, 111172), (55, 111136), (60, 111112), (62, 111076),

Gene: Limpid\_236 Start: 117153, Stop: 117515, Start Num: 22

Candidate Starts for Limpid\_236:

(Start: 22 @117153 has 4 MA's), (30, 117207), (31, 117213), (42, 117291), (63, 117468),

Gene: Linus\_35 Start: 29518, Stop: 29207, Start Num: 26

Candidate Starts for Linus\_35:

(Start: 26 @29518 has 16 MA's), (29, 29509), (35, 29452), (37, 29425), (48, 29356), (49, 29353), (51, 29341), (64, 29218),

Gene: Loser\_90 Start: 49859, Stop: 49542, Start Num: 27

Candidate Starts for Loser\_90:

(Start: 25 @49883 has 1 MA's), (Start: 27 @49859 has 2 MA's), (39, 49766), (40, 49751), (58, 49649),



Gene: MiculUcigas\_90 Start: 49442, Stop: 49092, Start Num: 23  
Candidate Starts for MiculUcigas\_90:  
(Start: 23 @49442 has 11 MA's), (Start: 27 @49397 has 2 MA's), (30, 49379), (41, 49289), (57, 49202),  
(61, 49169), (65, 49103),

Gene: Miko\_84 Start: 48454, Stop: 48119, Start Num: 19  
Candidate Starts for Miko\_84:  
(17, 48484), (Start: 19 @48454 has 2 MA's), (Start: 27 @48403 has 2 MA's), (30, 48385),

Gene: Mordred\_35 Start: 29517, Stop: 29206, Start Num: 26  
Candidate Starts for Mordred\_35:  
(Start: 26 @29517 has 16 MA's), (29, 29508), (35, 29451), (37, 29424), (48, 29355), (49, 29352), (51,  
29340), (64, 29217),

Gene: MoyaNatalis\_35 Start: 29521, Stop: 29210, Start Num: 26  
Candidate Starts for MoyaNatalis\_35:  
(Start: 26 @29521 has 16 MA's), (29, 29512), (35, 29455), (37, 29428), (48, 29359), (49, 29356), (51,  
29344), (64, 29221),

Gene: Muntaha\_222 Start: 108668, Stop: 109000, Start Num: 21  
Candidate Starts for Muntaha\_222:  
(Start: 21 @108668 has 1 MA's), (Start: 27 @108716 has 2 MA's), (38, 108788),

Gene: Phoebus\_237 Start: 113352, Stop: 113032, Start Num: 23  
Candidate Starts for Phoebus\_237:  
(Start: 23 @113352 has 11 MA's), (Start: 27 @113307 has 2 MA's), (30, 113289), (32, 113280), (47,  
113190), (55, 113133), (56, 113130), (60, 113109), (62, 113073),

Gene: PrincessTrina\_35 Start: 29521, Stop: 29210, Start Num: 26  
Candidate Starts for PrincessTrina\_35:  
(Start: 26 @29521 has 16 MA's), (29, 29512), (35, 29455), (37, 29428), (48, 29359), (49, 29356), (51,  
29344), (64, 29221),

Gene: Rachaly\_85 Start: 48597, Stop: 48262, Start Num: 19  
Candidate Starts for Rachaly\_85:  
(17, 48627), (Start: 19 @48597 has 2 MA's), (Start: 27 @48546 has 2 MA's), (30, 48528),

Gene: RosiePosie\_35 Start: 29520, Stop: 29209, Start Num: 26  
Candidate Starts for RosiePosie\_35:  
(Start: 26 @29520 has 16 MA's), (29, 29511), (35, 29454), (37, 29427), (48, 29358), (49, 29355), (51,  
29343), (64, 29220),

Gene: Scavito\_35 Start: 29518, Stop: 29207, Start Num: 26  
Candidate Starts for Scavito\_35:  
(Start: 26 @29518 has 16 MA's), (29, 29509), (35, 29452), (37, 29425), (48, 29356), (49, 29353), (51,  
29341), (64, 29218),

Gene: Schatzie\_231 Start: 110377, Stop: 110057, Start Num: 23  
Candidate Starts for Schatzie\_231:  
(Start: 23 @110377 has 11 MA's), (Start: 27 @110332 has 2 MA's), (30, 110314), (32, 110305), (47,  
110215), (55, 110158), (56, 110155), (60, 110134), (62, 110098),

Gene: Sknot\_90 Start: 49536, Stop: 49186, Start Num: 23

Candidate Starts for Sknot\_90:

(Start: 23 @49536 has 11 MA's), (Start: 27 @49491 has 2 MA's), (30, 49473), (41, 49383), (57, 49296), (61, 49263), (65, 49197),

Gene: SlimJimmy\_153 Start: 78262, Stop: 77990, Start Num: 34

Candidate Starts for SlimJimmy\_153:

(7, 78457), (15, 78412), (Start: 34 @78262 has 4 MA's), (36, 78241), (40, 78199), (43, 78190), (44, 78187), (53, 78133), (58, 78097), (59, 78085), (61, 78067),

Gene: Spooks\_74 Start: 50779, Stop: 50438, Start Num: 18

Candidate Starts for Spooks\_74:

(18, 50779), (Start: 27 @50728 has 2 MA's), (42, 50623), (45, 50614), (46, 50605), (49, 50587), (54, 50560),

Gene: Tophat\_35 Start: 29519, Stop: 29208, Start Num: 26

Candidate Starts for Tophat\_35:

(Start: 26 @29519 has 16 MA's), (29, 29510), (35, 29453), (37, 29426), (48, 29357), (49, 29354), (51, 29342), (64, 29219),

Gene: TyDawg\_149 Start: 77708, Stop: 77436, Start Num: 34

Candidate Starts for TyDawg\_149:

(7, 77903), (15, 77858), (Start: 34 @77708 has 4 MA's), (36, 77687), (40, 77645), (43, 77636), (44, 77633), (53, 77579), (58, 77543), (59, 77531), (61, 77513),

Gene: Updawg\_91 Start: 49724, Stop: 49374, Start Num: 23

Candidate Starts for Updawg\_91:

(Start: 23 @49724 has 11 MA's), (Start: 27 @49679 has 2 MA's), (30, 49661), (41, 49571), (57, 49484), (61, 49451), (65, 49385),

Gene: Wakanda\_219 Start: 108031, Stop: 108363, Start Num: 20

Candidate Starts for Wakanda\_219:

(Start: 20 @108031 has 1 MA's), (Start: 27 @108079 has 2 MA's), (38, 108151),

Gene: Wanda\_239 Start: 108976, Stop: 108665, Start Num: 24

Candidate Starts for Wanda\_239:

(1, 109159), (2, 109132), (3, 109111), (5, 109090), (12, 109045), (13, 109042), (16, 109021), (Start: 24 @108976 has 7 MA's), (Start: 27 @108937 has 2 MA's), (30, 108919), (32, 108910), (39, 108865), (47, 108823), (50, 108802), (55, 108766), (60, 108742), (62, 108706),

Gene: WideWale\_91 Start: 49724, Stop: 49374, Start Num: 23

Candidate Starts for WideWale\_91:

(Start: 23 @49724 has 11 MA's), (Start: 27 @49679 has 2 MA's), (30, 49661), (41, 49571), (57, 49484), (61, 49451), (65, 49385),

Gene: Yeet\_233 Start: 110472, Stop: 110161, Start Num: 24

Candidate Starts for Yeet\_233:

(2, 110628), (3, 110607), (5, 110586), (12, 110541), (13, 110538), (16, 110517), (Start: 24 @110472 has 7 MA's), (Start: 27 @110433 has 2 MA's), (30, 110415), (39, 110361), (47, 110319), (55, 110262), (56, 110259), (60, 110238), (62, 110202),

Gene: Zelink\_232 Start: 110059, Stop: 109748, Start Num: 24

Candidate Starts for Zelink\_232:

(2, 110215), (12, 110128), (13, 110125), (16, 110104), (Start: 24 @110059 has 7 MA's), (Start: 27 @110020 has 2 MA's), (30, 110002), (32, 109993), (39, 109948), (47, 109906), (50, 109885), (55, 109849), (60, 109825), (62, 109789),