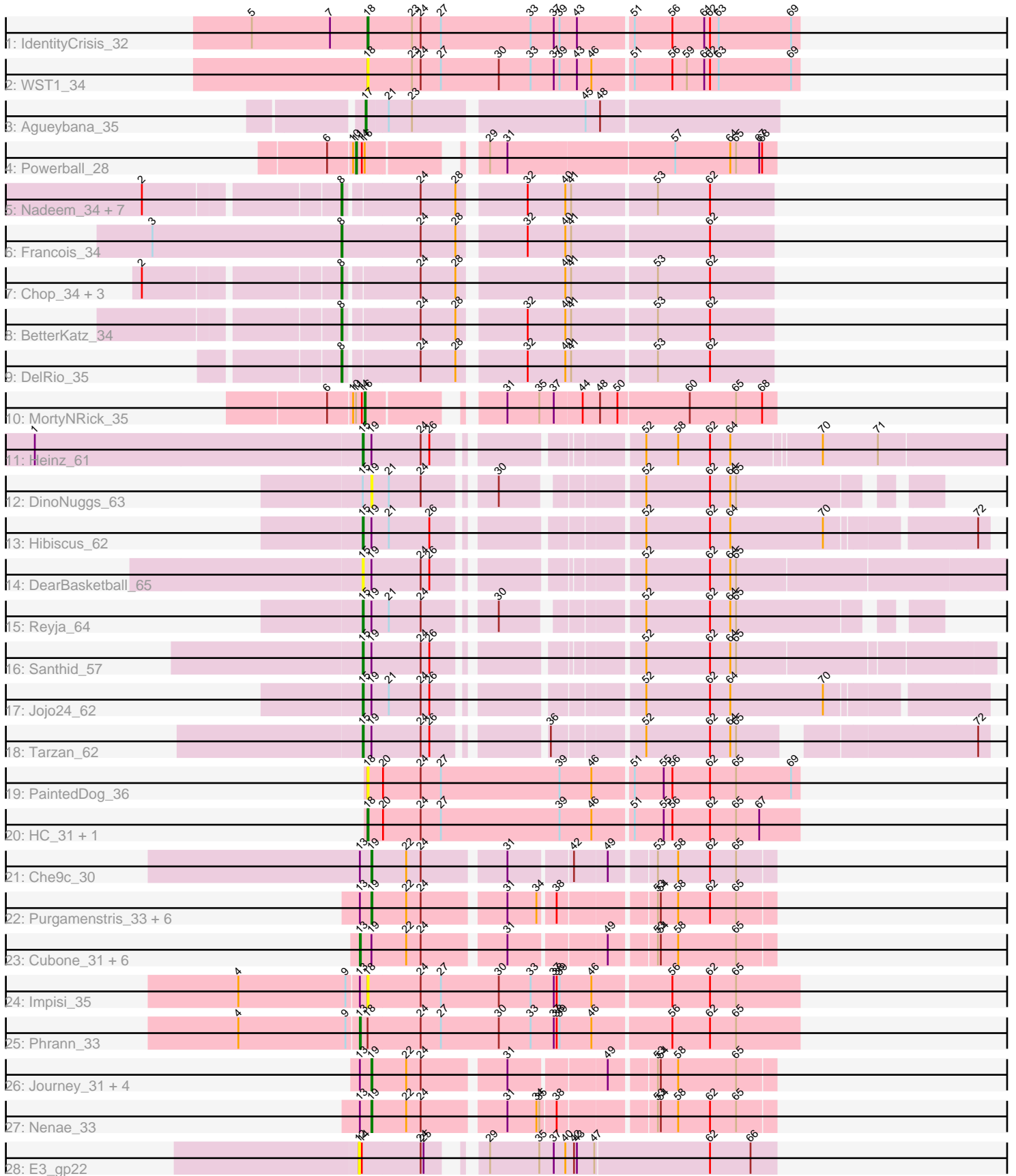


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 308693 Report

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

Pham number 308693 has 55 members, 8 are drafts.

Phages represented in each track:

- Track 1 : IdentityCrisis\_32
- Track 2 : WST1\_34
- Track 3 : Agueybana\_35
- Track 4 : Powerball\_28
- Track 5 : Nadeem\_34, Bock\_34, Brylie\_34, Parada\_34, Pimento\_34, Mulch\_34, NancyRae\_34, WheatThin\_34
- Track 6 : Francois\_34
- Track 7 : Chop\_34, Hamood\_34, Ayotoya\_34, GrandSlam\_34
- Track 8 : BetterKatz\_34
- Track 9 : DelRio\_35
- Track 10 : MortyNRick\_35
- Track 11 : Heinz\_61
- Track 12 : DinoNuggs\_63
- Track 13 : Hibiscus\_62
- Track 14 : DearBasketball\_65
- Track 15 : Reyja\_64
- Track 16 : Santhid\_57
- Track 17 : Jojo24\_62
- Track 18 : Tarzan\_62
- Track 19 : PaintedDog\_36
- Track 20 : HC\_31, Babsiella\_30
- Track 21 : Che9c\_30
- Track 22 : Purgamenstris\_33, Hanako\_33, BabeRuth\_34, Spinach\_33, ShrimpFriedEgg\_33, PhancyPhin\_33, Redi\_33
- Track 23 : Cubone\_31, Bosection6\_31, Aggie\_31, Xeno\_30, Tortoise12\_31, Philonius\_31, SkinnyPete\_28
- Track 24 : Impisi\_35
- Track 25 : Phrann\_33
- Track 26 : Journey\_31, Silvy\_31, Charlie\_31, EGUnicorn\_31, Scitech\_28
- Track 27 : Nенаe\_33
- Track 28 : E3\_gp22

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

The start number called the most often in the published annotations is 8, it was called in 15 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ayotoya\_34, BetterKatz\_34, Bock\_34, Brylie\_34, Chop\_34, DelRio\_35, Francois\_34, GrandSlam\_34, Hamood\_34, Mulch\_34, Nadeem\_34, NancyRae\_34, Parada\_34, Pimento\_34, WheatThin\_34,

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

- 

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

- Aggie\_31, Agueybana\_35, BabeRuth\_34, Babsiella\_30, Bosection6\_31, Charlie\_31, Che9c\_30, Cubone\_31, DearBasketball\_65, DinoNuggs\_63, E3\_gp22, EGunicorn\_31, HC\_31, Hanako\_33, Heinz\_61, Hibiscus\_62, IdentityCrisis\_32, Impisi\_35, Jojo24\_62, Journey\_31, MortyNRick\_35, Nенаe\_33, PaintedDog\_36, PhancyPhin\_33, Philonius\_31, Phrann\_33, Powerball\_28, Purgamenstris\_33, Redi\_33, Reyja\_64, Santhid\_57, Scitech\_28, ShrimpFriedEgg\_33, Silvy\_31, SkinnyPete\_28, Spinach\_33, Tarzan\_62, Tortoise12\_31, WST1\_34, Xeno\_30,

### Summary by start number:

Start 8:

- Found in 15 of 55 ( 27.3% ) of genes in pham
- Manual Annotations of this start: 15 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ayotoya\_34 (DI), BetterKatz\_34 (DI), Bock\_34 (DI), Brylie\_34 (DI), Chop\_34 (DI), DelRio\_35 (DI), Francois\_34 (DI), GrandSlam\_34 (DI), Hamood\_34 (DI), Mulch\_34 (DI), Nadeem\_34 (DI), NancyRae\_34 (DI), Parada\_34 (DI), Pimento\_34 (DI), WheatThin\_34 (DI),

Start 11:

- Found in 2 of 55 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Powerball\_28 (CZ4),

Start 12:

- Found in 1 of 55 ( 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: E3\_gp22 (singleton),

Start 13:

- Found in 23 of 55 ( 41.8% ) of genes in pham
- Manual Annotations of this start: 7 of 47
- Called 34.8% of time when present
- Phage (with cluster) where this start called: Aggie\_31 (N), Bosection6\_31 (N), Cubone\_31 (N), Philonius\_31 (N), Phrann\_33 (N), SkinnyPete\_28 (N), Tortoise12\_31 (N), Xeno\_30 (N),

Start 15:

- Found in 8 of 55 ( 14.5% ) of genes in pham

- Manual Annotations of this start: 6 of 47
- Called 87.5% of time when present
- Phage (with cluster) where this start called: DearBasketball\_65 (DY), Heinz\_61 (DY), Hibiscus\_62 (DY), Jojo24\_62 (DY), Reyja\_64 (DY), Santhid\_57 (DY), Tarzan\_62 (DY),

#### Start 16:

- Found in 2 of 55 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MortyNRick\_35 (DN),

#### Start 17:

- Found in 1 of 55 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agueybana\_35 (CZ1),

#### Start 18:

- Found in 7 of 55 ( 12.7% ) of genes in pham
- Manual Annotations of this start: 3 of 47
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Babsiella\_30 (I1), HC\_31 (I1), IdentityCrisis\_32 (AJ), Impisi\_35 (N), PaintedDog\_36 (I1), WST1\_34 (AJ),

#### Start 19:

- Found in 29 of 55 ( 52.7% ) of genes in pham
- Manual Annotations of this start: 13 of 47
- Called 51.7% of time when present
- Phage (with cluster) where this start called: BabeRuth\_34 (N), Charlie\_31 (N), Che9c\_30 (I2), DinoNuggs\_63 (DY), EGUnicorn\_31 (N), Hanako\_33 (N), Journey\_31 (N), Nенаe\_33 (N), PhancyPhin\_33 (N), Purgamenstris\_33 (N), Redi\_33 (N), Scitech\_28 (N), ShrimpFriedEgg\_33 (N), Silvy\_31 (N), Spinach\_33 (N),

### Summary by clusters:

There are 10 clusters represented in this pham: DN, singleton, AJ, CZ1, DI, I1, I2, CZ4, N, DY,

Info for manual annotations of cluster AJ:

- Start number 18 was manually annotated 1 time for cluster AJ.

Info for manual annotations of cluster CZ1:

- Start number 17 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ4:

- Start number 11 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster DI:

- Start number 8 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DN:

- Start number 16 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DY:

- Start number 15 was manually annotated 6 times for cluster DY.

Info for manual annotations of cluster I1:

- Start number 18 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 19 was manually annotated 1 time for cluster I2.

Info for manual annotations of cluster N:

- Start number 13 was manually annotated 7 times for cluster N.
- Start number 19 was manually annotated 12 times for cluster N.

### ***Gene Information:***

Gene: Aggie\_31 Start: 25578, Stop: 25183, Start Num: 13

Candidate Starts for Aggie\_31:

(Start: 13 @25578 has 7 MA's), (Start: 19 @25566 has 13 MA's), (22, 25530), (24, 25515), (31, 25437), (49, 25344), (53, 25302), (54, 25299), (58, 25281), (65, 25221),

Gene: Agueybana\_35 Start: 29277, Stop: 28873, Start Num: 17

Candidate Starts for Agueybana\_35:

(Start: 17 @29277 has 1 MA's), (21, 29256), (23, 29232), (45, 29067), (48, 29052),

Gene: Ayotoya\_34 Start: 28865, Stop: 28449, Start Num: 8

Candidate Starts for Ayotoya\_34:

(2, 29051), (Start: 8 @28865 has 15 MA's), (24, 28793), (28, 28757), (40, 28658), (41, 28652), (53, 28568), (62, 28514),

Gene: BabeRuth\_34 Start: 27217, Stop: 26834, Start Num: 19

Candidate Starts for BabeRuth\_34:

(Start: 13 @27229 has 7 MA's), (Start: 19 @27217 has 13 MA's), (22, 27181), (24, 27166), (31, 27088), (34, 27058), (38, 27043), (53, 26953), (54, 26950), (58, 26932), (62, 26899), (65, 26872),

Gene: Babsiella\_30 Start: 26423, Stop: 25983, Start Num: 18

Candidate Starts for Babsiella\_30:

(Start: 18 @26423 has 3 MA's), (20, 26408), (24, 26369), (27, 26348), (39, 26225), (46, 26192), (51, 26153), (55, 26123), (56, 26114), (62, 26075), (65, 26048), (67, 26024),

Gene: BetterKatz\_34 Start: 28336, Stop: 27920, Start Num: 8

Candidate Starts for BetterKatz\_34:

(Start: 8 @28336 has 15 MA's), (24, 28264), (28, 28228), (32, 28168), (40, 28129), (41, 28123), (53, 28039), (62, 27985),

Gene: Bock\_34 Start: 28086, Stop: 27670, Start Num: 8

Candidate Starts for Bock\_34:

(2, 28272), (Start: 8 @28086 has 15 MA's), (24, 28014), (28, 27978), (32, 27918), (40, 27879), (41, 27873), (53, 27789), (62, 27735),

Gene: Bosection6\_31 Start: 25577, Stop: 25182, Start Num: 13

Candidate Starts for Bosection6\_31:

(Start: 13 @25577 has 7 MA's), (Start: 19 @25565 has 13 MA's), (22, 25529), (24, 25514), (31, 25436), (49, 25343), (53, 25301), (54, 25298), (58, 25280), (65, 25220),

Gene: Brylie\_34 Start: 28074, Stop: 27658, Start Num: 8

Candidate Starts for Brylie\_34:

(2, 28260), (Start: 8 @28074 has 15 MA's), (24, 28002), (28, 27966), (32, 27906), (40, 27867), (41, 27861), (53, 27777), (62, 27723),

Gene: Charlie\_31 Start: 25565, Stop: 25182, Start Num: 19

Candidate Starts for Charlie\_31:

(Start: 13 @25577 has 7 MA's), (Start: 19 @25565 has 13 MA's), (22, 25529), (24, 25514), (31, 25436), (49, 25343), (53, 25301), (54, 25298), (58, 25280), (65, 25220),

Gene: Che9c\_30 Start: 27077, Stop: 26694, Start Num: 19

Candidate Starts for Che9c\_30:

(Start: 13 @27089 has 7 MA's), (Start: 19 @27077 has 13 MA's), (22, 27041), (24, 27026), (31, 26948), (42, 26888), (49, 26855), (53, 26813), (58, 26792), (62, 26759), (65, 26732),

Gene: Chop\_34 Start: 28613, Stop: 28197, Start Num: 8

Candidate Starts for Chop\_34:

(2, 28799), (Start: 8 @28613 has 15 MA's), (24, 28541), (28, 28505), (40, 28406), (41, 28400), (53, 28316), (62, 28262),

Gene: Cubone\_31 Start: 25599, Stop: 25204, Start Num: 13

Candidate Starts for Cubone\_31:

(Start: 13 @25599 has 7 MA's), (Start: 19 @25587 has 13 MA's), (22, 25551), (24, 25536), (31, 25458), (49, 25365), (53, 25323), (54, 25320), (58, 25302), (65, 25242),

Gene: DearBasketball\_65 Start: 40729, Stop: 41346, Start Num: 15

Candidate Starts for DearBasketball\_65:

(Start: 15 @40729 has 6 MA's), (Start: 19 @40738 has 13 MA's), (24, 40789), (26, 40798), (52, 40975), (62, 41041), (64, 41062), (65, 41068),

Gene: DelRio\_35 Start: 29263, Stop: 28847, Start Num: 8

Candidate Starts for DelRio\_35:

(Start: 8 @29263 has 15 MA's), (24, 29191), (28, 29155), (32, 29095), (40, 29056), (41, 29050), (53, 28966), (62, 28912),

Gene: DinoNuggs\_63 Start: 40458, Stop: 40964, Start Num: 19

Candidate Starts for DinoNuggs\_63:

(Start: 15 @40449 has 6 MA's), (Start: 19 @40458 has 13 MA's), (21, 40476), (24, 40509), (30, 40569), (52, 40692), (62, 40758), (64, 40779), (65, 40785),

Gene: E3\_gp22 Start: 9420, Stop: 9812, Start Num: 12

Candidate Starts for E3\_gp22:

(12, 9420), (14, 9423), (24, 9483), (25, 9486), (29, 9519), (35, 9570), (37, 9585), (40, 9597), (42, 9606), (43, 9609), (47, 9627), (62, 9744), (66, 9786),

Gene: EGUunicorn\_31 Start: 25565, Stop: 25182, Start Num: 19

Candidate Starts for EGUunicorn\_31:

(Start: 13 @25577 has 7 MA's), (Start: 19 @25565 has 13 MA's), (22, 25529), (24, 25514), (31, 25436), (49, 25343), (53, 25301), (54, 25298), (58, 25280), (65, 25220),

Gene: Francois\_34 Start: 28109, Stop: 27684, Start Num: 8

Candidate Starts for Francois\_34:

(3, 28304), (Start: 8 @28109 has 15 MA's), (24, 28028), (28, 27992), (32, 27932), (40, 27893), (41, 27887), (62, 27749),

Gene: GrandSlam\_34 Start: 28613, Stop: 28197, Start Num: 8

Candidate Starts for GrandSlam\_34:

(2, 28799), (Start: 8 @28613 has 15 MA's), (24, 28541), (28, 28505), (40, 28406), (41, 28400), (53, 28316), (62, 28262),

Gene: HC\_31 Start: 26479, Stop: 26039, Start Num: 18

Candidate Starts for HC\_31:

(Start: 18 @26479 has 3 MA's), (20, 26464), (24, 26425), (27, 26404), (39, 26281), (46, 26248), (51, 26209), (55, 26179), (56, 26170), (62, 26131), (65, 26104), (67, 26080),

Gene: Hamood\_34 Start: 28613, Stop: 28197, Start Num: 8

Candidate Starts for Hamood\_34:

(2, 28799), (Start: 8 @28613 has 15 MA's), (24, 28541), (28, 28505), (40, 28406), (41, 28400), (53, 28316), (62, 28262),

Gene: Hanako\_33 Start: 27216, Stop: 26833, Start Num: 19

Candidate Starts for Hanako\_33:

(Start: 13 @27228 has 7 MA's), (Start: 19 @27216 has 13 MA's), (22, 27180), (24, 27165), (31, 27087), (34, 27057), (38, 27042), (53, 26952), (54, 26949), (58, 26931), (62, 26898), (65, 26871),

Gene: Heinz\_61 Start: 38941, Stop: 39591, Start Num: 15

Candidate Starts for Heinz\_61:

(1, 38605), (Start: 15 @38941 has 6 MA's), (Start: 19 @38950 has 13 MA's), (24, 39001), (26, 39010), (52, 39187), (58, 39220), (62, 39253), (64, 39274), (70, 39361), (71, 39418),

Gene: Hibiscus\_62 Start: 38817, Stop: 39401, Start Num: 15

Candidate Starts for Hibiscus\_62:

(Start: 15 @38817 has 6 MA's), (Start: 19 @38826 has 13 MA's), (21, 38844), (26, 38886), (52, 39066), (62, 39132), (64, 39153), (70, 39249), (72, 39390),

Gene: IdentityCrisis\_32 Start: 25735, Stop: 25295, Start Num: 18

Candidate Starts for IdentityCrisis\_32:

(5, 25855), (7, 25774), (Start: 18 @25735 has 3 MA's), (23, 25690), (24, 25681), (27, 25660), (33, 25567), (37, 25543), (39, 25537), (43, 25519), (51, 25465), (56, 25426), (61, 25393), (62, 25387), (63, 25378), (69, 25303),

Gene: Impisi\_35 Start: 27571, Stop: 27131, Start Num: 18

Candidate Starts for Impisi\_35:

(4, 27700), (9, 27589), (Start: 13 @27577 has 7 MA's), (Start: 18 @27571 has 3 MA's), (24, 27517), (27, 27496), (30, 27436), (33, 27403), (37, 27379), (38, 27376), (39, 27373), (46, 27340), (56, 27262), (62, 27223), (65, 27196),

Gene: Jojo24\_62 Start: 39500, Stop: 40084, Start Num: 15

Candidate Starts for Jojo24\_62:

(Start: 15 @39500 has 6 MA's), (Start: 19 @39509 has 13 MA's), (21, 39527), (24, 39560), (26, 39569), (52, 39749), (62, 39815), (64, 39836), (70, 39932),

Gene: Journey\_31 Start: 25565, Stop: 25182, Start Num: 19

Candidate Starts for Journey\_31:

(Start: 13 @25577 has 7 MA's), (Start: 19 @25565 has 13 MA's), (22, 25529), (24, 25514), (31, 25436), (49, 25343), (53, 25301), (54, 25298), (58, 25280), (65, 25220),

Gene: MortyNRick\_35 Start: 28914, Stop: 28537, Start Num: 16

Candidate Starts for MortyNRick\_35:

(6, 28950), (10, 28926), (Start: 11 @28923 has 1 MA's), (14, 28917), (Start: 16 @28914 has 1 MA's), (31, 28809), (35, 28776), (37, 28761), (44, 28734), (48, 28716), (50, 28698), (60, 28626), (65, 28578), (68, 28551),

Gene: Mulch\_34 Start: 28074, Stop: 27658, Start Num: 8

Candidate Starts for Mulch\_34:

(2, 28260), (Start: 8 @28074 has 15 MA's), (24, 28002), (28, 27966), (32, 27906), (40, 27867), (41, 27861), (53, 27777), (62, 27723),

Gene: Nadeem\_34 Start: 28074, Stop: 27658, Start Num: 8

Candidate Starts for Nadeem\_34:

(2, 28260), (Start: 8 @28074 has 15 MA's), (24, 28002), (28, 27966), (32, 27906), (40, 27867), (41, 27861), (53, 27777), (62, 27723),

Gene: NancyRae\_34 Start: 28084, Stop: 27668, Start Num: 8

Candidate Starts for NancyRae\_34:

(2, 28270), (Start: 8 @28084 has 15 MA's), (24, 28012), (28, 27976), (32, 27916), (40, 27877), (41, 27871), (53, 27787), (62, 27733),

Gene: Nенаe\_33 Start: 27219, Stop: 26833, Start Num: 19

Candidate Starts for Nенаe\_33:

(Start: 13 @27231 has 7 MA's), (Start: 19 @27219 has 13 MA's), (22, 27183), (24, 27168), (31, 27090), (34, 27060), (35, 27057), (38, 27042), (53, 26952), (54, 26949), (58, 26931), (62, 26898), (65, 26871),

Gene: PaintedDog\_36 Start: 28967, Stop: 28527, Start Num: 18

Candidate Starts for PaintedDog\_36:

(Start: 18 @28967 has 3 MA's), (20, 28952), (24, 28913), (27, 28892), (39, 28769), (46, 28736), (51, 28697), (55, 28667), (56, 28658), (62, 28619), (65, 28592), (69, 28535),

Gene: Parada\_34 Start: 28074, Stop: 27658, Start Num: 8

Candidate Starts for Parada\_34:

(2, 28260), (Start: 8 @28074 has 15 MA's), (24, 28002), (28, 27966), (32, 27906), (40, 27867), (41, 27861), (53, 27777), (62, 27723),

Gene: PhancyPhin\_33 Start: 27213, Stop: 26830, Start Num: 19

Candidate Starts for PhancyPhin\_33:

(Start: 13 @27225 has 7 MA's), (Start: 19 @27213 has 13 MA's), (22, 27177), (24, 27162), (31, 27084), (34, 27054), (38, 27039), (53, 26949), (54, 26946), (58, 26928), (62, 26895), (65, 26868),

Gene: Philonius\_31 Start: 25568, Stop: 25173, Start Num: 13

Candidate Starts for Philonius\_31:

(Start: 13 @25568 has 7 MA's), (Start: 19 @25556 has 13 MA's), (22, 25520), (24, 25505), (31, 25427), (49, 25334), (53, 25292), (54, 25289), (58, 25271), (65, 25211),

Gene: Phrann\_33 Start: 27801, Stop: 27355, Start Num: 13

Candidate Starts for Phrann\_33:

(4, 27924), (9, 27813), (Start: 13 @27801 has 7 MA's), (Start: 18 @27795 has 3 MA's), (24, 27741), (27, 27720), (30, 27660), (33, 27627), (37, 27603), (38, 27600), (39, 27597), (46, 27564), (56, 27486), (62, 27447), (65, 27420),

Gene: Pimento\_34 Start: 27733, Stop: 27317, Start Num: 8

Candidate Starts for Pimento\_34:

(2, 27919), (Start: 8 @27733 has 15 MA's), (24, 27661), (28, 27625), (32, 27565), (40, 27526), (41, 27520), (53, 27436), (62, 27382),

Gene: Powerball\_28 Start: 25728, Stop: 25342, Start Num: 11

Candidate Starts for Powerball\_28:

(6, 25755), (10, 25731), (Start: 11 @25728 has 1 MA's), (14, 25722), (Start: 16 @25719 has 1 MA's), (29, 25632), (31, 25614), (57, 25446), (64, 25389), (65, 25383), (67, 25359), (68, 25356),

Gene: Purgamenstris\_33 Start: 27216, Stop: 26833, Start Num: 19

Candidate Starts for Purgamenstris\_33:

(Start: 13 @27228 has 7 MA's), (Start: 19 @27216 has 13 MA's), (22, 27180), (24, 27165), (31, 27087), (34, 27057), (38, 27042), (53, 26952), (54, 26949), (58, 26931), (62, 26898), (65, 26871),

Gene: Redi\_33 Start: 27216, Stop: 26833, Start Num: 19

Candidate Starts for Redi\_33:

(Start: 13 @27228 has 7 MA's), (Start: 19 @27216 has 13 MA's), (22, 27180), (24, 27165), (31, 27087), (34, 27057), (38, 27042), (53, 26952), (54, 26949), (58, 26931), (62, 26898), (65, 26871),

Gene: Reyja\_64 Start: 40449, Stop: 40964, Start Num: 15

Candidate Starts for Reyja\_64:

(Start: 15 @40449 has 6 MA's), (Start: 19 @40458 has 13 MA's), (21, 40476), (24, 40509), (30, 40569), (52, 40692), (62, 40758), (64, 40779), (65, 40785),

Gene: Santhid\_57 Start: 37637, Stop: 38230, Start Num: 15

Candidate Starts for Santhid\_57:

(Start: 15 @37637 has 6 MA's), (Start: 19 @37646 has 13 MA's), (24, 37697), (26, 37706), (52, 37883), (62, 37949), (64, 37970), (65, 37976),

Gene: Scitech\_28 Start: 24742, Stop: 24359, Start Num: 19

Candidate Starts for Scitech\_28:

(Start: 13 @24754 has 7 MA's), (Start: 19 @24742 has 13 MA's), (22, 24706), (24, 24691), (31, 24613), (49, 24520), (53, 24478), (54, 24475), (58, 24457), (65, 24397),

Gene: ShrimpFriedEgg\_33 Start: 27216, Stop: 26833, Start Num: 19

Candidate Starts for ShrimpFriedEgg\_33:

(Start: 13 @27228 has 7 MA's), (Start: 19 @27216 has 13 MA's), (22, 27180), (24, 27165), (31, 27087), (34, 27057), (38, 27042), (53, 26952), (54, 26949), (58, 26931), (62, 26898), (65, 26871),

Gene: Silvy\_31 Start: 25566, Stop: 25183, Start Num: 19

Candidate Starts for Silvy\_31:

(Start: 13 @25578 has 7 MA's), (Start: 19 @25566 has 13 MA's), (22, 25530), (24, 25515), (31, 25437), (49, 25344), (53, 25302), (54, 25299), (58, 25281), (65, 25221),

Gene: SkinnyPete\_28 Start: 24617, Stop: 24222, Start Num: 13

Candidate Starts for SkinnyPete\_28:

(Start: 13 @24617 has 7 MA's), (Start: 19 @24605 has 13 MA's), (22, 24569), (24, 24554), (31, 24476), (49, 24383), (53, 24341), (54, 24338), (58, 24320), (65, 24260),

Gene: Spinach\_33 Start: 27216, Stop: 26833, Start Num: 19

Candidate Starts for Spinach\_33:

(Start: 13 @27228 has 7 MA's), (Start: 19 @27216 has 13 MA's), (22, 27180), (24, 27165), (31, 27087), (34, 27057), (38, 27042), (53, 26952), (54, 26949), (58, 26931), (62, 26898), (65, 26871),

Gene: Tarzan\_62 Start: 39111, Stop: 39680, Start Num: 15

Candidate Starts for Tarzan\_62:

(Start: 15 @39111 has 6 MA's), (Start: 19 @39120 has 13 MA's), (24, 39171), (26, 39180), (36, 39276), (52, 39360), (62, 39426), (64, 39447), (65, 39453), (72, 39669),

Gene: Tortoise12\_31 Start: 25589, Stop: 25194, Start Num: 13

Candidate Starts for Tortoise12\_31:

(Start: 13 @25589 has 7 MA's), (Start: 19 @25577 has 13 MA's), (22, 25541), (24, 25526), (31, 25448), (49, 25355), (53, 25313), (54, 25310), (58, 25292), (65, 25232),

Gene: WST1\_34 Start: 25595, Stop: 25155, Start Num: 18

Candidate Starts for WST1\_34:

(Start: 18 @25595 has 3 MA's), (23, 25550), (24, 25541), (27, 25520), (30, 25460), (33, 25427), (37, 25403), (39, 25397), (43, 25379), (46, 25364), (51, 25325), (56, 25286), (59, 25271), (61, 25253), (62, 25247), (63, 25238), (69, 25163),

Gene: WheatThin\_34 Start: 28074, Stop: 27658, Start Num: 8

Candidate Starts for WheatThin\_34:

(2, 28260), (Start: 8 @28074 has 15 MA's), (24, 28002), (28, 27966), (32, 27906), (40, 27867), (41, 27861), (53, 27777), (62, 27723),

Gene: Xeno\_30 Start: 25343, Stop: 24948, Start Num: 13

Candidate Starts for Xeno\_30:

(Start: 13 @25343 has 7 MA's), (Start: 19 @25331 has 13 MA's), (22, 25295), (24, 25280), (31, 25202), (49, 25109), (53, 25067), (54, 25064), (58, 25046), (65, 24986),