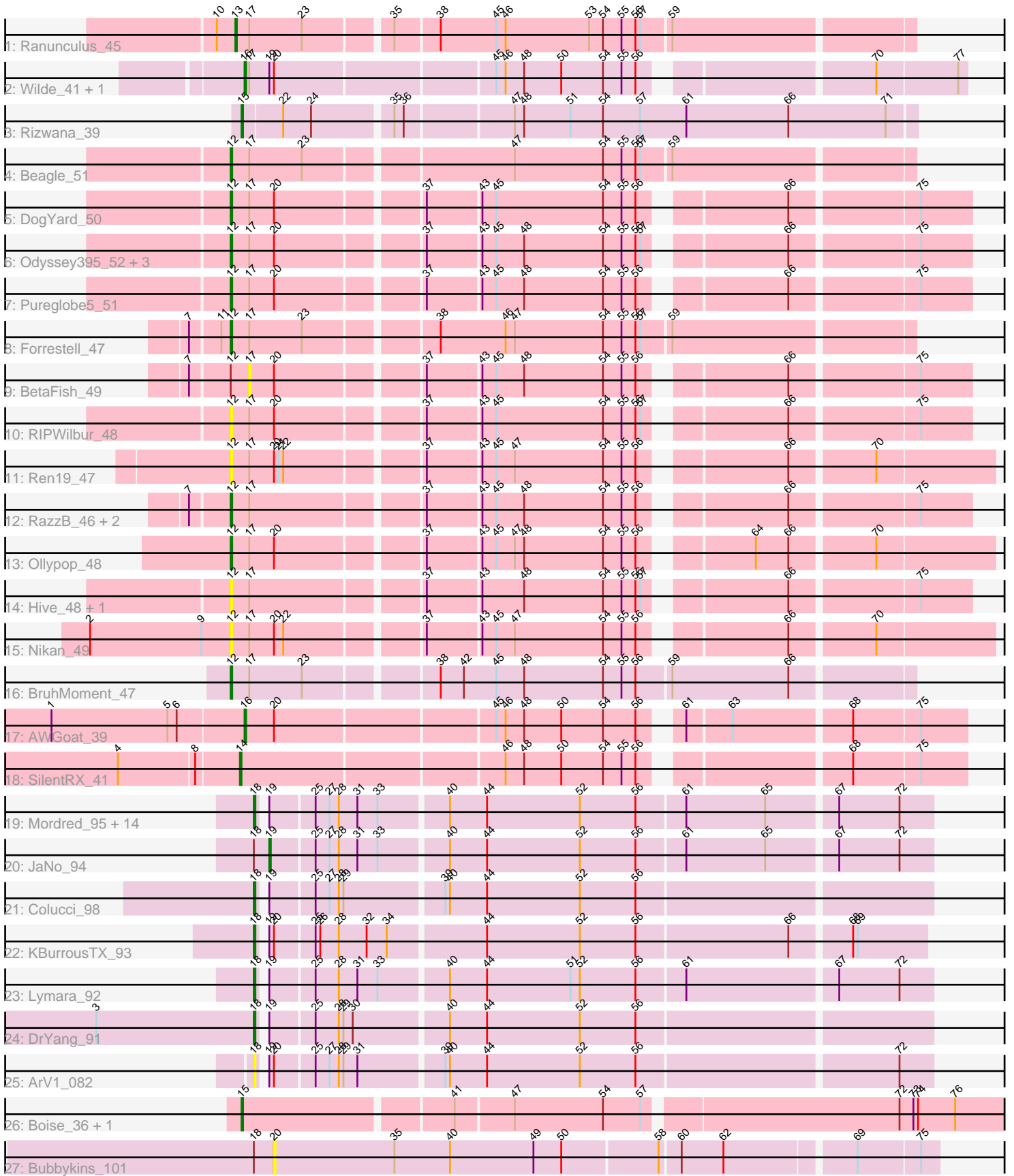


# Pham 305089



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 305089 Report

This analysis was run 06/08/26 on database version 649.

Pham number 305089 has 49 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus\_45
- Track 2 : Wilde\_41, Tank\_41
- Track 3 : Rizwana\_39
- Track 4 : Beagle\_51
- Track 5 : DogYard\_50
- Track 6 : Odyssey395\_52, PhuzzTulsa\_48, Pointis\_49, Kubulix\_51
- Track 7 : Pureglobe5\_51
- Track 8 : Forrestell\_47
- Track 9 : BetaFish\_49
- Track 10 : RIPWilbur\_48
- Track 11 : Ren19\_47
- Track 12 : RazzB\_46, NyleyClemson\_45, MellowYellow\_47
- Track 13 : Ollypop\_48
- Track 14 : Hive\_48, Popstraw\_47
- Track 15 : Nikan\_49
- Track 16 : BruhMoment\_47
- Track 17 : AWGoat\_39
- Track 18 : SilentRX\_41
- Track 19 : Mordred\_95, HumptyDumpty\_95, PrincessTrina\_96, JayCookie\_95, Chubster\_95, EdgarPoe\_94, RosiePosie\_95, Conboy\_93, Linus\_95, Tophat\_96, Chocolat\_95, Kabreeze\_95, Chipper1996\_960, MoyaNatalis\_94, Scavito\_96
- Track 20 : JaNo\_94
- Track 21 : Colucci\_98
- Track 22 : KBurrousTX\_93
- Track 23 : Lymara\_92
- Track 24 : DrYang\_91
- Track 25 : ArV1\_082
- Track 26 : Boise\_36, RomansRevenge\_37
- Track 27 : Bubbykins\_101

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

The start number called the most often in the published annotations is 18, it was called in 18 of the 38 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ArV1\_082, Chipper1996\_960, Chocolat\_95, Chubster\_95, Colucci\_98, Conboy\_93, DrYang\_91, EdgarPoe\_94, HumptyDumpty\_95, JayCookie\_95, KBurroustX\_93, Kabreeze\_95, Linus\_95, Lymara\_92, Mordred\_95, MoyaNatalis\_94, PrincessTrina\_96, RosiePosie\_95, Scavito\_96, Tophat\_96,

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

- Bubbykins\_101, JaNo\_94,

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

- AWGoat\_39, Beagle\_51, BetaFish\_49, Boise\_36, BruhMoment\_47, DogYard\_50, Forrestell\_47, Hive\_48, Kubulix\_51, MellowYellow\_47, Nikan\_49, NyleyClemson\_45, Odyssey395\_52, Ollypop\_48, PhuzzTulsa\_48, Pointis\_49, Popstraw\_47, Pureglobe5\_51, RIPWilbur\_48, Ranunculus\_45, RazzB\_46, Ren19\_47, Rizwana\_39, RomansRevenge\_37, SilentRX\_41, Tank\_41, Wilde\_41,

### Summary by start number:

Start 12:

- Found in 19 of 49 ( 38.8% ) of genes in pham
- Manual Annotations of this start: 12 of 38
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Beagle\_51 (AP2), BruhMoment\_47 (AP3), DogYard\_50 (AP2), Forrestell\_47 (AP2), Hive\_48 (AP2), Kubulix\_51 (AP2), MellowYellow\_47 (AP2), Nikan\_49 (AP2), NyleyClemson\_45 (AP2), Odyssey395\_52 (AP2), Ollypop\_48 (AP2), PhuzzTulsa\_48 (AP2), Pointis\_49 (AP2), Popstraw\_47 (AP2), Pureglobe5\_51 (AP2), RIPWilbur\_48 (AP2), RazzB\_46 (AP2), Ren19\_47 (AP2),

Start 13:

- Found in 1 of 49 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ranunculus\_45 (AP),

Start 14:

- Found in 1 of 49 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SilentRX\_41 (AP4),

Start 15:

- Found in 3 of 49 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 2 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boise\_36 (FT), Rizwana\_39 (AP1), RomansRevenge\_37 (FT),

Start 16:

- Found in 3 of 49 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 3 of 38
- Called 100.0% of time when present

- Phage (with cluster) where this start called: AWGoat\_39 (AP4), Tank\_41 (AP1), Wilde\_41 (AP1),

Start 17:

- Found in 22 of 49 ( 44.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.5% of time when present
- Phage (with cluster) where this start called: BetaFish\_49 (AP2),

Start 18:

- Found in 22 of 49 ( 44.9% ) of genes in pham
- Manual Annotations of this start: 18 of 38
- Called 90.9% of time when present
- Phage (with cluster) where this start called: ArV1\_082 (AR), Chipper1996\_960 (AR), Chocolat\_95 (AR), Chubster\_95 (AR), Colucci\_98 (AR), Conboy\_93 (AR), DrYang\_91 (AR), EdgarPoe\_94 (AR), HumptyDumpty\_95 (AR), JayCookie\_95 (AR), KBurrousTX\_93 (AR), Kabreeze\_95 (AR), Linus\_95 (AR), Lymara\_92 (AR), Mordred\_95 (AR), MoyaNatalis\_94 (AR), PrincessTrina\_96 (AR), RosiePosie\_95 (AR), Scavito\_96 (AR), Tophat\_96 (AR),

Start 19:

- Found in 23 of 49 ( 46.9% ) of genes in pham
- Manual Annotations of this start: 1 of 38
- Called 4.3% of time when present
- Phage (with cluster) where this start called: JaNo\_94 (AR),

Start 20:

- Found in 17 of 49 ( 34.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Bubbykins\_101 (UNK),

### **Summary by clusters:**

There are 8 clusters represented in this pham: FT, AP2, AP3, AP1, AP4, AP, AR, UNK,

Info for manual annotations of cluster AP:

- Start number 13 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 15 was manually annotated 1 time for cluster AP1.
- Start number 16 was manually annotated 2 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 12 was manually annotated 11 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 12 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 14 was manually annotated 1 time for cluster AP4.
- Start number 16 was manually annotated 1 time for cluster AP4.

Info for manual annotations of cluster AR:

- Start number 18 was manually annotated 18 times for cluster AR.
- Start number 19 was manually annotated 1 time for cluster AR.

Info for manual annotations of cluster FT:

- Start number 15 was manually annotated 1 time for cluster FT.

### **Gene Information:**

Gene: AWGoat\_39 Start: 35301, Stop: 34870, Start Num: 16

Candidate Starts for AWGoat\_39:

(1, 35424), (5, 35349), (6, 35343), (Start: 16 @35301 has 3 MA's), (20, 35283), (45, 35148), (46, 35142), (48, 35130), (50, 35106), (54, 35079), (56, 35058), (61, 35040), (63, 35013), (68, 34941), (75, 34899),

Gene: ArV1\_082 Start: 60520, Stop: 60933, Start Num: 18

Candidate Starts for ArV1\_082:

(Start: 18 @60520 has 18 MA's), (Start: 19 @60523 has 1 MA's), (20, 60526), (25, 60550), (27, 60559), (28, 60565), (29, 60568), (31, 60577), (39, 60628), (40, 60631), (44, 60655), (52, 60715), (56, 60751), (72, 60913),

Gene: Beagle\_51 Start: 38228, Stop: 37809, Start Num: 12

Candidate Starts for Beagle\_51:

(Start: 12 @38228 has 12 MA's), (17, 38216), (23, 38183), (47, 38057), (54, 38000), (55, 37988), (56, 37979), (57, 37976), (59, 37958),

Gene: BetaFish\_49 Start: 38433, Stop: 38008, Start Num: 17

Candidate Starts for BetaFish\_49:

(7, 38469), (Start: 12 @38445 has 12 MA's), (17, 38433), (20, 38418), (37, 38331), (43, 38298), (45, 38289), (48, 38271), (54, 38220), (55, 38208), (56, 38199), (66, 38118), (75, 38040),

Gene: Boise\_36 Start: 34253, Stop: 33783, Start Num: 15

Candidate Starts for Boise\_36:

(Start: 15 @34253 has 2 MA's), (41, 34124), (47, 34088), (54, 34031), (57, 34007), (72, 33851), (73, 33842), (74, 33839), (76, 33815),

Gene: BruhMoment\_47 Start: 39339, Stop: 38920, Start Num: 12

Candidate Starts for BruhMoment\_47:

(Start: 12 @39339 has 12 MA's), (17, 39327), (23, 39294), (38, 39216), (42, 39201), (45, 39180), (48, 39162), (54, 39111), (55, 39099), (56, 39090), (59, 39069), (66, 38994),

Gene: Bubbykins\_101 Start: 60932, Stop: 61345, Start Num: 20

Candidate Starts for Bubbykins\_101:

(Start: 18 @60920 has 18 MA's), (20, 60932), (35, 61010), (40, 61046), (49, 61100), (50, 61118), (58, 61178), (60, 61190), (62, 61217), (69, 61295), (75, 61334),

Gene: Chipper1996\_960 Start: 62228, Stop: 62641, Start Num: 18

Candidate Starts for Chipper1996\_960:

(Start: 18 @62228 has 18 MA's), (Start: 19 @62231 has 1 MA's), (25, 62258), (27, 62267), (28, 62273), (31, 62285), (33, 62297), (40, 62339), (44, 62363), (52, 62423), (56, 62459), (61, 62489), (65, 62540), (67, 62582), (72, 62621),

Gene: Chocolat\_95 Start: 61935, Stop: 62348, Start Num: 18

Candidate Starts for Chocolat\_95:

(Start: 18 @61935 has 18 MA's), (Start: 19 @61938 has 1 MA's), (25, 61965), (27, 61974), (28, 61980), (31, 61992), (33, 62004), (40, 62046), (44, 62070), (52, 62130), (56, 62166), (61, 62196), (65, 62247), (67, 62289), (72, 62328),

Gene: Chubster\_95 Start: 62175, Stop: 62588, Start Num: 18

Candidate Starts for Chubster\_95:

(Start: 18 @62175 has 18 MA's), (Start: 19 @62178 has 1 MA's), (25, 62205), (27, 62214), (28, 62220), (31, 62232), (33, 62244), (40, 62286), (44, 62310), (52, 62370), (56, 62406), (61, 62436), (65, 62487), (67, 62529), (72, 62568),

Gene: Colucci\_98 Start: 62563, Stop: 62976, Start Num: 18

Candidate Starts for Colucci\_98:

(Start: 18 @62563 has 18 MA's), (Start: 19 @62566 has 1 MA's), (25, 62593), (27, 62602), (28, 62608), (29, 62611), (39, 62671), (40, 62674), (44, 62698), (52, 62758), (56, 62794),

Gene: Conboy\_93 Start: 61684, Stop: 62097, Start Num: 18

Candidate Starts for Conboy\_93:

(Start: 18 @61684 has 18 MA's), (Start: 19 @61687 has 1 MA's), (25, 61714), (27, 61723), (28, 61729), (31, 61741), (33, 61753), (40, 61795), (44, 61819), (52, 61879), (56, 61915), (61, 61945), (65, 61996), (67, 62038), (72, 62077),

Gene: DogYard\_50 Start: 38145, Stop: 37708, Start Num: 12

Candidate Starts for DogYard\_50:

(Start: 12 @38145 has 12 MA's), (17, 38133), (20, 38118), (37, 38031), (43, 37998), (45, 37989), (54, 37920), (55, 37908), (56, 37899), (66, 37818), (75, 37740),

Gene: DrYang\_91 Start: 61721, Stop: 62134, Start Num: 18

Candidate Starts for DrYang\_91:

(3, 61619), (Start: 18 @61721 has 18 MA's), (Start: 19 @61724 has 1 MA's), (25, 61751), (28, 61766), (29, 61769), (30, 61775), (40, 61832), (44, 61856), (52, 61916), (56, 61952),

Gene: EdgarPoe\_94 Start: 62092, Stop: 62505, Start Num: 18

Candidate Starts for EdgarPoe\_94:

(Start: 18 @62092 has 18 MA's), (Start: 19 @62095 has 1 MA's), (25, 62122), (27, 62131), (28, 62137), (31, 62149), (33, 62161), (40, 62203), (44, 62227), (52, 62287), (56, 62323), (61, 62353), (65, 62404), (67, 62446), (72, 62485),

Gene: Forrestell\_47 Start: 36597, Stop: 36178, Start Num: 12

Candidate Starts for Forrestell\_47:

(7, 36621), (11, 36603), (Start: 12 @36597 has 12 MA's), (17, 36585), (23, 36552), (38, 36474), (46, 36432), (47, 36426), (54, 36369), (55, 36357), (56, 36348), (57, 36345), (59, 36327),

Gene: Hive\_48 Start: 38326, Stop: 37889, Start Num: 12

Candidate Starts for Hive\_48:

(Start: 12 @38326 has 12 MA's), (17, 38314), (37, 38212), (43, 38179), (48, 38152), (54, 38101), (55, 38089), (56, 38080), (57, 38077), (66, 37999), (75, 37921),

Gene: HumptyDumpty\_95 Start: 61895, Stop: 62308, Start Num: 18

Candidate Starts for HumptyDumpty\_95:

(Start: 18 @61895 has 18 MA's), (Start: 19 @61898 has 1 MA's), (25, 61925), (27, 61934), (28, 61940), (31, 61952), (33, 61964), (40, 62006), (44, 62030), (52, 62090), (56, 62126), (61, 62156), (65, 62207), (67, 62249), (72, 62288),

Gene: JaNo\_94 Start: 61869, Stop: 62279, Start Num: 19

Candidate Starts for JaNo\_94:

(Start: 18 @61866 has 18 MA's), (Start: 19 @61869 has 1 MA's), (25, 61896), (27, 61905), (28, 61911), (31, 61923), (33, 61935), (40, 61977), (44, 62001), (52, 62061), (56, 62097), (61, 62127), (65, 62178), (67, 62220), (72, 62259),

Gene: JayCookie\_95 Start: 62428, Stop: 62841, Start Num: 18

Candidate Starts for JayCookie\_95:

(Start: 18 @62428 has 18 MA's), (Start: 19 @62431 has 1 MA's), (25, 62458), (27, 62467), (28, 62473), (31, 62485), (33, 62497), (40, 62539), (44, 62563), (52, 62623), (56, 62659), (61, 62689), (65, 62740), (67, 62782), (72, 62821),

Gene: KBurrousTX\_93 Start: 63304, Stop: 63714, Start Num: 18

Candidate Starts for KBurrousTX\_93:

(Start: 18 @63304 has 18 MA's), (Start: 19 @63307 has 1 MA's), (20, 63310), (25, 63334), (26, 63337), (28, 63349), (32, 63367), (34, 63379), (44, 63439), (52, 63499), (56, 63535), (66, 63631), (68, 63667), (69, 63670),

Gene: Kabreeze\_95 Start: 61952, Stop: 62365, Start Num: 18

Candidate Starts for Kabreeze\_95:

(Start: 18 @61952 has 18 MA's), (Start: 19 @61955 has 1 MA's), (25, 61982), (27, 61991), (28, 61997), (31, 62009), (33, 62021), (40, 62063), (44, 62087), (52, 62147), (56, 62183), (61, 62213), (65, 62264), (67, 62306), (72, 62345),

Gene: Kubulix\_51 Start: 38093, Stop: 37656, Start Num: 12

Candidate Starts for Kubulix\_51:

(Start: 12 @38093 has 12 MA's), (17, 38081), (20, 38066), (37, 37979), (43, 37946), (45, 37937), (48, 37919), (54, 37868), (55, 37856), (56, 37847), (57, 37844), (66, 37766), (75, 37688),

Gene: Linus\_95 Start: 62400, Stop: 62813, Start Num: 18

Candidate Starts for Linus\_95:

(Start: 18 @62400 has 18 MA's), (Start: 19 @62403 has 1 MA's), (25, 62430), (27, 62439), (28, 62445), (31, 62457), (33, 62469), (40, 62511), (44, 62535), (52, 62595), (56, 62631), (61, 62661), (65, 62712), (67, 62754), (72, 62793),

Gene: Lymara\_92 Start: 60859, Stop: 61272, Start Num: 18

Candidate Starts for Lymara\_92:

(Start: 18 @60859 has 18 MA's), (Start: 19 @60862 has 1 MA's), (25, 60889), (28, 60904), (31, 60916), (33, 60928), (40, 60970), (44, 60994), (51, 61048), (52, 61054), (56, 61090), (61, 61120), (67, 61213), (72, 61252),

Gene: MellowYellow\_47 Start: 36986, Stop: 36549, Start Num: 12

Candidate Starts for MellowYellow\_47:

(7, 37010), (Start: 12 @36986 has 12 MA's), (17, 36974), (37, 36872), (43, 36839), (45, 36830), (48, 36812), (54, 36761), (55, 36749), (56, 36740), (66, 36659), (75, 36581),

Gene: Mordred\_95 Start: 61991, Stop: 62404, Start Num: 18

Candidate Starts for Mordred\_95:

(Start: 18 @61991 has 18 MA's), (Start: 19 @61994 has 1 MA's), (25, 62021), (27, 62030), (28, 62036), (31, 62048), (33, 62060), (40, 62102), (44, 62126), (52, 62186), (56, 62222), (61, 62252), (65, 62303), (67, 62345), (72, 62384),

Gene: MoyaNatalis\_94 Start: 61874, Stop: 62287, Start Num: 18

Candidate Starts for MoyaNatalis\_94:

(Start: 18 @61874 has 18 MA's), (Start: 19 @61877 has 1 MA's), (25, 61904), (27, 61913), (28, 61919), (31, 61931), (33, 61943), (40, 61985), (44, 62009), (52, 62069), (56, 62105), (61, 62135), (65, 62186), (67, 62228), (72, 62267),

Gene: Nikan\_49 Start: 37352, Stop: 36900, Start Num: 12

Candidate Starts for Nikan\_49:

(2, 37442), (9, 37370), (Start: 12 @37352 has 12 MA's), (17, 37340), (20, 37325), (22, 37319), (37, 37238), (43, 37205), (45, 37196), (47, 37184), (54, 37127), (55, 37115), (56, 37106), (66, 37025), (70, 36974),

Gene: NyleyClemson\_45 Start: 36601, Stop: 36164, Start Num: 12

Candidate Starts for NyleyClemson\_45:

(7, 36625), (Start: 12 @36601 has 12 MA's), (17, 36589), (37, 36487), (43, 36454), (45, 36445), (48, 36427), (54, 36376), (55, 36364), (56, 36355), (66, 36274), (75, 36196),

Gene: Odyssey395\_52 Start: 38270, Stop: 37833, Start Num: 12

Candidate Starts for Odyssey395\_52:

(Start: 12 @38270 has 12 MA's), (17, 38258), (20, 38243), (37, 38156), (43, 38123), (45, 38114), (48, 38096), (54, 38045), (55, 38033), (56, 38024), (57, 38021), (66, 37943), (75, 37865),

Gene: Ollypop\_48 Start: 38043, Stop: 37591, Start Num: 12

Candidate Starts for Ollypop\_48:

(Start: 12 @38043 has 12 MA's), (17, 38031), (20, 38016), (37, 37929), (43, 37896), (45, 37887), (47, 37875), (48, 37869), (54, 37818), (55, 37806), (56, 37797), (64, 37737), (66, 37716), (70, 37665),

Gene: PhuzzTulsa\_48 Start: 38230, Stop: 37793, Start Num: 12

Candidate Starts for PhuzzTulsa\_48:

(Start: 12 @38230 has 12 MA's), (17, 38218), (20, 38203), (37, 38116), (43, 38083), (45, 38074), (48, 38056), (54, 38005), (55, 37993), (56, 37984), (57, 37981), (66, 37903), (75, 37825),

Gene: Pointis\_49 Start: 38268, Stop: 37831, Start Num: 12

Candidate Starts for Pointis\_49:

(Start: 12 @38268 has 12 MA's), (17, 38256), (20, 38241), (37, 38154), (43, 38121), (45, 38112), (48, 38094), (54, 38043), (55, 38031), (56, 38022), (57, 38019), (66, 37941), (75, 37863),

Gene: Popstraw\_47 Start: 38054, Stop: 37617, Start Num: 12

Candidate Starts for Popstraw\_47:

(Start: 12 @38054 has 12 MA's), (17, 38042), (37, 37940), (43, 37907), (48, 37880), (54, 37829), (55, 37817), (56, 37808), (57, 37805), (66, 37727), (75, 37649),

Gene: PrincessTrina\_96 Start: 62182, Stop: 62595, Start Num: 18

Candidate Starts for PrincessTrina\_96:

(Start: 18 @62182 has 18 MA's), (Start: 19 @62185 has 1 MA's), (25, 62212), (27, 62221), (28, 62227), (31, 62239), (33, 62251), (40, 62293), (44, 62317), (52, 62377), (56, 62413), (61, 62443), (65, 62494), (67, 62536), (72, 62575),

Gene: Pureglobe5\_51 Start: 38451, Stop: 38014, Start Num: 12

Candidate Starts for Pureglobe5\_51:

(Start: 12 @38451 has 12 MA's), (17, 38439), (20, 38424), (37, 38337), (43, 38304), (45, 38295), (48, 38277), (54, 38226), (55, 38214), (56, 38205), (66, 38124), (75, 38046),

Gene: RIPWilbur\_48 Start: 37584, Stop: 37147, Start Num: 12

Candidate Starts for RIPWilbur\_48:

(Start: 12 @37584 has 12 MA's), (17, 37572), (20, 37557), (37, 37470), (43, 37437), (45, 37428), (54, 37359), (55, 37347), (56, 37338), (57, 37335), (66, 37257), (75, 37179),

Gene: Ranunculus\_45 Start: 40272, Stop: 39856, Start Num: 13

Candidate Starts for Ranunculus\_45:

(10, 40284), (Start: 13 @40272 has 1 MA's), (17, 40263), (23, 40230), (35, 40179), (38, 40152), (45, 40116), (46, 40110), (53, 40056), (54, 40047), (55, 40035), (56, 40026), (57, 40023), (59, 40005),

Gene: RazzB\_46 Start: 36732, Stop: 36295, Start Num: 12

Candidate Starts for RazzB\_46:

(7, 36756), (Start: 12 @36732 has 12 MA's), (17, 36720), (37, 36618), (43, 36585), (45, 36576), (48, 36558), (54, 36507), (55, 36495), (56, 36486), (66, 36405), (75, 36327),

Gene: Ren19\_47 Start: 37352, Stop: 36900, Start Num: 12

Candidate Starts for Ren19\_47:

(Start: 12 @37352 has 12 MA's), (17, 37340), (20, 37325), (21, 37322), (22, 37319), (37, 37238), (43, 37205), (45, 37196), (47, 37184), (54, 37127), (55, 37115), (56, 37106), (66, 37025), (70, 36974),

Gene: Rizwana\_39 Start: 36865, Stop: 36446, Start Num: 15

Candidate Starts for Rizwana\_39:

(Start: 15 @36865 has 2 MA's), (22, 36841), (24, 36823), (35, 36775), (36, 36769), (47, 36703), (48, 36697), (51, 36667), (54, 36646), (57, 36622), (61, 36592), (66, 36526), (71, 36463),

Gene: RomansRevenge\_37 Start: 34253, Stop: 33783, Start Num: 15

Candidate Starts for RomansRevenge\_37:

(Start: 15 @34253 has 2 MA's), (41, 34124), (47, 34088), (54, 34031), (57, 34007), (72, 33851), (73, 33842), (74, 33839), (76, 33815),

Gene: RosiePosie\_95 Start: 62047, Stop: 62460, Start Num: 18

Candidate Starts for RosiePosie\_95:

(Start: 18 @62047 has 18 MA's), (Start: 19 @62050 has 1 MA's), (25, 62077), (27, 62086), (28, 62092), (31, 62104), (33, 62116), (40, 62158), (44, 62182), (52, 62242), (56, 62278), (61, 62308), (65, 62359), (67, 62401), (72, 62440),

Gene: Scavito\_96 Start: 62040, Stop: 62453, Start Num: 18

Candidate Starts for Scavito\_96:

(Start: 18 @62040 has 18 MA's), (Start: 19 @62043 has 1 MA's), (25, 62070), (27, 62079), (28, 62085), (31, 62097), (33, 62109), (40, 62151), (44, 62175), (52, 62235), (56, 62271), (61, 62301), (65, 62352), (67, 62394), (72, 62433),

Gene: SilentRX\_41 Start: 36325, Stop: 35891, Start Num: 14

Candidate Starts for SilentRX\_41:

(4, 36400), (8, 36352), (Start: 14 @36325 has 1 MA's), (46, 36163), (48, 36151), (50, 36127), (54, 36100), (55, 36088), (56, 36079), (68, 35962), (75, 35920),

Gene: Tank\_41 Start: 36839, Stop: 36408, Start Num: 16

Candidate Starts for Tank\_41:

(Start: 16 @36839 has 3 MA's), (17, 36836), (Start: 19 @36824 has 1 MA's), (20, 36821), (45, 36686), (46, 36680), (48, 36668), (50, 36644), (54, 36617), (55, 36605), (56, 36596), (70, 36464), (77, 36413),

Gene: Tophat\_96 Start: 62229, Stop: 62642, Start Num: 18

Candidate Starts for Tophat\_96:

(Start: 18 @62229 has 18 MA's), (Start: 19 @62232 has 1 MA's), (25, 62259), (27, 62268), (28, 62274), (31, 62286), (33, 62298), (40, 62340), (44, 62364), (52, 62424), (56, 62460), (61, 62490), (65, 62541), (67, 62583), (72, 62622),

Gene: Wilde\_41 Start: 36681, Stop: 36250, Start Num: 16

Candidate Starts for Wilde\_41:

(Start: 16 @36681 has 3 MA's), (17, 36678), (Start: 19 @36666 has 1 MA's), (20, 36663), (45, 36528), (46, 36522), (48, 36510), (50, 36486), (54, 36459), (55, 36447), (56, 36438), (70, 36306), (77, 36255),