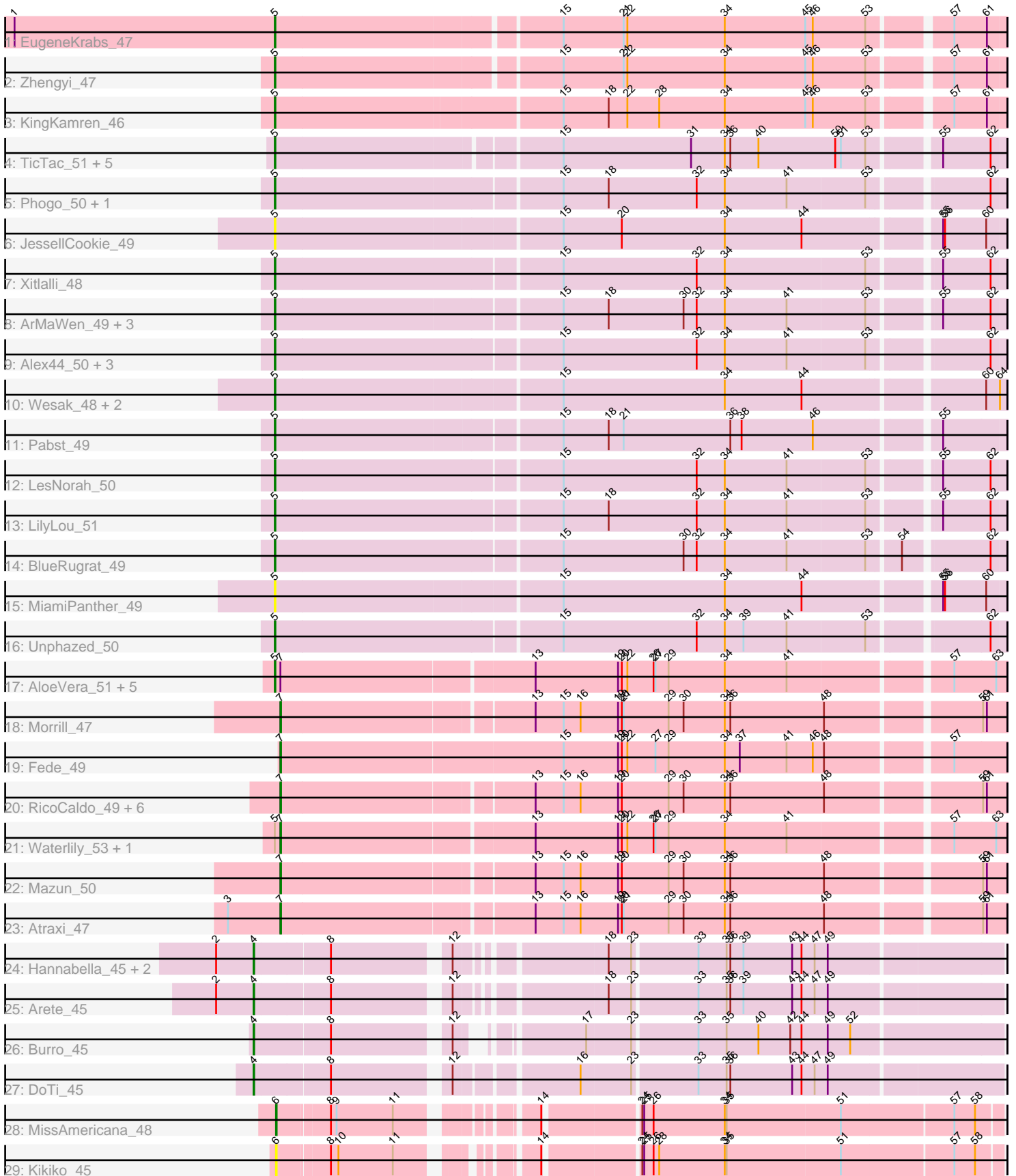


Pham 202977



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 202977 Report

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

Pham number 202977 has 57 members, 10 are drafts.

Phages represented in each track:

- Track 1 : EugeneKrabs\_47
- Track 2 : Zhengyi\_47
- Track 3 : KingKamren\_46
- Track 4 : TicTac\_51, Biozilla\_51, PineapplePluto\_52, Oatly\_51, HitchHiker\_52, CrunchyBoi\_52
- Track 5 : Phogo\_50, TownLake\_49
- Track 6 : JessellCookie\_49
- Track 7 : Xitlalli\_48
- Track 8 : ArMaWen\_49, Dashyla\_49, Corn21\_49, SwissCheezer\_50
- Track 9 : Alex44\_50, DumpQuist\_49, Stormbreaker\_50, Birdfeeder\_48
- Track 10 : Wesak\_48, YellowPanda\_50, TinyTimothy\_47
- Track 11 : Pabst\_49
- Track 12 : LesNorah\_50
- Track 13 : LilyLou\_51
- Track 14 : BlueRugrat\_49
- Track 15 : MiamiPanther\_49
- Track 16 : Unphazed\_50
- Track 17 : AloeVera\_51, ShyRosie\_52, Akoni\_50, JordanFarm\_52, Truong\_50, Ashton\_51
- Track 18 : Morrill\_47
- Track 19 : Fede\_49
- Track 20 : RicoCaldo\_49, Phracted\_49, Pharky\_49, Fullmetal\_49, Phedro\_49, StagePhright\_49, PhriedRice\_50
- Track 21 : Waterlily\_53, Barroma\_49
- Track 22 : Mazun\_50
- Track 23 : Atraxi\_47
- Track 24 : Hannabella\_45, Casino\_44, Gshelby23\_43
- Track 25 : Arete\_45
- Track 26 : Burro\_45
- Track 27 : DoTi\_45
- Track 28 : MissAmericana\_48
- Track 29 : Kikiko\_45

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

The start number called the most often in the published annotations is 5, it was called in 28 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akoni\_50, Alex44\_50, AloeVera\_51, ArMaWen\_49, Ashton\_51, Biozilla\_51, Birdfeeder\_48, BlueRugrat\_49, Corn21\_49, CrunchyBoi\_52, Dashyla\_49, DumpQuist\_49, EugeneKrabs\_47, HitchHiker\_52, JessellCookie\_49, JordanFarm\_52, KingKamren\_46, LesNorah\_50, LilyLou\_51, MiamiPanther\_49, Oatly\_51, Pabst\_49, Phogo\_50, PineapplePluto\_52, ShyRosie\_52, Stormbreaker\_50, SwissCheezer\_50, TicTac\_51, TinyTimothy\_47, TownLake\_49, Truong\_50, Unphazed\_50, Wesak\_48, Xitlalli\_48, YellowPanda\_50, Zhengyi\_47,

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

- Barroma\_49, Waterlily\_53,

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

- Arete\_45, Atraxi\_47, Burro\_45, Casino\_44, DoTi\_45, Fede\_49, Fullmetal\_49, Gshelby23\_43, Hannabella\_45, Kikiko\_45, Mazun\_50, MissAmericana\_48, Morrill\_47, Pharky\_49, Phedro\_49, Phracted\_49, PhriedRice\_50, RicoCaldo\_49, StagePhright\_49,

### Summary by start number:

Start 4:

- Found in 6 of 57 ( 10.5% ) of genes in pham
- Manual Annotations of this start: 6 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arete\_45 (EM1), Burro\_45 (EM1), Casino\_44 (EM1), DoTi\_45 (EM1), Gshelby23\_43 (EM1), Hannabella\_45 (EM1),

Start 5:

- Found in 38 of 57 ( 66.7% ) of genes in pham
- Manual Annotations of this start: 28 of 47
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Akoni\_50 (EK2), Alex44\_50 (EK1), AloeVera\_51 (EK2), ArMaWen\_49 (EK1), Ashton\_51 (EK2), Biozilla\_51 (EK1), Birdfeeder\_48 (EK1), BlueRugrat\_49 (EK1), Corn21\_49 (EK1), CrunchyBoi\_52 (EK1), Dashyla\_49 (EK1), DumpQuist\_49 (EK1), EugeneKrabs\_47 (EK), HitchHiker\_52 (EK1), JessellCookie\_49 (EK1), JordanFarm\_52 (EK2), KingKamren\_46 (EK), LesNorah\_50 (EK1), LilyLou\_51 (EK1), MiamiPanther\_49 (EK1), Oatly\_51 (EK1), Pabst\_49 (EK1), Phogo\_50 (EK1), PineapplePluto\_52 (EK1), ShyRosie\_52 (EK2), Stormbreaker\_50 (EK1), SwissCheezer\_50 (EK1), TicTac\_51 (EK1), TinyTimothy\_47 (EK1), TownLake\_49 (EK1), Truong\_50 (EK2), Unphazed\_50 (EK1), Wesak\_48 (EK1), Xitlalli\_48 (EK1), YellowPanda\_50 (EK1), Zhengyi\_47 (EK),

Start 6:

- Found in 2 of 57 ( 3.5% ) 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: Kikiko\_45 (EM2), MissAmericana\_48 (EM2),

Start 7:

- Found in 19 of 57 ( 33.3% ) of genes in pham
- Manual Annotations of this start: 12 of 47
- Called 68.4% of time when present
- Phage (with cluster) where this start called: Atraxi\_47 (EK2), Barroma\_49 (EK2), Fede\_49 (EK2), Fullmetal\_49 (EK2), Mazun\_50 (EK2), Morrill\_47 (EK2), Pharky\_49 (EK2), Phedro\_49 (EK2), Phracted\_49 (EK2), PhriedRice\_50 (EK2), RicoCaldo\_49 (EK2), StagePhright\_49 (EK2), Waterlily\_53 (EK2),

### **Summary by clusters:**

There are 5 clusters represented in this pham: EK, EM1, EK2, EK1, EM2,

Info for manual annotations of cluster EK:

- Start number 5 was manually annotated 3 times for cluster EK.

Info for manual annotations of cluster EK1:

- Start number 5 was manually annotated 20 times for cluster EK1.

Info for manual annotations of cluster EK2:

- Start number 5 was manually annotated 5 times for cluster EK2.
- Start number 7 was manually annotated 12 times for cluster EK2.

Info for manual annotations of cluster EM1:

- Start number 4 was manually annotated 6 times for cluster EM1.

Info for manual annotations of cluster EM2:

- Start number 6 was manually annotated 1 time for cluster EM2.

### **Gene Information:**

Gene: Akoni\_50 Start: 50074, Stop: 51201, Start Num: 5

Candidate Starts for Akoni\_50:

(Start: 5 @50074 has 28 MA's), (Start: 7 @50083 has 12 MA's), (13, 50476), (19, 50608), (20, 50614), (22, 50623), (26, 50665), (27, 50668), (29, 50689), (34, 50779), (41, 50878), (57, 51118), (63, 51184),

Gene: Alex44\_50 Start: 50187, Stop: 51302, Start Num: 5

Candidate Starts for Alex44\_50:

(Start: 5 @50187 has 28 MA's), (15, 50631), (32, 50844), (34, 50889), (41, 50988), (53, 51111), (62, 51279),

Gene: AloeVera\_51 Start: 50287, Stop: 51414, Start Num: 5

Candidate Starts for AloeVera\_51:

(Start: 5 @50287 has 28 MA's), (Start: 7 @50296 has 12 MA's), (13, 50689), (19, 50821), (20, 50827), (22, 50836), (26, 50878), (27, 50881), (29, 50902), (34, 50992), (41, 51091), (57, 51331), (63, 51397),

Gene: ArMaWen\_49 Start: 49730, Stop: 50842, Start Num: 5

Candidate Starts for ArMaWen\_49:

(Start: 5 @49730 has 28 MA's), (15, 50171), (18, 50243), (30, 50363), (32, 50384), (34, 50429), (41, 50528), (53, 50651), (55, 50744), (62, 50819),

Gene: Arete\_45 Start: 50281, Stop: 51378, Start Num: 4

Candidate Starts for Arete\_45:

(2, 50221), (Start: 4 @50281 has 6 MA's), (8, 50398), (12, 50566), (18, 50770), (23, 50806), (33, 50905), (35, 50950), (36, 50956), (39, 50977), (43, 51055), (44, 51070), (47, 51091), (49, 51112),

Gene: Ashton\_51 Start: 50286, Stop: 51413, Start Num: 5

Candidate Starts for Ashton\_51:

(Start: 5 @50286 has 28 MA's), (Start: 7 @50295 has 12 MA's), (13, 50688), (19, 50820), (20, 50826), (22, 50835), (26, 50877), (27, 50880), (29, 50901), (34, 50991), (41, 51090), (57, 51330), (63, 51396),

Gene: Atraxi\_47 Start: 49413, Stop: 50522, Start Num: 7

Candidate Starts for Atraxi\_47:

(3, 49329), (Start: 7 @49413 has 12 MA's), (13, 49797), (15, 49842), (16, 49869), (19, 49929), (20, 49935), (21, 49938), (29, 50010), (30, 50034), (34, 50100), (36, 50109), (48, 50256), (59, 50484), (61, 50490),

Gene: Barroma\_49 Start: 50085, Stop: 51203, Start Num: 7

Candidate Starts for Barroma\_49:

(Start: 5 @50076 has 28 MA's), (Start: 7 @50085 has 12 MA's), (13, 50478), (19, 50610), (20, 50616), (22, 50625), (26, 50667), (27, 50670), (29, 50691), (34, 50781), (41, 50880), (57, 51120), (63, 51186),

Gene: Biozilla\_51 Start: 49633, Stop: 50739, Start Num: 5

Candidate Starts for Biozilla\_51:

(Start: 5 @49633 has 28 MA's), (15, 50062), (31, 50266), (34, 50320), (36, 50329), (40, 50374), (50, 50497), (51, 50506), (53, 50545), (55, 50641), (62, 50716),

Gene: Birdfeeder\_48 Start: 49936, Stop: 51051, Start Num: 5

Candidate Starts for Birdfeeder\_48:

(Start: 5 @49936 has 28 MA's), (15, 50380), (32, 50593), (34, 50638), (41, 50737), (53, 50860), (62, 51028),

Gene: BlueRugrat\_49 Start: 50169, Stop: 51284, Start Num: 5

Candidate Starts for BlueRugrat\_49:

(Start: 5 @50169 has 28 MA's), (15, 50613), (30, 50805), (32, 50826), (34, 50871), (41, 50970), (53, 51093), (54, 51138), (62, 51261),

Gene: Burro\_45 Start: 51075, Stop: 52154, Start Num: 4

Candidate Starts for Burro\_45:

(Start: 4 @51075 has 6 MA's), (8, 51195), (12, 51363), (17, 51510), (23, 51579), (33, 51678), (35, 51723), (40, 51774), (42, 51825), (44, 51843), (49, 51885), (52, 51921),

Gene: Casino\_44 Start: 50256, Stop: 51353, Start Num: 4

Candidate Starts for Casino\_44:

(2, 50196), (Start: 4 @50256 has 6 MA's), (8, 50373), (12, 50541), (18, 50745), (23, 50781), (33, 50880), (35, 50925), (36, 50931), (39, 50952), (43, 51030), (44, 51045), (47, 51066), (49, 51087),

Gene: Corn21\_49 Start: 50250, Stop: 51365, Start Num: 5

Candidate Starts for Corn21\_49:

(Start: 5 @50250 has 28 MA's), (15, 50694), (18, 50766), (30, 50886), (32, 50907), (34, 50952), (41, 51051), (53, 51174), (55, 51267), (62, 51342),

Gene: CrunchyBoi\_52 Start: 49487, Stop: 50593, Start Num: 5

Candidate Starts for CrunchyBoi\_52:

(Start: 5 @49487 has 28 MA's), (15, 49916), (31, 50120), (34, 50174), (36, 50183), (40, 50228), (50, 50351), (51, 50360), (53, 50399), (55, 50495), (62, 50570),

Gene: Dashyla\_49 Start: 49861, Stop: 50976, Start Num: 5

Candidate Starts for Dashyla\_49:

(Start: 5 @49861 has 28 MA's), (15, 50305), (18, 50377), (30, 50497), (32, 50518), (34, 50563), (41, 50662), (53, 50785), (55, 50878), (62, 50953),

Gene: DoTi\_45 Start: 50660, Stop: 51769, Start Num: 4

Candidate Starts for DoTi\_45:

(Start: 4 @50660 has 6 MA's), (8, 50777), (12, 50945), (16, 51119), (23, 51197), (33, 51296), (35, 51341), (36, 51347), (43, 51446), (44, 51461), (47, 51482), (49, 51503),

Gene: DumpQuist\_49 Start: 49715, Stop: 50830, Start Num: 5

Candidate Starts for DumpQuist\_49:

(Start: 5 @49715 has 28 MA's), (15, 50159), (32, 50372), (34, 50417), (41, 50516), (53, 50639), (62, 50807),

Gene: EugeneKrabs\_47 Start: 50698, Stop: 51804, Start Num: 5

Candidate Starts for EugeneKrabs\_47:

(1, 50281), (Start: 5 @50698 has 28 MA's), (15, 51130), (21, 51226), (22, 51232), (34, 51388), (45, 51517), (46, 51529), (53, 51613), (57, 51724), (61, 51775),

Gene: Fede\_49 Start: 50536, Stop: 51663, Start Num: 7

Candidate Starts for Fede\_49:

(Start: 7 @50536 has 12 MA's), (15, 50983), (19, 51070), (20, 51076), (22, 51085), (27, 51130), (29, 51151), (34, 51241), (37, 51265), (41, 51340), (46, 51382), (48, 51397), (57, 51580),

Gene: Fullmetal\_49 Start: 49956, Stop: 51065, Start Num: 7

Candidate Starts for Fullmetal\_49:

(Start: 7 @49956 has 12 MA's), (13, 50340), (15, 50385), (16, 50412), (19, 50472), (20, 50478), (29, 50553), (30, 50577), (34, 50643), (36, 50652), (48, 50799), (59, 51027), (61, 51033),

Gene: Gshelby23\_43 Start: 50192, Stop: 51289, Start Num: 4

Candidate Starts for Gshelby23\_43:

(2, 50132), (Start: 4 @50192 has 6 MA's), (8, 50309), (12, 50477), (18, 50681), (23, 50717), (33, 50816), (35, 50861), (36, 50867), (39, 50888), (43, 50966), (44, 50981), (47, 51002), (49, 51023),

Gene: Hannabella\_45 Start: 50232, Stop: 51329, Start Num: 4

Candidate Starts for Hannabella\_45:

(2, 50172), (Start: 4 @50232 has 6 MA's), (8, 50349), (12, 50517), (18, 50721), (23, 50757), (33, 50856), (35, 50901), (36, 50907), (39, 50928), (43, 51006), (44, 51021), (47, 51042), (49, 51063),

Gene: HitchHiker\_52 Start: 49633, Stop: 50739, Start Num: 5

Candidate Starts for HitchHiker\_52:

(Start: 5 @49633 has 28 MA's), (15, 50062), (31, 50266), (34, 50320), (36, 50329), (40, 50374), (50, 50497), (51, 50506), (53, 50545), (55, 50641), (62, 50716),

Gene: JessellCookie\_49 Start: 49705, Stop: 50823, Start Num: 5

Candidate Starts for JessellCookie\_49:

(Start: 5 @49705 has 28 MA's), (15, 50146), (20, 50239), (34, 50404), (44, 50527), (55, 50725), (56, 50728), (60, 50794),

Gene: JordanFarm\_52 Start: 50287, Stop: 51414, Start Num: 5

Candidate Starts for JordanFarm\_52:

(Start: 5 @50287 has 28 MA's), (Start: 7 @50296 has 12 MA's), (13, 50689), (19, 50821), (20, 50827), (22, 50836), (26, 50878), (27, 50881), (29, 50902), (34, 50992), (41, 51091), (57, 51331), (63, 51397),

Gene: Kikiko\_45 Start: 50581, Stop: 51609, Start Num: 6

Candidate Starts for Kikiko\_45:

(Start: 6 @50581 has 1 MA's), (8, 50659), (10, 50671), (11, 50758), (14, 50914), (24, 51052), (25, 51055), (26, 51067), (28, 51076), (34, 51181), (35, 51184), (51, 51364), (57, 51538), (58, 51571),

Gene: KingKamren\_46 Start: 50655, Stop: 51770, Start Num: 5

Candidate Starts for KingKamren\_46:

(Start: 5 @50655 has 28 MA's), (15, 51096), (18, 51168), (22, 51198), (28, 51249), (34, 51354), (45, 51483), (46, 51495), (53, 51579), (57, 51690), (61, 51741),

Gene: LesNorah\_50 Start: 50566, Stop: 51681, Start Num: 5

Candidate Starts for LesNorah\_50:

(Start: 5 @50566 has 28 MA's), (15, 51010), (32, 51223), (34, 51268), (41, 51367), (53, 51490), (55, 51583), (62, 51658),

Gene: LilyLou\_51 Start: 50179, Stop: 51294, Start Num: 5

Candidate Starts for LilyLou\_51:

(Start: 5 @50179 has 28 MA's), (15, 50623), (18, 50695), (32, 50836), (34, 50881), (41, 50980), (53, 51103), (55, 51196), (62, 51271),

Gene: Mazun\_50 Start: 50359, Stop: 51468, Start Num: 7

Candidate Starts for Mazun\_50:

(Start: 7 @50359 has 12 MA's), (13, 50743), (15, 50788), (16, 50815), (19, 50875), (20, 50881), (29, 50956), (30, 50980), (34, 51046), (36, 51055), (48, 51202), (59, 51430), (61, 51436),

Gene: MiamiPanther\_49 Start: 49702, Stop: 50820, Start Num: 5

Candidate Starts for MiamiPanther\_49:

(Start: 5 @49702 has 28 MA's), (15, 50143), (34, 50401), (44, 50524), (55, 50722), (56, 50725), (60, 50791),

Gene: MissAmericana\_48 Start: 50516, Stop: 51553, Start Num: 6

Candidate Starts for MissAmericana\_48:

(Start: 6 @50516 has 1 MA's), (8, 50594), (9, 50603), (11, 50693), (14, 50858), (24, 50996), (25, 50999), (26, 51011), (34, 51125), (35, 51128), (51, 51308), (57, 51482), (58, 51515),

Gene: Morrill\_47 Start: 49394, Stop: 50503, Start Num: 7

Candidate Starts for Morrill\_47:

(Start: 7 @49394 has 12 MA's), (13, 49778), (15, 49823), (16, 49850), (19, 49910), (20, 49916), (21, 49919), (29, 49991), (30, 50015), (34, 50081), (36, 50090), (48, 50237), (59, 50465), (61, 50471),

Gene: Oatly\_51 Start: 49193, Stop: 50299, Start Num: 5

Candidate Starts for Oatly\_51:

(Start: 5 @49193 has 28 MA's), (15, 49622), (31, 49826), (34, 49880), (36, 49889), (40, 49934), (50, 50057), (51, 50066), (53, 50105), (55, 50201), (62, 50276),

Gene: Pabst\_49 Start: 49259, Stop: 50374, Start Num: 5

Candidate Starts for Pabst\_49:

(Start: 5 @49259 has 28 MA's), (15, 49697), (18, 49769), (21, 49793), (36, 49964), (38, 49982), (46, 50096), (55, 50276),

Gene: Pharky\_49 Start: 49959, Stop: 51068, Start Num: 7

Candidate Starts for Pharky\_49:

(Start: 7 @49959 has 12 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: Phedro\_49 Start: 49959, Stop: 51068, Start Num: 7

Candidate Starts for Phedro\_49:

(Start: 7 @49959 has 12 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: Phogo\_50 Start: 50007, Stop: 51119, Start Num: 5

Candidate Starts for Phogo\_50:

(Start: 5 @50007 has 28 MA's), (15, 50448), (18, 50520), (32, 50661), (34, 50706), (41, 50805), (53, 50928), (62, 51096),

Gene: Phractured\_49 Start: 49959, Stop: 51068, Start Num: 7

Candidate Starts for Phractured\_49:

(Start: 7 @49959 has 12 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: PhriedRice\_50 Start: 50063, Stop: 51172, Start Num: 7

Candidate Starts for PhriedRice\_50:

(Start: 7 @50063 has 12 MA's), (13, 50447), (15, 50492), (16, 50519), (19, 50579), (20, 50585), (29, 50660), (30, 50684), (34, 50750), (36, 50759), (48, 50906), (59, 51134), (61, 51140),

Gene: PineapplePluto\_52 Start: 49555, Stop: 50661, Start Num: 5

Candidate Starts for PineapplePluto\_52:

(Start: 5 @49555 has 28 MA's), (15, 49984), (31, 50188), (34, 50242), (36, 50251), (40, 50296), (50, 50419), (51, 50428), (53, 50467), (55, 50563), (62, 50638),

Gene: RicoCaldo\_49 Start: 50041, Stop: 51150, Start Num: 7

Candidate Starts for RicoCaldo\_49:

(Start: 7 @50041 has 12 MA's), (13, 50425), (15, 50470), (16, 50497), (19, 50557), (20, 50563), (29, 50638), (30, 50662), (34, 50728), (36, 50737), (48, 50884), (59, 51112), (61, 51118),

Gene: ShyRosie\_52 Start: 50296, Stop: 51423, Start Num: 5

Candidate Starts for ShyRosie\_52:

(Start: 5 @50296 has 28 MA's), (Start: 7 @50305 has 12 MA's), (13, 50698), (19, 50830), (20, 50836), (22, 50845), (26, 50887), (27, 50890), (29, 50911), (34, 51001), (41, 51100), (57, 51340), (63, 51406),

Gene: StagePhright\_49 Start: 49959, Stop: 51068, Start Num: 7

Candidate Starts for StagePhright\_49:

(Start: 7 @49959 has 12 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: Stormbreaker\_50 Start: 50095, Stop: 51210, Start Num: 5

Candidate Starts for Stormbreaker\_50:

(Start: 5 @50095 has 28 MA's), (15, 50539), (32, 50752), (34, 50797), (41, 50896), (53, 51019), (62, 51187),



Gene: SwissCheezer\_50 Start: 49747, Stop: 50859, Start Num: 5

Candidate Starts for SwissCheezer\_50:

(Start: 5 @49747 has 28 MA's), (15, 50188), (18, 50260), (30, 50380), (32, 50401), (34, 50446), (41, 50545), (53, 50668), (55, 50761), (62, 50836),

Gene: TicTac\_51 Start: 49563, Stop: 50669, Start Num: 5

Candidate Starts for TicTac\_51:

(Start: 5 @49563 has 28 MA's), (15, 49992), (31, 50196), (34, 50250), (36, 50259), (40, 50304), (50, 50427), (51, 50436), (53, 50475), (55, 50571), (62, 50646),

Gene: TinyTimothy\_47 Start: 49702, Stop: 50820, Start Num: 5

Candidate Starts for TinyTimothy\_47:

(Start: 5 @49702 has 28 MA's), (15, 50143), (34, 50401), (44, 50524), (60, 50791), (64, 50809),

Gene: TownLake\_49 Start: 49859, Stop: 50974, Start Num: 5

Candidate Starts for TownLake\_49:

(Start: 5 @49859 has 28 MA's), (15, 50303), (18, 50375), (32, 50516), (34, 50561), (41, 50660), (53, 50783), (62, 50951),

Gene: Truong\_50 Start: 50076, Stop: 51203, Start Num: 5

Candidate Starts for Truong\_50:

(Start: 5 @50076 has 28 MA's), (Start: 7 @50085 has 12 MA's), (13, 50478), (19, 50610), (20, 50616), (22, 50625), (26, 50667), (27, 50670), (29, 50691), (34, 50781), (41, 50880), (57, 51120), (63, 51186),

Gene: Unphazed\_50 Start: 49964, Stop: 51079, Start Num: 5

Candidate Starts for Unphazed\_50:

(Start: 5 @49964 has 28 MA's), (15, 50408), (32, 50621), (34, 50666), (39, 50696), (41, 50765), (53, 50888), (62, 51056),

Gene: Waterlily\_53 Start: 50336, Stop: 51454, Start Num: 7

Candidate Starts for Waterlily\_53:

(Start: 5 @50327 has 28 MA's), (Start: 7 @50336 has 12 MA's), (13, 50729), (19, 50861), (20, 50867), (22, 50876), (26, 50918), (27, 50921), (29, 50942), (34, 51032), (41, 51131), (57, 51371), (63, 51437),

Gene: Wesak\_48 Start: 49547, Stop: 50665, Start Num: 5

Candidate Starts for Wesak\_48:

(Start: 5 @49547 has 28 MA's), (15, 49988), (34, 50246), (44, 50369), (60, 50636), (64, 50654),

Gene: Xitlalli\_48 Start: 49974, Stop: 51089, Start Num: 5

Candidate Starts for Xitlalli\_48:

(Start: 5 @49974 has 28 MA's), (15, 50418), (32, 50631), (34, 50676), (53, 50898), (55, 50991), (62, 51066),

Gene: YellowPanda\_50 Start: 49428, Stop: 50546, Start Num: 5

Candidate Starts for YellowPanda\_50:

(Start: 5 @49428 has 28 MA's), (15, 49869), (34, 50127), (44, 50250), (60, 50517), (64, 50535),

Gene: Zhengyi\_47 Start: 50747, Stop: 51853, Start Num: 5

Candidate Starts for Zhengyi\_47:

(Start: 5 @50747 has 28 MA's), (15, 51179), (21, 51275), (22, 51281), (34, 51437), (45, 51566), (46, 51578), (53, 51662), (57, 51773), (61, 51824),