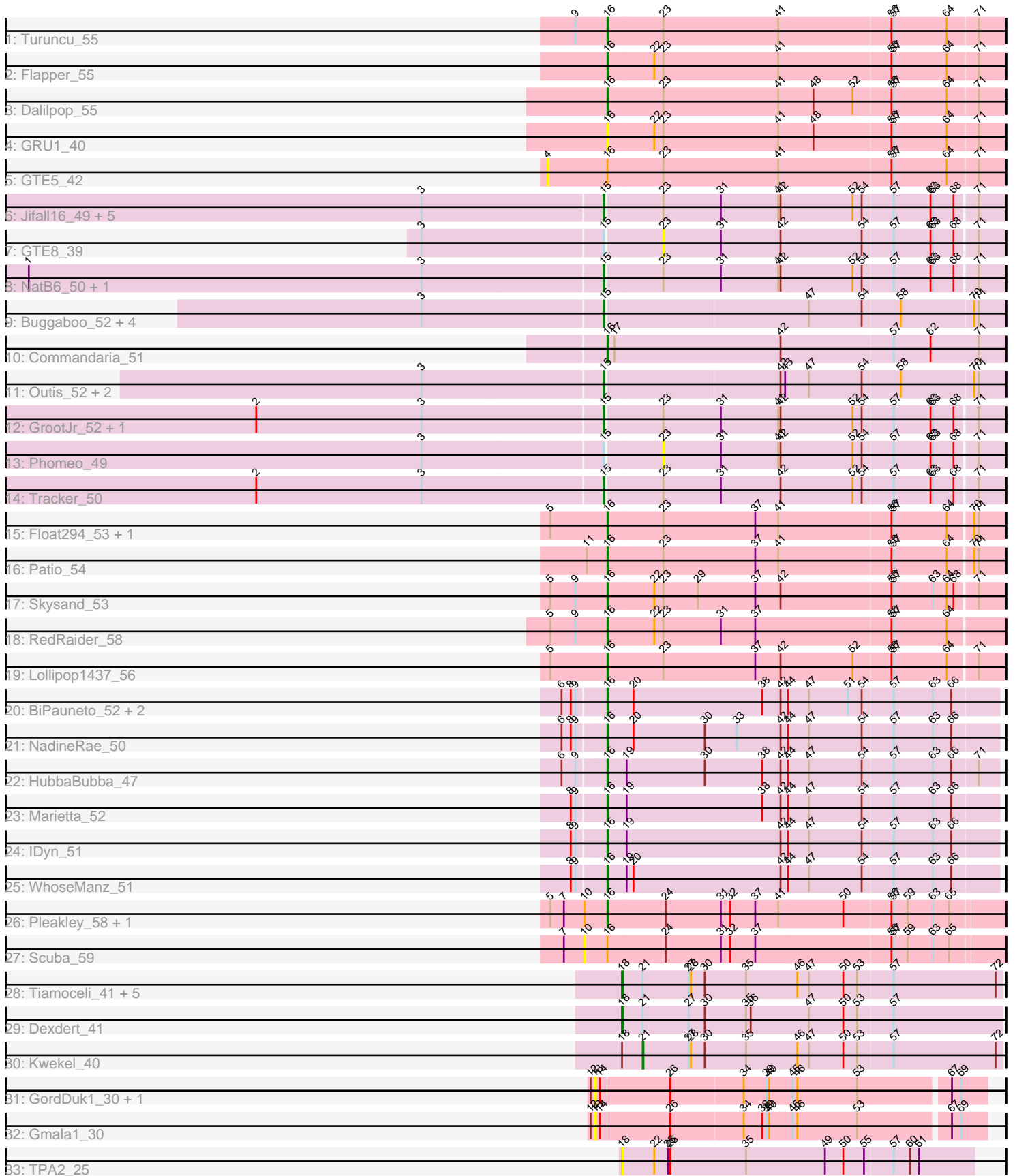


Pham 217985



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 217985 Report

This analysis was run 03/28/25 on database version 593.

Pham number 217985 has 56 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Turuncu\_55
- Track 2 : Flapper\_55
- Track 3 : Dalilpop\_55
- Track 4 : GRU1\_40
- Track 5 : GTE5\_42
- Track 6 : Jifall16\_49, Emianna\_50, Kurt\_50, KidneyBean\_50, Arti\_50, Foxboro\_51
- Track 7 : GTE8\_39
- Track 8 : NatB6\_50, Wheezy\_50
- Track 9 : Buggaboo\_52, Kabluna\_54, SuperSulley\_52, Bonum\_54, NosilaM\_54
- Track 10 : Commandaria\_51
- Track 11 : Outis\_52, MerCougar\_52, StarStruck\_52
- Track 12 : GrootJr\_52, NovumRegina\_50
- Track 13 : Phomeo\_49
- Track 14 : Tracker\_50
- Track 15 : Float294\_53, Ennea\_57
- Track 16 : Patio\_54
- Track 17 : Skysand\_53
- Track 18 : RedRaider\_58
- Track 19 : Lollipop1437\_56
- Track 20 : BiPauneto\_52, Sukkupi\_51, Yndexa\_51
- Track 21 : NadineRae\_50
- Track 22 : HubbaBubba\_47
- Track 23 : Marietta\_52
- Track 24 : IDyn\_51
- Track 25 : WhoseManz\_51
- Track 26 : Pleakley\_58, Fury\_58
- Track 27 : Scuba\_59
- Track 28 : Tiamoceli\_41, EdmundFerry\_39, Chickadee\_40, RoadKill\_38, GTE6\_40, Twonlo\_38
- Track 29 : Dxdert\_41
- Track 30 : Kwekel\_40
- Track 31 : GordDuk1\_30, GordTnk2\_30
- Track 32 : Gmala1\_30
- Track 33 : TPA2\_25

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

The start number called the most often in the published annotations is 16, it was called in 20 of the 46 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BiPauneto\_52, Commandaria\_51, Dalilpop\_55, Ennea\_57, Flapper\_55, Float294\_53, Fury\_58, GRU1\_40, HubbaBubba\_47, IDyn\_51, Lollipop1437\_56, Marietta\_52, NadineRae\_50, Patio\_54, Pleakley\_58, RedRaider\_58, Skysand\_53, Sukkupi\_51, Turuncu\_55, WhoseManz\_51, Yndexa\_51,

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

- GTE5\_42, Scuba\_59,

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

- Arti\_50, Bonum\_54, Buggaboo\_52, Chickadee\_40, Dexdert\_41, EdmundFerry\_39, Emianna\_50, Foxboro\_51, GTE6\_40, GTE8\_39, Gmala1\_30, GordDuk1\_30, GordTnk2\_30, GrootJr\_52, Jifall16\_49, Kabluna\_54, KidneyBean\_50, Kurt\_50, Kwekel\_40, MerCougar\_52, NatB6\_50, NosilaM\_54, NovumRegina\_50, Outis\_52, Phomeo\_49, RoadKill\_38, StarStruck\_52, SuperSulley\_52, TPA2\_25, Tiamoceli\_41, Tracker\_50, Twonlo\_38, Wheezy\_50,

### **Summary by start number:**

Start 4:

- Found in 1 of 56 ( 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: GTE5\_42 (CR1),

Start 10:

- Found in 3 of 56 ( 5.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Scuba\_59 (CR5),

Start 13:

- Found in 3 of 56 ( 5.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gmala1\_30 (DF1), GordDuk1\_30 (DF1), GordTnk2\_30 (DF1),

Start 15:

- Found in 21 of 56 ( 37.5% ) of genes in pham
- Manual Annotations of this start: 19 of 46
- Called 90.5% of time when present
- Phage (with cluster) where this start called: Arti\_50 (CR2), Bonum\_54 (CR2), Buggaboo\_52 (CR2), Emianna\_50 (CR2), Foxboro\_51 (CR2), GrootJr\_52 (CR2), Jifall16\_49 (CR2), Kabluna\_54 (CR2), KidneyBean\_50 (CR2), Kurt\_50 (CR2), MerCougar\_52 (CR2), NatB6\_50 (CR2), NosilaM\_54 (CR2), NovumRegina\_50 (CR2), Outis\_52 (CR2), StarStruck\_52 (CR2), SuperSulley\_52 (CR2), Tracker\_50

(CR2), Wheezy\_50 (CR2),

Start 16:

- Found in 23 of 56 ( 41.1% ) of genes in pham
- Manual Annotations of this start: 20 of 46
- Called 91.3% of time when present
- Phage (with cluster) where this start called: BiPauneto\_52 (CR4), Commandaria\_51 (CR2), Dalilpop\_55 (CR1), Ennea\_57 (CR3), Flapper\_55 (CR1), Float294\_53 (CR3), Fury\_58 (CR5), GRU1\_40 (CR1), HubbaBubba\_47 (CR4), IDyn\_51 (CR4), Lollipop1437\_56 (CR3), Marietta\_52 (CR4), NadineRae\_50 (CR4), Patio\_54 (CR3), Pleakley\_58 (CR5), RedRaider\_58 (CR3), Skysand\_53 (CR3), Sukkupi\_51 (CR4), Turuncu\_55 (CR1), WhoseManz\_51 (CR4), Yndexa\_51 (CR4),

Start 18:

- Found in 9 of 56 ( 16.1% ) of genes in pham
- Manual Annotations of this start: 6 of 46
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Chickadee\_40 (DE3), Dexdert\_41 (DE3), EdmundFerry\_39 (DE3), GTE6\_40 (DE3), RoadKill\_38 (DE3), TPA2\_25 (singleton), Tiamoceli\_41 (DE3), Twonlo\_38 (DE3),

Start 21:

- Found in 8 of 56 ( 14.3% ) of genes in pham
- Manual Annotations of this start: 1 of 46
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Kwekel\_40 (DE3),

Start 23:

- Found in 24 of 56 ( 42.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: GTE8\_39 (CR2), Phomeo\_49 (CR2),

### **Summary by clusters:**

There are 8 clusters represented in this pham: CR2, CR3, singleton, CR1, CR4, CR5, DE3, DF1,

Info for manual annotations of cluster CR1:

- Start number 16 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 15 was manually annotated 19 times for cluster CR2.
- Start number 16 was manually annotated 1 time for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 16 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 16 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 16 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster DE3:

- Start number 18 was manually annotated 6 times for cluster DE3.
- Start number 21 was manually annotated 1 time for cluster DE3.

### **Gene Information:**

Gene: Arti\_50 Start: 38680, Stop: 39186, Start Num: 15

Candidate Starts for Arti\_50:

(3, 38449), (Start: 15 @38680 has 19 MA's), (23, 38752), (31, 38827), (41, 38902), (42, 38905), (52, 38998), (54, 39010), (57, 39049), (62, 39097), (63, 39100), (68, 39127), (71, 39154),

Gene: BiPauneto\_52 Start: 38203, Stop: 38706, Start Num: 16

Candidate Starts for BiPauneto\_52:

(6, 38149), (8, 38161), (9, 38167), (Start: 16 @38203 has 20 MA's), (20, 38236), (38, 38404), (42, 38428), (44, 38437), (47, 38464), (51, 38515), (54, 38533), (57, 38572), (63, 38623), (66, 38647),

Gene: Bonum\_54 Start: 39333, Stop: 39842, Start Num: 15

Candidate Starts for Bonum\_54:

(3, 39102), (Start: 15 @39333 has 19 MA's), (47, 39591), (54, 39660), (58, 39708), (70, 39801), (71, 39807),

Gene: Buggaboo\_52 Start: 39812, Stop: 40321, Start Num: 15

Candidate Starts for Buggaboo\_52:

(3, 39581), (Start: 15 @39812 has 19 MA's), (47, 40070), (54, 40139), (58, 40187), (70, 40280), (71, 40286),

Gene: Chickadee\_40 Start: 36048, Stop: 36539, Start Num: 18

Candidate Starts for Chickadee\_40:

(Start: 18 @36048 has 6 MA's), (Start: 21 @36075 has 1 MA's), (27, 36135), (28, 36138), (30, 36156), (35, 36210), (46, 36276), (47, 36291), (50, 36336), (53, 36354), (57, 36399), (72, 36531),

Gene: Commandaria\_51 Start: 39801, Stop: 40316, Start Num: 16

Candidate Starts for Commandaria\_51:

(Start: 16 @39801 has 20 MA's), (17, 39810), (42, 40026), (57, 40170), (62, 40218), (71, 40281),

Gene: Dalilpop\_55 Start: 40964, Stop: 41473, Start Num: 16

Candidate Starts for Dalilpop\_55:

(Start: 16 @40964 has 20 MA's), (23, 41036), (41, 41186), (48, 41231), (52, 41282), (56, 41330), (57, 41333), (64, 41402), (71, 41441),

Gene: Dxdert\_41 Start: 36308, Stop: 36799, Start Num: 18

Candidate Starts for Dxdert\_41:

(Start: 18 @36308 has 6 MA's), (Start: 21 @36335 has 1 MA's), (27, 36395), (30, 36416), (35, 36470), (36, 36476), (47, 36551), (50, 36596), (53, 36614), (57, 36659),

Gene: EdmundFerry\_39 Start: 36077, Stop: 36568, Start Num: 18

Candidate Starts for EdmundFerry\_39:

(Start: 18 @36077 has 6 MA's), (Start: 21 @36104 has 1 MA's), (27, 36164), (28, 36167), (30, 36185), (35, 36239), (46, 36305), (47, 36320), (50, 36365), (53, 36383), (57, 36428), (72, 36560),

Gene: Emianna\_50 Start: 39672, Stop: 40178, Start Num: 15

Candidate Starts for Emianna\_50:

(3, 39441), (Start: 15 @39672 has 19 MA's), (23, 39744), (31, 39819), (41, 39894), (42, 39897), (52, 39990), (54, 40002), (57, 40041), (62, 40089), (63, 40092), (68, 40119), (71, 40146),

Gene: Ennea\_57 Start: 40686, Stop: 41192, Start Num: 16

Candidate Starts for Ennea\_57:

(5, 40611), (Start: 16 @40686 has 20 MA's), (23, 40758), (37, 40878), (41, 40908), (56, 41052), (57, 41055), (64, 41124), (70, 41154), (71, 41160),

Gene: Flapper\_55 Start: 40395, Stop: 40904, Start Num: 16

Candidate Starts for Flapper\_55:

(Start: 16 @40395 has 20 MA's), (22, 40455), (23, 40467), (41, 40617), (56, 40761), (57, 40764), (64, 40833), (71, 40872),

Gene: Float294\_53 Start: 40128, Stop: 40634, Start Num: 16

Candidate Starts for Float294\_53:

(5, 40053), (Start: 16 @40128 has 20 MA's), (23, 40200), (37, 40320), (41, 40350), (56, 40494), (57, 40497), (64, 40566), (70, 40596), (71, 40602),

Gene: Foxboro\_51 Start: 40178, Stop: 40684, Start Num: 15

Candidate Starts for Foxboro\_51:

(3, 39947), (Start: 15 @40178 has 19 MA's), (23, 40250), (31, 40325), (41, 40400), (42, 40403), (52, 40496), (54, 40508), (57, 40547), (62, 40595), (63, 40598), (68, 40625), (71, 40652),

Gene: Fury\_58 Start: 38850, Stop: 39359, Start Num: 16

Candidate Starts for Fury\_58:

(5, 38775), (7, 38793), (10, 38820), (Start: 16 @38850 has 20 MA's), (24, 38925), (31, 38997), (32, 39009), (37, 39042), (41, 39072), (50, 39156), (56, 39216), (57, 39219), (59, 39237), (63, 39270), (65, 39291),

Gene: GRU1\_40 Start: 31942, Stop: 32451, Start Num: 16

Candidate Starts for GRU1\_40:

(Start: 16 @31942 has 20 MA's), (22, 32002), (23, 32014), (41, 32164), (48, 32209), (56, 32308), (57, 32311), (64, 32380), (71, 32419),

Gene: GTE5\_42 Start: 33174, Stop: 33761, Start Num: 4

Candidate Starts for GTE5\_42:

(4, 33174), (Start: 16 @33252 has 20 MA's), (23, 33324), (41, 33474), (56, 33618), (57, 33621), (64, 33690), (71, 33729),

Gene: GTE6\_40 Start: 36569, Stop: 37060, Start Num: 18

Candidate Starts for GTE6\_40:

(Start: 18 @36569 has 6 MA's), (Start: 21 @36596 has 1 MA's), (27, 36656), (28, 36659), (30, 36677), (35, 36731), (46, 36797), (47, 36812), (50, 36857), (53, 36875), (57, 36920), (72, 37052),

Gene: GTE8\_39 Start: 33002, Stop: 33436, Start Num: 23

Candidate Starts for GTE8\_39:

(3, 32699), (Start: 15 @32930 has 19 MA's), (23, 33002), (31, 33077), (42, 33155), (54, 33260), (57, 33299), (62, 33347), (63, 33350), (68, 33377), (71, 33404),

Gene: Gmala1\_30 Start: 35962, Stop: 36453, Start Num: 13

Candidate Starts for Gmala1\_30:

(12, 35956), (13, 35962), (14, 35968), (26, 36055), (34, 36148), (38, 36172), (39, 36178), (40, 36181), (45, 36211), (46, 36217), (53, 36295), (67, 36409), (69, 36421),

Gene: GordDuk1\_30 Start: 35900, Stop: 36391, Start Num: 13

Candidate Starts for GordDuk1\_30:

(12, 35894), (13, 35900), (14, 35906), (26, 35993), (34, 36086), (39, 36116), (40, 36119), (45, 36149), (46, 36155), (53, 36233), (67, 36347), (69, 36359),

Gene: GordTnk2\_30 Start: 35869, Stop: 36360, Start Num: 13

Candidate Starts for GordTnk2\_30:

(12, 35863), (13, 35869), (14, 35875), (26, 35962), (34, 36055), (39, 36085), (40, 36088), (45, 36118), (46, 36124), (53, 36202), (67, 36316), (69, 36328),

Gene: GrootJr\_52 Start: 39054, Stop: 39560, Start Num: 15

Candidate Starts for GrootJr\_52:

(2, 38607), (3, 38823), (Start: 15 @39054 has 19 MA's), (23, 39126), (31, 39201), (41, 39276), (42, 39279), (52, 39372), (54, 39384), (57, 39423), (62, 39471), (63, 39474), (68, 39501), (71, 39528),

Gene: HubbaBubba\_47 Start: 35218, Stop: 35721, Start Num: 16

Candidate Starts for HubbaBubba\_47:

(6, 35164), (9, 35182), (Start: 16 @35218 has 20 MA's), (19, 35242), (30, 35344), (38, 35419), (42, 35443), (44, 35452), (47, 35479), (54, 35548), (57, 35587), (63, 35638), (66, 35662), (71, 35695),

Gene: IDyn\_51 Start: 36647, Stop: 37150, Start Num: 16

Candidate Starts for IDyn\_51:

(8, 36605), (9, 36611), (Start: 16 @36647 has 20 MA's), (19, 36671), (42, 36872), (44, 36881), (47, 36908), (54, 36977), (57, 37016), (63, 37067), (66, 37091),

Gene: Jifall16\_49 Start: 39326, Stop: 39832, Start Num: 15

Candidate Starts for Jifall16\_49:

(3, 39095), (Start: 15 @39326 has 19 MA's), (23, 39398), (31, 39473), (41, 39548), (42, 39551), (52, 39644), (54, 39656), (57, 39695), (62, 39743), (63, 39746), (68, 39773), (71, 39800),

Gene: Kabluna\_54 Start: 38748, Stop: 39257, Start Num: 15

Candidate Starts for Kabluna\_54:

(3, 38517), (Start: 15 @38748 has 19 MA's), (47, 39006), (54, 39075), (58, 39123), (70, 39216), (71, 39222),

Gene: KidneyBean\_50 Start: 39450, Stop: 39956, Start Num: 15

Candidate Starts for KidneyBean\_50:

(3, 39219), (Start: 15 @39450 has 19 MA's), (23, 39522), (31, 39597), (41, 39672), (42, 39675), (52, 39768), (54, 39780), (57, 39819), (62, 39867), (63, 39870), (68, 39897), (71, 39924),

Gene: Kurt\_50 Start: 39687, Stop: 40193, Start Num: 15

Candidate Starts for Kurt\_50:

(3, 39456), (Start: 15 @39687 has 19 MA's), (23, 39759), (31, 39834), (41, 39909), (42, 39912), (52, 40005), (54, 40017), (57, 40056), (62, 40104), (63, 40107), (68, 40134), (71, 40161),

Gene: Kwekel\_40 Start: 36036, Stop: 36500, Start Num: 21

Candidate Starts for Kwekel\_40:

(Start: 18 @36009 has 6 MA's), (Start: 21 @36036 has 1 MA's), (27, 36096), (28, 36099), (30, 36117), (35, 36171), (46, 36237), (47, 36252), (50, 36297), (53, 36315), (57, 36360), (72, 36492),

Gene: Lollipop1437\_56 Start: 40674, Stop: 41180, Start Num: 16  
Candidate Starts for Lollipop1437\_56:  
(5, 40599), (Start: 16 @40674 has 20 MA's), (23, 40746), (37, 40866), (42, 40899), (52, 40992), (56, 41040), (57, 41043), (64, 41112), (71, 41148),

Gene: Marietta\_52 Start: 36541, Stop: 37044, Start Num: 16  
Candidate Starts for Marietta\_52:  
(8, 36499), (9, 36505), (Start: 16 @36541 has 20 MA's), (19, 36565), (38, 36742), (42, 36766), (44, 36775), (47, 36802), (54, 36871), (57, 36910), (63, 36961), (66, 36985),

Gene: MerCougar\_52 Start: 39950, Stop: 40459, Start Num: 15  
Candidate Starts for MerCougar\_52:  
(3, 39719), (Start: 15 @39950 has 19 MA's), (42, 40172), (43, 40178), (47, 40208), (54, 40277), (58, 40325), (70, 40418), (71, 40424),

Gene: NadineRae\_50 Start: 35788, Stop: 36291, Start Num: 16  
Candidate Starts for NadineRae\_50:  
(6, 35734), (8, 35746), (9, 35752), (Start: 16 @35788 has 20 MA's), (20, 35821), (30, 35914), (33, 35956), (42, 36013), (44, 36022), (47, 36049), (54, 36118), (57, 36157), (63, 36208), (66, 36232),

Gene: NatB6\_50 Start: 38744, Stop: 39250, Start Num: 15  
Candidate Starts for NatB6\_50:  
(1, 38000), (3, 38513), (Start: 15 @38744 has 19 MA's), (23, 38816), (31, 38891), (41, 38966), (42, 38969), (52, 39062), (54, 39074), (57, 39113), (62, 39161), (63, 39164), (68, 39191), (71, 39218),

Gene: NosilaM\_54 Start: 39645, Stop: 40154, Start Num: 15  
Candidate Starts for NosilaM\_54:  
(3, 39414), (Start: 15 @39645 has 19 MA's), (47, 39903), (54, 39972), (58, 40020), (70, 40113), (71, 40119),

Gene: NovumRegina\_50 Start: 39053, Stop: 39559, Start Num: 15  
Candidate Starts for NovumRegina\_50:  
(2, 38606), (3, 38822), (Start: 15 @39053 has 19 MA's), (23, 39125), (31, 39200), (41, 39275), (42, 39278), (52, 39371), (54, 39383), (57, 39422), (62, 39470), (63, 39473), (68, 39500), (71, 39527),

Gene: Outis\_52 Start: 39644, Stop: 40153, Start Num: 15  
Candidate Starts for Outis\_52:  
(3, 39413), (Start: 15 @39644 has 19 MA's), (42, 39866), (43, 39872), (47, 39902), (54, 39971), (58, 40019), (70, 40112), (71, 40118),

Gene: Patio\_54 Start: 39910, Stop: 40416, Start Num: 16  
Candidate Starts for Patio\_54:  
(11, 39883), (Start: 16 @39910 has 20 MA's), (23, 39982), (37, 40102), (41, 40132), (56, 40276), (57, 40279), (64, 40348), (70, 40378), (71, 40384),

Gene: Phomeo\_49 Start: 39394, Stop: 39828, Start Num: 23  
Candidate Starts for Phomeo\_49:  
(3, 39091), (Start: 15 @39322 has 19 MA's), (23, 39394), (31, 39469), (41, 39544), (42, 39547), (52, 39640), (54, 39652), (57, 39691), (62, 39739), (63, 39742), (68, 39769), (71, 39796),

Gene: Pleakley\_58 Start: 38851, Stop: 39360, Start Num: 16  
Candidate Starts for Pleakley\_58:



(5, 38776), (7, 38794), (10, 38821), (Start: 16 @38851 has 20 MA's), (24, 38926), (31, 38998), (32, 39010), (37, 39043), (41, 39073), (50, 39157), (56, 39217), (57, 39220), (59, 39238), (63, 39271), (65, 39292),

Gene: RedRaider\_58 Start: 41932, Stop: 42441, Start Num: 16

Candidate Starts for RedRaider\_58:

(5, 41857), (9, 41890), (Start: 16 @41932 has 20 MA's), (22, 41992), (23, 42004), (31, 42079), (37, 42124), (56, 42298), (57, 42301), (64, 42370),

Gene: RoadKill\_38 Start: 35572, Stop: 36063, Start Num: 18

Candidate Starts for RoadKill\_38:

(Start: 18 @35572 has 6 MA's), (Start: 21 @35599 has 1 MA's), (27, 35659), (28, 35662), (30, 35680), (35, 35734), (46, 35800), (47, 35815), (50, 35860), (53, 35878), (57, 35923), (72, 36055),

Gene: Scuba\_59 Start: 38895, Stop: 39434, Start Num: 10

Candidate Starts for Scuba\_59:

(7, 38868), (10, 38895), (Start: 16 @38925 has 20 MA's), (24, 39000), (31, 39072), (32, 39084), (37, 39117), (56, 39291), (57, 39294), (59, 39312), (63, 39345), (65, 39366),

Gene: Skysand\_53 Start: 40130, Stop: 40636, Start Num: 16

Candidate Starts for Skysand\_53:

(5, 40055), (9, 40088), (Start: 16 @40130 has 20 MA's), (22, 40190), (23, 40202), (29, 40247), (37, 40322), (42, 40355), (56, 40496), (57, 40499), (63, 40550), (64, 40568), (68, 40577), (71, 40604),

Gene: StarStruck\_52 Start: 39644, Stop: 40153, Start Num: 15

Candidate Starts for StarStruck\_52:

(3, 39413), (Start: 15 @39644 has 19 MA's), (42, 39866), (43, 39872), (47, 39902), (54, 39971), (58, 40019), (70, 40112), (71, 40118),

Gene: Sukkupi\_51 Start: 38094, Stop: 38597, Start Num: 16

Candidate Starts for Sukkupi\_51:

(6, 38040), (8, 38052), (9, 38058), (Start: 16 @38094 has 20 MA's), (20, 38127), (38, 38295), (42, 38319), (44, 38328), (47, 38355), (51, 38406), (54, 38424), (57, 38463), (63, 38514), (66, 38538),

Gene: SuperSulley\_52 Start: 39812, Stop: 40321, Start Num: 15

Candidate Starts for SuperSulley\_52:

(3, 39581), (Start: 15 @39812 has 19 MA's), (47, 40070), (54, 40139), (58, 40187), (70, 40280), (71, 40286),

Gene: TPA2\_25 Start: 16114, Stop: 16566, Start Num: 18

Candidate Starts for TPA2\_25:

(Start: 18 @16114 has 6 MA's), (22, 16156), (25, 16174), (26, 16177), (35, 16276), (49, 16378), (50, 16402), (55, 16429), (57, 16465), (60, 16486), (61, 16498),

Gene: Tiamoceli\_41 Start: 36905, Stop: 37396, Start Num: 18

Candidate Starts for Tiamoceli\_41:

(Start: 18 @36905 has 6 MA's), (Start: 21 @36932 has 1 MA's), (27, 36992), (28, 36995), (30, 37013), (35, 37067), (46, 37133), (47, 37148), (50, 37193), (53, 37211), (57, 37256), (72, 37388),

Gene: Tracker\_50 Start: 38471, Stop: 38977, Start Num: 15

Candidate Starts for Tracker\_50:

(2, 38024), (3, 38240), (Start: 15 @38471 has 19 MA's), (23, 38543), (31, 38618), (42, 38696), (52, 38789), (54, 38801), (57, 38840), (62, 38888), (63, 38891), (68, 38918), (71, 38945),

Gene: Turuncu\_55 Start: 40057, Stop: 40566, Start Num: 16

Candidate Starts for Turuncu\_55:

(9, 40015), (Start: 16 @40057 has 20 MA's), (23, 40129), (41, 40279), (56, 40423), (57, 40426), (64, 40495), (71, 40534),

Gene: Twonlo\_38 Start: 35523, Stop: 36014, Start Num: 18

Candidate Starts for Twonlo\_38:

(Start: 18 @35523 has 6 MA's), (Start: 21 @35550 has 1 MA's), (27, 35610), (28, 35613), (30, 35631), (35, 35685), (46, 35751), (47, 35766), (50, 35811), (53, 35829), (57, 35874), (72, 36006),

Gene: Wheezy\_50 Start: 38676, Stop: 39182, Start Num: 15

Candidate Starts for Wheezy\_50:

(1, 37932), (3, 38445), (Start: 15 @38676 has 19 MA's), (23, 38748), (31, 38823), (41, 38898), (42, 38901), (52, 38994), (54, 39006), (57, 39045), (62, 39093), (63, 39096), (68, 39123), (71, 39150),

Gene: WhoseManz\_51 Start: 36154, Stop: 36657, Start Num: 16

Candidate Starts for WhoseManz\_51:

(8, 36112), (9, 36118), (Start: 16 @36154 has 20 MA's), (19, 36178), (20, 36187), (42, 36379), (44, 36388), (47, 36415), (54, 36484), (57, 36523), (63, 36574), (66, 36598),

Gene: Yndexa\_51 Start: 38094, Stop: 38597, Start Num: 16

Candidate Starts for Yndexa\_51:

(6, 38040), (8, 38052), (9, 38058), (Start: 16 @38094 has 20 MA's), (20, 38127), (38, 38295), (42, 38319), (44, 38328), (47, 38355), (51, 38406), (54, 38424), (57, 38463), (63, 38514), (66, 38538),