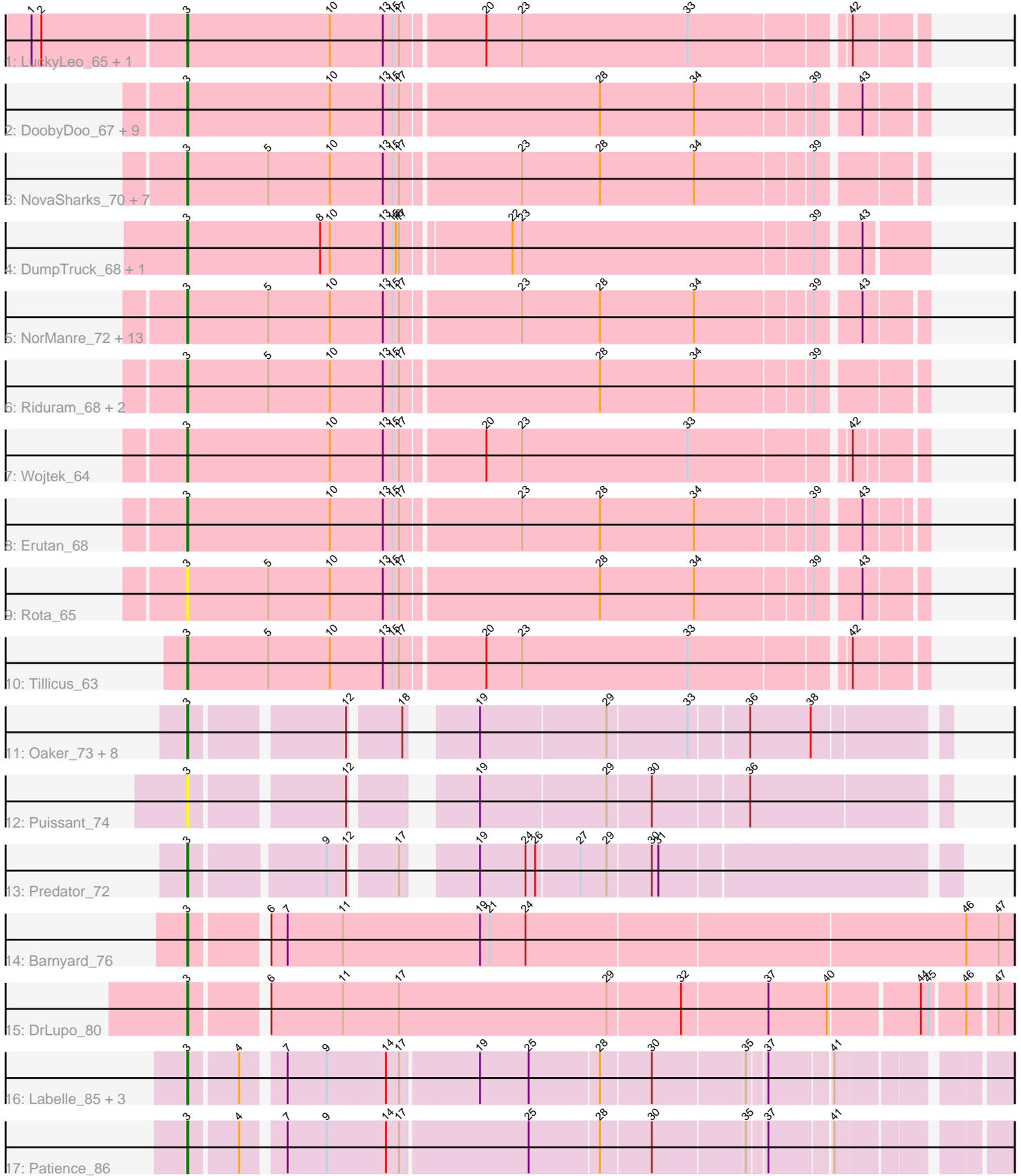


Pham 286981



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 286981 Report

This analysis was run 03/28/26 on database version 641.

Pham number 286981 has 61 members, 10 are drafts.

Phages represented in each track:

- Track 1 : LuckyLeo\_65, Apeppi\_63
- Track 2 : DoobyDoo\_67, MoiGyank\_71, Yikes\_70, Gretellyn\_68, Zany\_66, Sampudon\_68, Jalebi\_67, Sadboi\_69, LavAbarElk\_68, Mima20\_68
- Track 3 : NovaSharks\_70, Charminar\_68, Genamy16\_71, Alyssamiracle\_71, Rumi\_69, RazorC\_68, Stormer\_68, Astralis\_68
- Track 4 : DumpTruck\_68, Xenia2\_68
- Track 5 : NorManre\_72, ParvusTarda\_67, Lila22\_69, Ranch\_68, BirthdayBoy\_70, Gibbin\_70, Patos\_72, DaviePasture\_68, Rukungu\_70, Alephilan\_69, Fulcrum\_68, Lambo\_66, GOATification\_68, OtterstedtS21\_68
- Track 6 : Riduram\_68, Jamemuya19\_67, Avian\_66
- Track 7 : Wojtek\_64
- Track 8 : Erutan\_68
- Track 9 : Rota\_65
- Track 10 : Tillicus\_63
- Track 11 : Oaker\_73, Cborch11\_75, Phreeze\_72, Damien\_73, Beckerton\_72, Megatron06\_74, Konstantine\_77, BobtimousPrime\_73, Thumb\_74
- Track 12 : Puissant\_74
- Track 13 : Predator\_72
- Track 14 : Barnyard\_76
- Track 15 : DrLupo\_80
- Track 16 : Labelle\_85, SuperSonics\_89, Madrugua\_84, Demikore\_87
- Track 17 : Patience\_86

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

The start number called the most often in the published annotations is 3, it was called in 51 of the 51 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alephilan\_69, Alyssamiracle\_71, Apeppi\_63, Astralis\_68, Avian\_66, Barnyard\_76, Beckerton\_72, BirthdayBoy\_70, BobtimousPrime\_73, Cborch11\_75, Charminar\_68, Damien\_73, DaviePasture\_68, Demikore\_87, DoobyDoo\_67, DrLupo\_80, DumpTruck\_68, Erutan\_68, Fulcrum\_68, GOATification\_68, Genamy16\_71, Gibbin\_70, Gretellyn\_68, Jalebi\_67, Jamemuya19\_67, Konstantine\_77, Labelle\_85,

Lambo\_66, LavAbarElk\_68, Lila22\_69, LuckyLeo\_65, Madruga\_84, Megatron06\_74, Mima20\_68, MoiGyank\_71, NorManre\_72, NovaSharks\_70, Oaker\_73, OtterstedtS21\_68, ParvusTarda\_67, Patience\_86, Patos\_72, Phreeze\_72, Predator\_72, Puissant\_74, Ranch\_68, RazorC\_68, Riduram\_68, Rota\_65, Rukungu\_70, Rumi\_69, Sadboi\_69, Sampudon\_68, Stormer\_68, SuperSonics\_89, Thumb\_74, Tillicus\_63, Wojtek\_64, Xenia2\_68, Yikes\_70, Zany\_66,

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

- 

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

- 

### Summary by start number:

Start 3:

- Found in 61 of 61 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 51 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alephilan\_69 (DV), Alyssamiracle\_71 (DV), Apeppi\_63 (DV), Astralis\_68 (DV), Avian\_66 (DV), Barnyard\_76 (H2), Beckerton\_72 (H1), BirthdayBoy\_70 (DV), BobtimousPrime\_73 (H1), Cborch11\_75 (H1), Charminar\_68 (DV), Damien\_73 (H1), DaviePasture\_68 (DV), Demikore\_87 (U), DoobyDoo\_67 (DV), DrLupo\_80 (H2), DumpTruck\_68 (DV), Erutan\_68 (DV), Fulcrum\_68 (DV), GOATification\_68 (DV), Genamy16\_71 (DV), Gibbin\_70 (DV), Gretellyn\_68 (DV), Jalebi\_67 (DV), Jamemuya19\_67 (DV), Konstantine\_77 (H1), Labelle\_85 (U), Lambo\_66 (DV), LavAbarElk\_68 (DV), Lila22\_69 (DV), LuckyLeo\_65 (DV), Madruga\_84 (U), Megatron06\_74 (H1), Mima20\_68 (DV), MoiGyank\_71 (DV), NorManre\_72 (DV), NovaSharks\_70 (DV), Oaker\_73 (H1), OtterstedtS21\_68 (DV), ParvusTarda\_67 (DV), Patience\_86 (U), Patos\_72 (DV), Phreeze\_72 (H1), Predator\_72 (H1), Puissant\_74 (H1), Ranch\_68 (DV), RazorC\_68 (DV), Riduram\_68 (DV), Rota\_65 (DV), Rukungu\_70 (DV), Rumi\_69 (DV), Sadboi\_69 (DV), Sampudon\_68 (DV), Stormer\_68 (DV), SuperSonics\_89 (U), Thumb\_74 (H1), Tillicus\_63 (DV), Wojtek\_64 (DV), Xenia2\_68 (DV), Yikes\_70 (DV), Zany\_66 (DV),

### Summary by clusters:

There are 4 clusters represented in this pham: DV, H2, H1, U,

Info for manual annotations of cluster DV:

- Start number 3 was manually annotated 37 times for cluster DV.

Info for manual annotations of cluster H1:

- Start number 3 was manually annotated 9 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 3 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster U:

- Start number 3 was manually annotated 3 times for cluster U.

### **Gene Information:**

Gene: Alephilan\_69 Start: 46737, Stop: 47387, Start Num: 3

Candidate Starts for Alephilan\_69:

(Start: 3 @46737 has 51 MA's), (5, 46812), (10, 46869), (13, 46917), (15, 46926), (17, 46932), (23, 47037), (28, 47109), (34, 47196), (39, 47298), (43, 47334),

Gene: Alyssamiracle\_71 Start: 45734, Stop: 46384, Start Num: 3

Candidate Starts for Alyssamiracle\_71:

(Start: 3 @45734 has 51 MA's), (5, 45809), (10, 45866), (13, 45914), (15, 45923), (17, 45929), (23, 46034), (28, 46106), (34, 46193), (39, 46295),

Gene: Apeppi\_63 Start: 45907, Stop: 46557, Start Num: 3

Candidate Starts for Apeppi\_63:

(1, 45769), (2, 45778), (Start: 3 @45907 has 51 MA's), (10, 46039), (13, 46087), (15, 46096), (17, 46102), (20, 46174), (23, 46207), (33, 46360), (42, 46495),

Gene: Astralis\_68 Start: 45313, Stop: 45963, Start Num: 3

Candidate Starts for Astralis\_68:

(Start: 3 @45313 has 51 MA's), (5, 45388), (10, 45445), (13, 45493), (15, 45502), (17, 45508), (23, 45613), (28, 45685), (34, 45772), (39, 45874),

Gene: Avian\_66 Start: 45462, Stop: 46112, Start Num: 3

Candidate Starts for Avian\_66:

(Start: 3 @45462 has 51 MA's), (5, 45537), (10, 45594), (13, 45642), (15, 45651), (17, 45657), (28, 45834), (34, 45921), (39, 46023),

Gene: Barnyard\_76 Start: 52606, Stop: 53343, Start Num: 3

Candidate Starts for Barnyard\_76:

(Start: 3 @52606 has 51 MA's), (6, 52666), (7, 52681), (11, 52732), (19, 52858), (21, 52867), (24, 52900), (46, 53299), (47, 53329),

Gene: Beckerton\_72 Start: 54217, Stop: 54837, Start Num: 3

Candidate Starts for Beckerton\_72:

(Start: 3 @54217 has 51 MA's), (12, 54346), (18, 54388), (19, 54433), (29, 54547), (33, 54619), (36, 54670), (38, 54724),

Gene: BirthdayBoy\_70 Start: 47059, Stop: 47709, Start Num: 3

Candidate Starts for BirthdayBoy\_70:

(Start: 3 @47059 has 51 MA's), (5, 47134), (10, 47191), (13, 47239), (15, 47248), (17, 47254), (23, 47359), (28, 47431), (34, 47518), (39, 47620), (43, 47656),

Gene: BobtimousPrime\_73 Start: 54519, Stop: 55139, Start Num: 3

Candidate Starts for BobtimousPrime\_73:

(Start: 3 @54519 has 51 MA's), (12, 54648), (18, 54690), (19, 54735), (29, 54849), (33, 54921), (36, 54972), (38, 55026),

Gene: Cborch11\_75 Start: 53763, Stop: 54383, Start Num: 3

Candidate Starts for Cborch11\_75:

(Start: 3 @53763 has 51 MA's), (12, 53892), (18, 53934), (19, 53979), (29, 54093), (33, 54165), (36, 54216), (38, 54270),

Gene: Charminar\_68 Start: 44970, Stop: 45620, Start Num: 3

Candidate Starts for Charminar\_68:

(Start: 3 @44970 has 51 MA's), (5, 45045), (10, 45102), (13, 45150), (15, 45159), (17, 45165), (23, 45270), (28, 45342), (34, 45429), (39, 45531),

Gene: Damien\_73 Start: 53725, Stop: 54345, Start Num: 3

Candidate Starts for Damien\_73:

(Start: 3 @53725 has 51 MA's), (12, 53854), (18, 53896), (19, 53941), (29, 54055), (33, 54127), (36, 54178), (38, 54232),

Gene: DaviePasture\_68 Start: 46646, Stop: 47296, Start Num: 3

Candidate Starts for DaviePasture\_68:

(Start: 3 @46646 has 51 MA's), (5, 46721), (10, 46778), (13, 46826), (15, 46835), (17, 46841), (23, 46946), (28, 47018), (34, 47105), (39, 47207), (43, 47243),

Gene: Demikore\_87 Start: 55914, Stop: 56600, Start Num: 3

Candidate Starts for Demikore\_87:

(Start: 3 @55914 has 51 MA's), (4, 55956), (7, 55989), (9, 56025), (14, 56079), (17, 56091), (19, 56160), (25, 56205), (28, 56268), (30, 56313), (35, 56394), (37, 56409), (41, 56463),

Gene: DoobyDoo\_67 Start: 45520, Stop: 46170, Start Num: 3

Candidate Starts for DoobyDoo\_67:

(Start: 3 @45520 has 51 MA's), (10, 45652), (13, 45700), (15, 45709), (17, 45715), (28, 45892), (34, 45979), (39, 46081), (43, 46117),

Gene: DrLupo\_80 Start: 53815, Stop: 54534, Start Num: 3

Candidate Starts for DrLupo\_80:

(Start: 3 @53815 has 51 MA's), (6, 53875), (11, 53941), (17, 53992), (29, 54184), (32, 54250), (37, 54328), (40, 54382), (44, 54460), (45, 54466), (46, 54496), (47, 54520),

Gene: DumpTruck\_68 Start: 45709, Stop: 46362, Start Num: 3

Candidate Starts for DumpTruck\_68:

(Start: 3 @45709 has 51 MA's), (8, 45832), (10, 45841), (13, 45889), (15, 45898), (16, 45901), (17, 45904), (22, 45997), (23, 46006), (39, 46270), (43, 46306),

Gene: Erutan\_68 Start: 46162, Stop: 46809, Start Num: 3

Candidate Starts for Erutan\_68:

(Start: 3 @46162 has 51 MA's), (10, 46294), (13, 46342), (15, 46351), (17, 46357), (23, 46462), (28, 46534), (34, 46621), (39, 46723), (43, 46759),

Gene: Fulcrum\_68 Start: 46367, Stop: 47017, Start Num: 3

Candidate Starts for Fulcrum\_68:

(Start: 3 @46367 has 51 MA's), (5, 46442), (10, 46499), (13, 46547), (15, 46556), (17, 46562), (23, 46667), (28, 46739), (34, 46826), (39, 46928), (43, 46964),

Gene: GOATification\_68 Start: 46367, Stop: 47017, Start Num: 3

Candidate Starts for GOATification\_68:

(Start: 3 @46367 has 51 MA's), (5, 46442), (10, 46499), (13, 46547), (15, 46556), (17, 46562), (23, 46667), (28, 46739), (34, 46826), (39, 46928), (43, 46964),

Gene: Genamy16\_71 Start: 45720, Stop: 46370, Start Num: 3

Candidate Starts for Genamy16\_71:

(Start: 3 @45720 has 51 MA's), (5, 45795), (10, 45852), (13, 45900), (15, 45909), (17, 45915), (23, 46020), (28, 46092), (34, 46179), (39, 46281),

Gene: Gibbin\_70 Start: 47172, Stop: 47822, Start Num: 3

Candidate Starts for Gibbin\_70:

(Start: 3 @47172 has 51 MA's), (5, 47247), (10, 47304), (13, 47352), (15, 47361), (17, 47367), (23, 47472), (28, 47544), (34, 47631), (39, 47733), (43, 47769),

Gene: Gretellyn\_68 Start: 47034, Stop: 47684, Start Num: 3

Candidate Starts for Gretellyn\_68:

(Start: 3 @47034 has 51 MA's), (10, 47166), (13, 47214), (15, 47223), (17, 47229), (28, 47406), (34, 47493), (39, 47595), (43, 47631),

Gene: Jalebi\_67 Start: 47387, Stop: 48037, Start Num: 3

Candidate Starts for Jalebi\_67:

(Start: 3 @47387 has 51 MA's), (10, 47519), (13, 47567), (15, 47576), (17, 47582), (28, 47759), (34, 47846), (39, 47948), (43, 47984),

Gene: Jamemuya19\_67 Start: 45325, Stop: 45975, Start Num: 3

Candidate Starts for Jamemuya19\_67:

(Start: 3 @45325 has 51 MA's), (5, 45400), (10, 45457), (13, 45505), (15, 45514), (17, 45520), (28, 45697), (34, 45784), (39, 45886),

Gene: Konstantine\_77 Start: 54556, Stop: 55176, Start Num: 3

Candidate Starts for Konstantine\_77:

(Start: 3 @54556 has 51 MA's), (12, 54685), (18, 54727), (19, 54772), (29, 54886), (33, 54958), (36, 55009), (38, 55063),

Gene: Labelle\_85 Start: 55748, Stop: 56434, Start Num: 3

Candidate Starts for Labelle\_85:

(Start: 3 @55748 has 51 MA's), (4, 55790), (7, 55823), (9, 55859), (14, 55913), (17, 55925), (19, 55994), (25, 56039), (28, 56102), (30, 56147), (35, 56228), (37, 56243), (41, 56297),

Gene: Lambo\_66 Start: 46164, Stop: 46814, Start Num: 3

Candidate Starts for Lambo\_66:

(Start: 3 @46164 has 51 MA's), (5, 46239), (10, 46296), (13, 46344), (15, 46353), (17, 46359), (23, 46464), (28, 46536), (34, 46623), (39, 46725), (43, 46761),

Gene: LavAbarElk\_68 Start: 45974, Stop: 46624, Start Num: 3

Candidate Starts for LavAbarElk\_68:

(Start: 3 @45974 has 51 MA's), (10, 46106), (13, 46154), (15, 46163), (17, 46169), (28, 46346), (34, 46433), (39, 46535), (43, 46571),

Gene: Lila22\_69 Start: 47116, Stop: 47766, Start Num: 3

Candidate Starts for Lila22\_69:

(Start: 3 @47116 has 51 MA's), (5, 47191), (10, 47248), (13, 47296), (15, 47305), (17, 47311), (23, 47416), (28, 47488), (34, 47575), (39, 47677), (43, 47713),

Gene: LuckyLeo\_65 Start: 45907, Stop: 46557, Start Num: 3

Candidate Starts for LuckyLeo\_65:

(1, 45769), (2, 45778), (Start: 3 @45907 has 51 MA's), (10, 46039), (13, 46087), (15, 46096), (17, 46102), (20, 46174), (23, 46207), (33, 46360), (42, 46495),

Gene: Madruga\_84 Start: 55702, Stop: 56388, Start Num: 3

Candidate Starts for Madruga\_84:

(Start: 3 @55702 has 51 MA's), (4, 55744), (7, 55777), (9, 55813), (14, 55867), (17, 55879), (19, 55948), (25, 55993), (28, 56056), (30, 56101), (35, 56182), (37, 56197), (41, 56251),

Gene: Megatron06\_74 Start: 54299, Stop: 54919, Start Num: 3

Candidate Starts for Megatron06\_74:

(Start: 3 @54299 has 51 MA's), (12, 54428), (18, 54470), (19, 54515), (29, 54629), (33, 54701), (36, 54752), (38, 54806),

Gene: Mima20\_68 Start: 46550, Stop: 47200, Start Num: 3

Candidate Starts for Mima20\_68:

(Start: 3 @46550 has 51 MA's), (10, 46682), (13, 46730), (15, 46739), (17, 46745), (28, 46922), (34, 47009), (39, 47111), (43, 47147),

Gene: MoiGyank\_71 Start: 47315, Stop: 47965, Start Num: 3

Candidate Starts for MoiGyank\_71:

(Start: 3 @47315 has 51 MA's), (10, 47447), (13, 47495), (15, 47504), (17, 47510), (28, 47687), (34, 47774), (39, 47876), (43, 47912),

Gene: NorManre\_72 Start: 47564, Stop: 48214, Start Num: 3

Candidate Starts for NorManre\_72:

(Start: 3 @47564 has 51 MA's), (5, 47639), (10, 47696), (13, 47744), (15, 47753), (17, 47759), (23, 47864), (28, 47936), (34, 48023), (39, 48125), (43, 48161),

Gene: NovaSharks\_70 Start: 45311, Stop: 45961, Start Num: 3

Candidate Starts for NovaSharks\_70:

(Start: 3 @45311 has 51 MA's), (5, 45386), (10, 45443), (13, 45491), (15, 45500), (17, 45506), (23, 45611), (28, 45683), (34, 45770), (39, 45872),

Gene: Oaker\_73 Start: 54328, Stop: 54948, Start Num: 3

Candidate Starts for Oaker\_73:

(Start: 3 @54328 has 51 MA's), (12, 54457), (18, 54499), (19, 54544), (29, 54658), (33, 54730), (36, 54781), (38, 54835),

Gene: OtterstedtS21\_68 Start: 46498, Stop: 47148, Start Num: 3

Candidate Starts for OtterstedtS21\_68:

(Start: 3 @46498 has 51 MA's), (5, 46573), (10, 46630), (13, 46678), (15, 46687), (17, 46693), (23, 46798), (28, 46870), (34, 46957), (39, 47059), (43, 47095),

Gene: ParvusTarda\_67 Start: 45870, Stop: 46520, Start Num: 3

Candidate Starts for ParvusTarda\_67:

(Start: 3 @45870 has 51 MA's), (5, 45945), (10, 46002), (13, 46050), (15, 46059), (17, 46065), (23, 46170), (28, 46242), (34, 46329), (39, 46431), (43, 46467),

Gene: Patience\_86 Start: 56615, Stop: 57301, Start Num: 3

Candidate Starts for Patience\_86:

(Start: 3 @56615 has 51 MA's), (4, 56657), (7, 56690), (9, 56726), (14, 56780), (17, 56792), (25, 56906), (28, 56969), (30, 57014), (35, 57095), (37, 57110), (41, 57164),

Gene: Patos\_72 Start: 47563, Stop: 48213, Start Num: 3

Candidate Starts for Patos\_72:

(Start: 3 @47563 has 51 MA's), (5, 47638), (10, 47695), (13, 47743), (15, 47752), (17, 47758), (23, 47863), (28, 47935), (34, 48022), (39, 48124), (43, 48160),

Gene: Phreeze\_72 Start: 53298, Stop: 53918, Start Num: 3  
Candidate Starts for Phreeze\_72:  
(Start: 3 @53298 has 51 MA's), (12, 53427), (18, 53469), (19, 53514), (29, 53628), (33, 53700), (36, 53751), (38, 53805),

Gene: Predator\_72 Start: 52784, Stop: 53422, Start Num: 3  
Candidate Starts for Predator\_72:  
(Start: 3 @52784 has 51 MA's), (9, 52898), (12, 52916), (17, 52955), (19, 53003), (24, 53045), (26, 53054), (27, 53093), (29, 53117), (30, 53156), (31, 53162),

Gene: Puissant\_74 Start: 53461, Stop: 54084, Start Num: 3  
Candidate Starts for Puissant\_74:  
(Start: 3 @53461 has 51 MA's), (12, 53590), (19, 53677), (29, 53791), (30, 53830), (36, 53914),

Gene: Ranch\_68 Start: 45342, Stop: 45992, Start Num: 3  
Candidate Starts for Ranch\_68:  
(Start: 3 @45342 has 51 MA's), (5, 45417), (10, 45474), (13, 45522), (15, 45531), (17, 45537), (23, 45642), (28, 45714), (34, 45801), (39, 45903), (43, 45939),

Gene: RazorC\_68 Start: 45465, Stop: 46115, Start Num: 3  
Candidate Starts for RazorC\_68:  
(Start: 3 @45465 has 51 MA's), (5, 45540), (10, 45597), (13, 45645), (15, 45654), (17, 45660), (23, 45765), (28, 45837), (34, 45924), (39, 46026),

Gene: Riduram\_68 Start: 45040, Stop: 45690, Start Num: 3  
Candidate Starts for Riduram\_68:  
(Start: 3 @45040 has 51 MA's), (5, 45115), (10, 45172), (13, 45220), (15, 45229), (17, 45235), (28, 45412), (34, 45499), (39, 45601),

Gene: Rota\_65 Start: 46233, Stop: 46883, Start Num: 3  
Candidate Starts for Rota\_65:  
(Start: 3 @46233 has 51 MA's), (5, 46308), (10, 46365), (13, 46413), (15, 46422), (17, 46428), (28, 46605), (34, 46692), (39, 46794), (43, 46830),

Gene: Rukungu\_70 Start: 47455, Stop: 48105, Start Num: 3  
Candidate Starts for Rukungu\_70:  
(Start: 3 @47455 has 51 MA's), (5, 47530), (10, 47587), (13, 47635), (15, 47644), (17, 47650), (23, 47755), (28, 47827), (34, 47914), (39, 48016), (43, 48052),

Gene: Rumi\_69 Start: 45008, Stop: 45658, Start Num: 3  
Candidate Starts for Rumi\_69:  
(Start: 3 @45008 has 51 MA's), (5, 45083), (10, 45140), (13, 45188), (15, 45197), (17, 45203), (23, 45308), (28, 45380), (34, 45467), (39, 45569),

Gene: Sadboi\_69 Start: 47035, Stop: 47685, Start Num: 3  
Candidate Starts for Sadboi\_69:  
(Start: 3 @47035 has 51 MA's), (10, 47167), (13, 47215), (15, 47224), (17, 47230), (28, 47407), (34, 47494), (39, 47596), (43, 47632),

Gene: Sampudon\_68 Start: 47387, Stop: 48037, Start Num: 3  
Candidate Starts for Sampudon\_68:  
(Start: 3 @47387 has 51 MA's), (10, 47519), (13, 47567), (15, 47576), (17, 47582), (28, 47759), (34, 47846), (39, 47948), (43, 47984),

Gene: Stormer\_68 Start: 45012, Stop: 45662, Start Num: 3

Candidate Starts for Stormer\_68:

(Start: 3 @45012 has 51 MA's), (5, 45087), (10, 45144), (13, 45192), (15, 45201), (17, 45207), (23, 45312), (28, 45384), (34, 45471), (39, 45573),

Gene: SuperSonics\_89 Start: 55670, Stop: 56356, Start Num: 3

Candidate Starts for SuperSonics\_89:

(Start: 3 @55670 has 51 MA's), (4, 55712), (7, 55745), (9, 55781), (14, 55835), (17, 55847), (19, 55916), (25, 55961), (28, 56024), (30, 56069), (35, 56150), (37, 56165), (41, 56219),

Gene: Thumb\_74 Start: 53733, Stop: 54350, Start Num: 3

Candidate Starts for Thumb\_74:

(Start: 3 @53733 has 51 MA's), (12, 53862), (18, 53904), (19, 53949), (29, 54063), (33, 54135), (36, 54186), (38, 54237),

Gene: Tillicus\_63 Start: 45848, Stop: 46498, Start Num: 3

Candidate Starts for Tillicus\_63:

(Start: 3 @45848 has 51 MA's), (5, 45923), (10, 45980), (13, 46028), (15, 46037), (17, 46043), (20, 46115), (23, 46148), (33, 46301), (42, 46436),

Gene: Wojtek\_64 Start: 45592, Stop: 46239, Start Num: 3

Candidate Starts for Wojtek\_64:

(Start: 3 @45592 has 51 MA's), (10, 45724), (13, 45772), (15, 45781), (17, 45787), (20, 45859), (23, 45892), (33, 46045), (42, 46180),

Gene: Xenia2\_68 Start: 45594, Stop: 46247, Start Num: 3

Candidate Starts for Xenia2\_68:

(Start: 3 @45594 has 51 MA's), (8, 45717), (10, 45726), (13, 45774), (15, 45783), (16, 45786), (17, 45789), (22, 45882), (23, 45891), (39, 46155), (43, 46191),

Gene: Yikes\_70 Start: 47481, Stop: 48131, Start Num: 3

Candidate Starts for Yikes\_70:

(Start: 3 @47481 has 51 MA's), (10, 47613), (13, 47661), (15, 47670), (17, 47676), (28, 47853), (34, 47940), (39, 48042), (43, 48078),

Gene: Zany\_66 Start: 47075, Stop: 47725, Start Num: 3

Candidate Starts for Zany\_66:

(Start: 3 @47075 has 51 MA's), (10, 47207), (13, 47255), (15, 47264), (17, 47270), (28, 47447), (34, 47534), (39, 47636), (43, 47672),