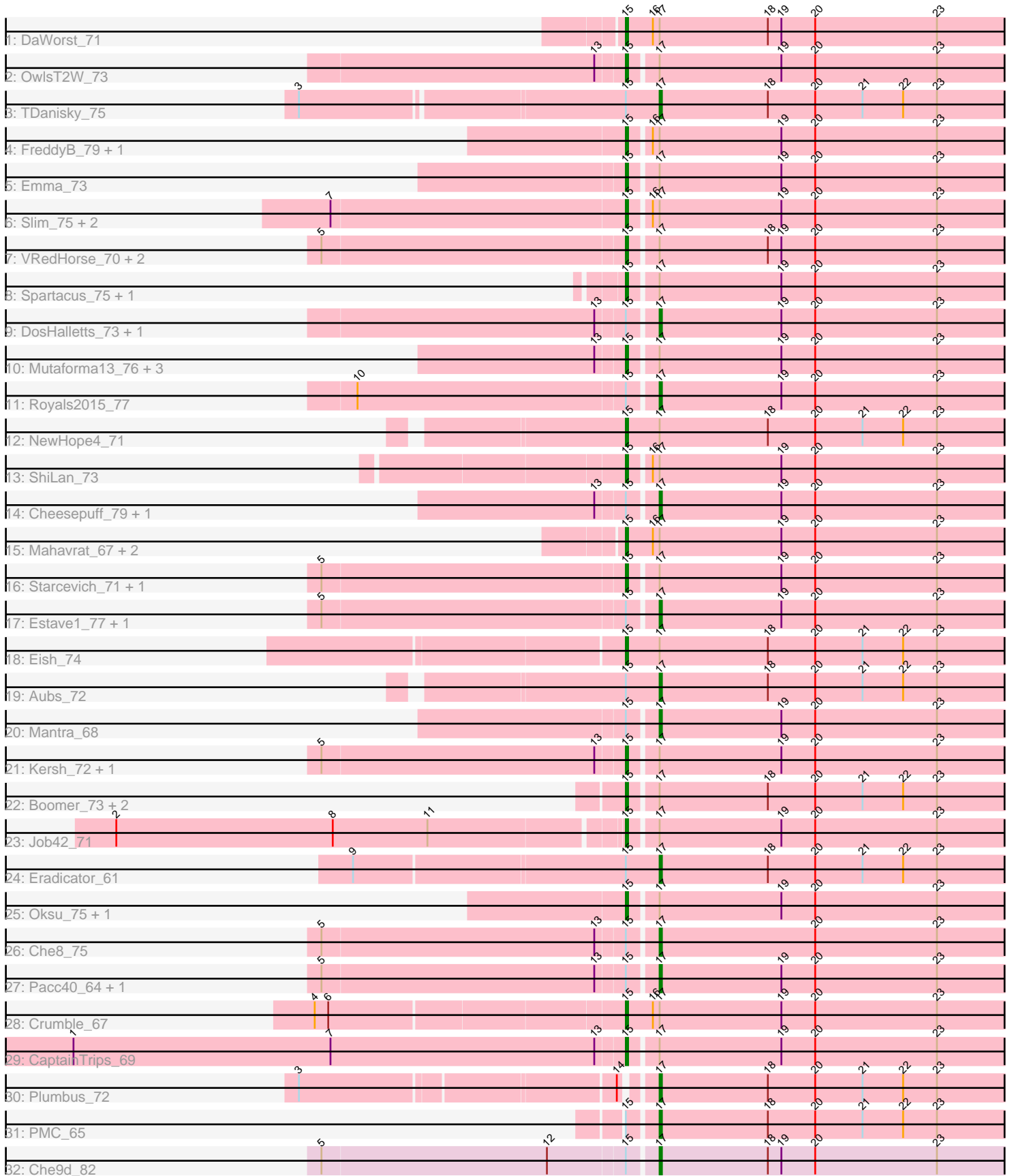


Pham 306530



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 306530 Report

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

Pham number 306530 has 52 members, 2 are drafts.

Phages represented in each track:

- Track 1 : DaWorst\_71
- Track 2 : OwlsT2W\_73
- Track 3 : TDanisky\_75
- Track 4 : FreddyB\_79, Ramsey\_74
- Track 5 : Emma\_73
- Track 6 : Slim\_75, Emmaloid\_75, Rialto\_78
- Track 7 : VRedHorse\_70, Cornucopia\_72, Fancypants\_75
- Track 8 : Spartacus\_75, BodEinwohner17\_76
- Track 9 : DosHalletts\_73, Hades\_71
- Track 10 : Mutaforma13\_76, LunaBlu\_73, Galactic\_70, Sarma624\_69
- Track 11 : Royals2015\_77
- Track 12 : NewHope4\_71
- Track 13 : ShiLan\_73
- Track 14 : Cheesepuff\_79, BuzzLyseyear\_77
- Track 15 : Mahavrat\_67, RockyHorror\_71, Grimmer\_80
- Track 16 : Starcevich\_71, Nitzel\_67
- Track 17 : Estave1\_77, Moonbeam\_71
- Track 18 : Eish\_74
- Track 19 : Aubs\_72
- Track 20 : Mantra\_68
- Track 21 : Kersh\_72, LilMoolah\_69
- Track 22 : Boomer\_73, MilleniumForce\_71, Rockne\_69
- Track 23 : Job42\_71
- Track 24 : Eradicator\_61
- Track 25 : Oksu\_75, BlueCrab\_73
- Track 26 : Che8\_75
- Track 27 : Pacc40\_64, Nivrat\_67
- Track 28 : Crumble\_67
- Track 29 : CaptainTrips\_69
- Track 30 : Plumbus\_72
- Track 31 : PMC\_65
- Track 32 : Che9d\_82

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

The start number called the most often in the published annotations is 15, it was called in 33 of the 50 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BlueCrab\_73, BodEinwohner17\_76, Boomer\_73, CaptainTrips\_69, Cornucopia\_72, Crumble\_67, DaWorst\_71, Eish\_74, Emma\_73, Emmaloid\_75, Fancypants\_75, FreddyB\_79, Galactic\_70, Grimmer\_80, Job42\_71, Kersh\_72, LilMoolah\_69, LunaBlu\_73, Mahavrat\_67, MilleniumForce\_71, Mutaforma13\_76, NewHope4\_71, Nitzel\_67, Oksu\_75, OwlsT2W\_73, Ramsey\_74, Rialto\_78, Rockne\_69, RockyHorror\_71, Sarma624\_69, ShiLan\_73, Slim\_75, Spartacus\_75, Starcevich\_71, VRedHorse\_70,

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

- Aubs\_72, BuzzLyseyear\_77, Che8\_75, Che9d\_82, Cheesepuff\_79, DosHalletts\_73, Eradicator\_61, Estave1\_77, Hades\_71, Mantra\_68, Moonbeam\_71, Nivrat\_67, PMC\_65, Pacc40\_64, Royals2015\_77, TDanisky\_75,

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

- Plumbus\_72,

### Summary by start number:

Start 15:

- Found in 51 of 52 ( 98.1% ) of genes in pham
- Manual Annotations of this start: 33 of 50
- Called 68.6% of time when present
- Phage (with cluster) where this start called: BlueCrab\_73 (F1), BodEinwohner17\_76 (F1), Boomer\_73 (F1), CaptainTrips\_69 (F1), Cornucopia\_72 (F1), Crumble\_67 (F1), DaWorst\_71 (F1), Eish\_74 (F1), Emma\_73 (F1), Emmaloid\_75 (F1), Fancypants\_75 (F1), FreddyB\_79 (F1), Galactic\_70 (F1), Grimmer\_80 (F1), Job42\_71 (F1), Kersh\_72 (F1), LilMoolah\_69 (F1), LunaBlu\_73 (F1), Mahavrat\_67 (F1), MilleniumForce\_71 (F1), Mutaforma13\_76 (F1), NewHope4\_71 (F1), Nitzel\_67 (F1), Oksu\_75 (F1), OwlsT2W\_73 (F1), Ramsey\_74 (F1), Rialto\_78 (F1), Rockne\_69 (F1), RockyHorror\_71 (F1), Sarma624\_69 (F1), ShiLan\_73 (F1), Slim\_75 (F1), Spartacus\_75 (F1), Starcevich\_71 (F1), VRedHorse\_70 (F1),

Start 17:

- Found in 52 of 52 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 17 of 50
- Called 32.7% of time when present
- Phage (with cluster) where this start called: Aubs\_72 (F1), BuzzLyseyear\_77 (F1), Che8\_75 (F1), Che9d\_82 (F2), Cheesepuff\_79 (F1), DosHalletts\_73 (F1), Eradicator\_61 (F1), Estave1\_77 (F1), Hades\_71 (F1), Mantra\_68 (F1), Moonbeam\_71 (F1), Nivrat\_67 (F1), PMC\_65 (F1), Pacc40\_64 (F1), Plumbus\_72 (F1), Royals2015\_77 (F1), TDanisky\_75 (F1),

### Summary by clusters:

There are 2 clusters represented in this pham: F1, F2,

Info for manual annotations of cluster F1:

- Start number 15 was manually annotated 33 times for cluster F1.

- Start number 17 was manually annotated 16 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 17 was manually annotated 1 time for cluster F2.

**Gene Information:**

Gene: Aubs\_72 Start: 46574, Stop: 46738, Start Num: 17

Candidate Starts for Aubs\_72:

(Start: 15 @46559 has 33 MA's), (Start: 17 @46574 has 17 MA's), (18, 46622), (20, 46643), (21, 46664), (22, 46682), (23, 46697),

Gene: BlueCrab\_73 Start: 46976, Stop: 47152, Start Num: 15

Candidate Starts for BlueCrab\_73:

(Start: 15 @46976 has 33 MA's), (Start: 17 @46988 has 17 MA's), (19, 47042), (20, 47057), (23, 47111),

Gene: BodEinwohner17\_76 Start: 48065, Stop: 48241, Start Num: 15

Candidate Starts for BodEinwohner17\_76:

(Start: 15 @48065 has 33 MA's), (Start: 17 @48077 has 17 MA's), (19, 48131), (20, 48146), (23, 48200),

Gene: Boomer\_73 Start: 46160, Stop: 46336, Start Num: 15

Candidate Starts for Boomer\_73:

(Start: 15 @46160 has 33 MA's), (Start: 17 @46172 has 17 MA's), (18, 46220), (20, 46241), (21, 46262), (22, 46280), (23, 46295),

Gene: BuzzLyseyear\_77 Start: 48122, Stop: 48286, Start Num: 17

Candidate Starts for BuzzLyseyear\_77:

(13, 48098), (Start: 15 @48110 has 33 MA's), (Start: 17 @48122 has 17 MA's), (19, 48176), (20, 48191), (23, 48245),

Gene: CaptainTrips\_69 Start: 45366, Stop: 45542, Start Num: 15

Candidate Starts for CaptainTrips\_69:

(1, 45123), (7, 45237), (13, 45354), (Start: 15 @45366 has 33 MA's), (Start: 17 @45378 has 17 MA's), (19, 45432), (20, 45447), (23, 45501),

Gene: Che8\_75 Start: 46187, Stop: 46351, Start Num: 17

Candidate Starts for Che8\_75:

(5, 46043), (13, 46163), (Start: 15 @46175 has 33 MA's), (Start: 17 @46187 has 17 MA's), (20, 46256), (23, 46310),

Gene: Che9d\_82 Start: 45911, Stop: 46075, Start Num: 17

Candidate Starts for Che9d\_82:

(5, 45767), (12, 45866), (Start: 15 @45899 has 33 MA's), (Start: 17 @45911 has 17 MA's), (18, 45959), (19, 45965), (20, 45980), (23, 46034),

Gene: Cheese puff\_79 Start: 45572, Stop: 45736, Start Num: 17

Candidate Starts for Cheese puff\_79:

(13, 45548), (Start: 15 @45560 has 33 MA's), (Start: 17 @45572 has 17 MA's), (19, 45626), (20, 45641), (23, 45695),

Gene: Cornucopia\_72 Start: 44790, Stop: 44966, Start Num: 15

Candidate Starts for Cornucopia\_72:

(5, 44658), (Start: 15 @44790 has 33 MA's), (Start: 17 @44802 has 17 MA's), (18, 44850), (19, 44856), (20, 44871), (23, 44925),

Gene: Crumble\_67 Start: 42381, Stop: 42560, Start Num: 15

Candidate Starts for Crumble\_67:

(4, 42249), (6, 42255), (Start: 15 @42381 has 33 MA's), (16, 42393), (Start: 17 @42396 has 17 MA's), (19, 42450), (20, 42465), (23, 42519),

Gene: DaWorst\_71 Start: 45136, Stop: 45315, Start Num: 15

Candidate Starts for DaWorst\_71:

(Start: 15 @45136 has 33 MA's), (16, 45148), (Start: 17 @45151 has 17 MA's), (18, 45199), (19, 45205), (20, 45220), (23, 45274),

Gene: DosHalletts\_73 Start: 47406, Stop: 47570, Start Num: 17

Candidate Starts for DosHalletts\_73:

(13, 47382), (Start: 15 @47394 has 33 MA's), (Start: 17 @47406 has 17 MA's), (19, 47460), (20, 47475), (23, 47529),

Gene: Eish\_74 Start: 46769, Stop: 46948, Start Num: 15

Candidate Starts for Eish\_74:

(Start: 15 @46769 has 33 MA's), (Start: 17 @46784 has 17 MA's), (18, 46832), (20, 46853), (21, 46874), (22, 46892), (23, 46907),

Gene: Emma\_73 Start: 45152, Stop: 45328, Start Num: 15

Candidate Starts for Emma\_73:

(Start: 15 @45152 has 33 MA's), (Start: 17 @45164 has 17 MA's), (19, 45218), (20, 45233), (23, 45287),

Gene: Emmaloid\_75 Start: 45890, Stop: 46066, Start Num: 15

Candidate Starts for Emmaloid\_75:

(7, 45761), (Start: 15 @45890 has 33 MA's), (16, 45899), (Start: 17 @45902 has 17 MA's), (19, 45956), (20, 45971), (23, 46025),

Gene: Eradicator\_61 Start: 43588, Stop: 43752, Start Num: 17

Candidate Starts for Eradicator\_61:

(9, 43456), (Start: 15 @43573 has 33 MA's), (Start: 17 @43588 has 17 MA's), (18, 43636), (20, 43657), (21, 43678), (22, 43696), (23, 43711),

Gene: Estave1\_77 Start: 49101, Stop: 49265, Start Num: 17

Candidate Starts for Estave1\_77:

(5, 48957), (Start: 15 @49089 has 33 MA's), (Start: 17 @49101 has 17 MA's), (19, 49155), (20, 49170), (23, 49224),

Gene: Fancypants\_75 Start: 47387, Stop: 47563, Start Num: 15

Candidate Starts for Fancypants\_75:

(5, 47255), (Start: 15 @47387 has 33 MA's), (Start: 17 @47399 has 17 MA's), (18, 47447), (19, 47453), (20, 47468), (23, 47522),

Gene: FreddyB\_79 Start: 47135, Stop: 47311, Start Num: 15

Candidate Starts for FreddyB\_79:

(Start: 15 @47135 has 33 MA's), (16, 47144), (Start: 17 @47147 has 17 MA's), (19, 47201), (20, 47216), (23, 47270),

Gene: Galactic\_70 Start: 45411, Stop: 45587, Start Num: 15

Candidate Starts for Galactic\_70:

(13, 45399), (Start: 15 @45411 has 33 MA's), (Start: 17 @45423 has 17 MA's), (19, 45477), (20, 45492), (23, 45546),

Gene: Grimmer\_80 Start: 45962, Stop: 46141, Start Num: 15

Candidate Starts for Grimmer\_80:

(Start: 15 @45962 has 33 MA's), (16, 45974), (Start: 17 @45977 has 17 MA's), (19, 46031), (20, 46046), (23, 46100),

Gene: Hades\_71 Start: 44162, Stop: 44326, Start Num: 17

Candidate Starts for Hades\_71:

(13, 44138), (Start: 15 @44150 has 33 MA's), (Start: 17 @44162 has 17 MA's), (19, 44216), (20, 44231), (23, 44285),

Gene: Job42\_71 Start: 48732, Stop: 48908, Start Num: 15

Candidate Starts for Job42\_71:

(2, 48513), (8, 48609), (11, 48651), (Start: 15 @48732 has 33 MA's), (Start: 17 @48744 has 17 MA's), (19, 48798), (20, 48813), (23, 48867),

Gene: Kersh\_72 Start: 47575, Stop: 47751, Start Num: 15

Candidate Starts for Kersh\_72:

(5, 47443), (13, 47563), (Start: 15 @47575 has 33 MA's), (Start: 17 @47587 has 17 MA's), (19, 47641), (20, 47656), (23, 47710),

Gene: LilMoolah\_69 Start: 45729, Stop: 45905, Start Num: 15

Candidate Starts for LilMoolah\_69:

(5, 45597), (13, 45717), (Start: 15 @45729 has 33 MA's), (Start: 17 @45741 has 17 MA's), (19, 45795), (20, 45810), (23, 45864),

Gene: LunaBlu\_73 Start: 46069, Stop: 46245, Start Num: 15

Candidate Starts for LunaBlu\_73:

(13, 46057), (Start: 15 @46069 has 33 MA's), (Start: 17 @46081 has 17 MA's), (19, 46135), (20, 46150), (23, 46204),

Gene: Mahavrat\_67 Start: 43531, Stop: 43710, Start Num: 15

Candidate Starts for Mahavrat\_67:

(Start: 15 @43531 has 33 MA's), (16, 43543), (Start: 17 @43546 has 17 MA's), (19, 43600), (20, 43615), (23, 43669),

Gene: Mantra\_68 Start: 45375, Stop: 45539, Start Num: 17

Candidate Starts for Mantra\_68:

(Start: 15 @45363 has 33 MA's), (Start: 17 @45375 has 17 MA's), (19, 45429), (20, 45444), (23, 45498),

Gene: MilleniumForce\_71 Start: 46034, Stop: 46210, Start Num: 15

Candidate Starts for MilleniumForce\_71:

(Start: 15 @46034 has 33 MA's), (Start: 17 @46046 has 17 MA's), (18, 46094), (20, 46115), (21, 46136), (22, 46154), (23, 46169),

Gene: Moonbeam\_71 Start: 46193, Stop: 46357, Start Num: 17  
Candidate Starts for Moonbeam\_71:  
(5, 46049), (Start: 15 @46181 has 33 MA's), (Start: 17 @46193 has 17 MA's), (19, 46247), (20, 46262),  
(23, 46316),

Gene: Mutaforma13\_76 Start: 46783, Stop: 46959, Start Num: 15  
Candidate Starts for Mutaforma13\_76:  
(13, 46771), (Start: 15 @46783 has 33 MA's), (Start: 17 @46795 has 17 MA's), (19, 46849), (20,  
46864), (23, 46918),

Gene: NewHope4\_71 Start: 43976, Stop: 44155, Start Num: 15  
Candidate Starts for NewHope4\_71:  
(Start: 15 @43976 has 33 MA's), (Start: 17 @43991 has 17 MA's), (18, 44039), (20, 44060), (21,  
44081), (22, 44099), (23, 44114),

Gene: Nitzel\_67 Start: 43134, Stop: 43310, Start Num: 15  
Candidate Starts for Nitzel\_67:  
(5, 43002), (Start: 15 @43134 has 33 MA's), (Start: 17 @43146 has 17 MA's), (19, 43200), (20, 43215),  
(23, 43269),

Gene: Nivrat\_67 Start: 45614, Stop: 45778, Start Num: 17  
Candidate Starts for Nivrat\_67:  
(5, 45470), (13, 45590), (Start: 15 @45602 has 33 MA's), (Start: 17 @45614 has 17 MA's), (19, 45668),  
(20, 45683), (23, 45737),

Gene: Oksu\_75 Start: 47529, Stop: 47705, Start Num: 15  
Candidate Starts for Oksu\_75:  
(Start: 15 @47529 has 33 MA's), (Start: 17 @47541 has 17 MA's), (19, 47595), (20, 47610), (23,  
47664),

Gene: OwlsT2W\_73 Start: 45895, Stop: 46071, Start Num: 15  
Candidate Starts for OwlsT2W\_73:  
(13, 45883), (Start: 15 @45895 has 33 MA's), (Start: 17 @45907 has 17 MA's), (19, 45961), (20,  
45976), (23, 46030),

Gene: PMC\_65 Start: 44396, Stop: 44560, Start Num: 17  
Candidate Starts for PMC\_65:  
(Start: 15 @44384 has 33 MA's), (Start: 17 @44396 has 17 MA's), (18, 44444), (20, 44465), (21,  
44486), (22, 44504), (23, 44519),

Gene: Pacc40\_64 Start: 45641, Stop: 45805, Start Num: 17  
Candidate Starts for Pacc40\_64:  
(5, 45497), (13, 45617), (Start: 15 @45629 has 33 MA's), (Start: 17 @45641 has 17 MA's), (19, 45695),  
(20, 45710), (23, 45764),

Gene: Plumbus\_72 Start: 43333, Stop: 43497, Start Num: 17  
Candidate Starts for Plumbus\_72:  
(3, 43189), (14, 43321), (Start: 17 @43333 has 17 MA's), (18, 43381), (20, 43402), (21, 43423), (22,  
43441), (23, 43456),

Gene: Ramsey\_74 Start: 47871, Stop: 48047, Start Num: 15  
Candidate Starts for Ramsey\_74:

(Start: 15 @47871 has 33 MA's), (16, 47880), (Start: 17 @47883 has 17 MA's), (19, 47937), (20, 47952), (23, 48006),

Gene: Rialto\_78 Start: 47263, Stop: 47439, Start Num: 15

Candidate Starts for Rialto\_78:

(7, 47134), (Start: 15 @47263 has 33 MA's), (16, 47272), (Start: 17 @47275 has 17 MA's), (19, 47329), (20, 47344), (23, 47398),

Gene: Rockne\_69 Start: 44396, Stop: 44572, Start Num: 15

Candidate Starts for Rockne\_69:

(Start: 15 @44396 has 33 MA's), (Start: 17 @44408 has 17 MA's), (18, 44456), (20, 44477), (21, 44498), (22, 44516), (23, 44531),

Gene: RockyHorror\_71 Start: 44952, Stop: 45131, Start Num: 15

Candidate Starts for RockyHorror\_71:

(Start: 15 @44952 has 33 MA's), (16, 44964), (Start: 17 @44967 has 17 MA's), (19, 45021), (20, 45036), (23, 45090),

Gene: Royals2015\_77 Start: 45927, Stop: 46091, Start Num: 17

Candidate Starts for Royals2015\_77:

(10, 45798), (Start: 15 @45915 has 33 MA's), (Start: 17 @45927 has 17 MA's), (19, 45981), (20, 45996), (23, 46050),

Gene: Sarma624\_69 Start: 42529, Stop: 42705, Start Num: 15

Candidate Starts for Sarma624\_69:

(13, 42517), (Start: 15 @42529 has 33 MA's), (Start: 17 @42541 has 17 MA's), (19, 42595), (20, 42610), (23, 42664),

Gene: ShiLan\_73 Start: 48503, Stop: 48679, Start Num: 15

Candidate Starts for ShiLan\_73:

(Start: 15 @48503 has 33 MA's), (16, 48512), (Start: 17 @48515 has 17 MA's), (19, 48569), (20, 48584), (23, 48638),

Gene: Slim\_75 Start: 45881, Stop: 46057, Start Num: 15

Candidate Starts for Slim\_75:

(7, 45752), (Start: 15 @45881 has 33 MA's), (16, 45890), (Start: 17 @45893 has 17 MA's), (19, 45947), (20, 45962), (23, 46016),

Gene: Spartacus\_75 Start: 48082, Stop: 48258, Start Num: 15

Candidate Starts for Spartacus\_75:

(Start: 15 @48082 has 33 MA's), (Start: 17 @48094 has 17 MA's), (19, 48148), (20, 48163), (23, 48217),

Gene: Starcevich\_71 Start: 46946, Stop: 47122, Start Num: 15

Candidate Starts for Starcevich\_71:

(5, 46814), (Start: 15 @46946 has 33 MA's), (Start: 17 @46958 has 17 MA's), (19, 47012), (20, 47027), (23, 47081),

Gene: TDanisky\_75 Start: 44459, Stop: 44623, Start Num: 17

Candidate Starts for TDanisky\_75:

(3, 44306), (Start: 15 @44444 has 33 MA's), (Start: 17 @44459 has 17 MA's), (18, 44507), (20, 44528), (21, 44549), (22, 44567), (23, 44582),

Gene: VRedHorse\_70 Start: 43608, Stop: 43784, Start Num: 15

Candidate Starts for VRedHorse\_70:

(5, 43476), (Start: 15 @43608 has 33 MA's), (Start: 17 @43620 has 17 MA's), (18, 43668), (19, 43674),  
(20, 43689), (23, 43743),