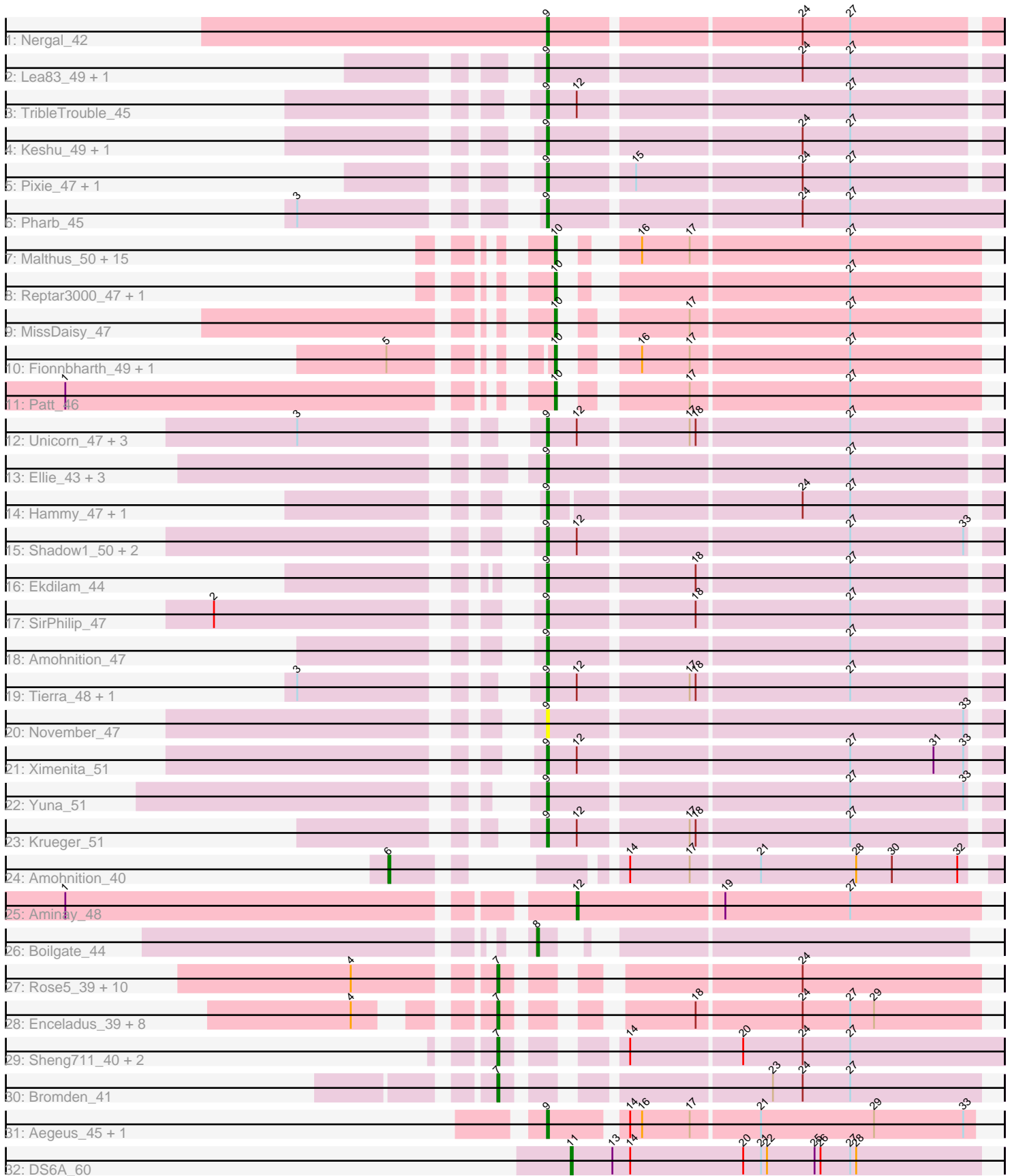


Pham 216085



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 216085 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216085 has 83 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Nergal\_42
- Track 2 : Lea83\_49, ShedlockHolmes\_48
- Track 3 : TribbleTrouble\_45
- Track 4 : Keshu\_49, Hurricane\_48
- Track 5 : Pixie\_47, TBond007\_47
- Track 6 : Pharb\_45
- Track 7 : Malthus\_50, Lebo14\_50, Kraw\_50, Cheetobro\_49, Chancellor\_49, OmniCritical\_48, Y10\_48, Taquito\_49, Juliette\_51, Ruthiejr\_50, Slarp\_49, JF1\_49, Y2\_48, Mitti\_49, Wintermute\_49, SamScheppers\_47
- Track 8 : Reptar3000\_47, Bobquesha\_51
- Track 9 : MissDaisy\_47
- Track 10 : Fionnbharth\_49, Eponine\_51
- Track 11 : Patt\_46
- Track 12 : Unicorn\_47, PhelpsODU\_47, Bryler\_48, Cain\_48
- Track 13 : Ellie\_43, Amgine\_45, Applecrisp\_47, Fefferhead\_45
- Track 14 : Hammy\_47, DarthP\_47
- Track 15 : Shadow1\_50, Syra333\_50, Sunflower1121\_51
- Track 16 : Ekdilam\_44
- Track 17 : SirPhilip\_47
- Track 18 : Amohnition\_47
- Track 19 : Tierra\_48, Phrank\_48
- Track 20 : November\_47
- Track 21 : Ximenita\_51
- Track 22 : Yuna\_51
- Track 23 : Krueger\_51
- Track 24 : Amohnition\_40
- Track 25 : Aminay\_48
- Track 26 : Boilgate\_44
- Track 27 : Rose5\_39, Zaria\_40, Halena\_39, AvadaKedavra\_40, Wyatt2\_40, Acquire49\_40, MAckerman\_40, Silverleaf\_39, Calm\_40, CicholasNage\_40, Tyson\_39
- Track 28 : Enceladus\_39, JoeDirt\_39, Appletree2\_39, OhShagHennessy\_39, Wamburgxpress\_40, Poochiewood\_39, LeBron\_40, DirkDirk\_39, UPIE\_40
- Track 29 : Sheng711\_40, Douge\_39, Chaser\_39
- Track 30 : Bromden\_41
- Track 31 : Aegeus\_45, Baudelaire\_45
- Track 32 : DS6A\_60

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

The start number called the most often in the published annotations is 9, it was called in 30 of the 75 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aegeus\_45, Amgine\_45, Amohnition\_47, Applecrisp\_47, Baudelaire\_45, Bryler\_48, Cain\_48, DarthP\_47, Ekdilam\_44, Ellie\_43, Fefferhead\_45, Hammy\_47, Hurricane\_48, Keshu\_49, Krueger\_51, Lea83\_49, Nergal\_42, November\_47, Pharb\_45, PhelpsODU\_47, Phrank\_48, Pixie\_47, Shadow1\_50, ShedlockHolmes\_48, SirPhilip\_47, Sunflower1121\_51, Syra333\_50, TBond007\_47, Tierra\_48, TribbleTrouble\_45, Unicorn\_47, Ximenita\_51, Yuna\_51,

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

- 

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

- Acquire49\_40, Aminay\_48, Amohnition\_40, Appletree2\_39, AvadaKedavra\_40, Bobquesha\_51, Boilgate\_44, Bromden\_41, Calm\_40, Chancellor\_49, Chaser\_39, Cheetobro\_49, CicholasNage\_40, DS6A\_60, DirkDirk\_39, Douge\_39, Enceladus\_39, Eponine\_51, Fionnbharth\_49, Halena\_39, JF1\_49, JoeDirt\_39, Juliette\_51, Kraw\_50, LeBron\_40, Lebo14\_50, MAckerman\_40, Malthus\_50, MissDaisy\_47, Mitti\_49, OhShagHennessy\_39, OmniCritical\_48, Patt\_46, Poochiewood\_39, Reptar3000\_47, Rose5\_39, Ruthiejr\_50, SamScheppers\_47, Sheng711\_40, Silverleaf\_39, Slarp\_49, Taquito\_49, Tyson\_39, UPIE\_40, Wamburgrxpress\_40, Wintermute\_49, Wyatt2\_40, Y10\_48, Y2\_48, Zaria\_40,

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

Start 6:

- Found in 1 of 83 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amohnition\_40 (K6),

Start 7:

- Found in 24 of 83 ( 28.9% ) of genes in pham
- Manual Annotations of this start: 22 of 75
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acquire49\_40 (L1), Appletree2\_39 (L1), AvadaKedavra\_40 (L1), Bromden\_41 (L4), Calm\_40 (L1), Chaser\_39 (L4), CicholasNage\_40 (L1), DirkDirk\_39 (L1), Douge\_39 (L4), Enceladus\_39 (L1), Halena\_39 (L1), JoeDirt\_39 (L1), LeBron\_40 (L1), MAckerman\_40 (L1), OhShagHennessy\_39 (L1), Poochiewood\_39 (L1), Rose5\_39 (L1), Sheng711\_40 (L4), Silverleaf\_39 (L1), Tyson\_39 (L1), UPIE\_40 (L1), Wamburgrxpress\_40 (L1), Wyatt2\_40 (L1), Zaria\_40 (L1),

Start 8:

- Found in 1 of 83 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 75

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boilgate\_44 (K8),

#### Start 9:

- Found in 33 of 83 ( 39.8% ) of genes in pham
- Manual Annotations of this start: 30 of 75
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aegeus\_45 (L5), Amgine\_45 (K6), Amohnition\_47 (K6), Applecrisp\_47 (K6), Baudelaire\_45 (L5), Bryler\_48 (K6), Cain\_48 (K6), DarthP\_47 (K6), Ekdilam\_44 (K6), Ellie\_43 (K6), Fefferhead\_45 (K6), Hammy\_47 (K6), Hurricane\_48 (K3), Keshu\_49 (K3), Krueger\_51 (K6), Lea83\_49 (K3), Nergal\_42 (AG), November\_47 (K6), Pharb\_45 (K3), PhelpsODU\_47 (K6), Phrank\_48 (K6), Pixie\_47 (K3), Shadow1\_50 (K6), ShedlockHolmes\_48 (K3), SirPhilip\_47 (K6), Sunflower1121\_51 (K6), Syra333\_50 (K6), TBond007\_47 (K3), Tierra\_48 (K6), TripleTrouble\_45 (K3), Unicorn\_47 (K6), Ximenita\_51 (K6), Yuna\_51 (K6),

#### Start 10:

- Found in 22 of 83 ( 26.5% ) of genes in pham
- Manual Annotations of this start: 19 of 75
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bobquesha\_51 (K4), Chancellor\_49 (K4), Cheetobro\_49 (K4), Eponine\_51 (K4), Fionnbharth\_49 (K4), JF1\_49 (K4), Juliette\_51 (K4), Kraw\_50 (K4), Lebo14\_50 (K4), Malthus\_50 (K4), MissDaisy\_47 (K4), Mitti\_49 (K4), OmniCritical\_48 (K4), Patt\_46 (K4), Reptar3000\_47 (K4), Ruthiejr\_50 (K4), SamScheppers\_47 (K4), Slarp\_49 (K4), Taquito\_49 (K4), Wintermute\_49 (K4), Y10\_48 (K4), Y2\_48 (K4),

#### Start 11:

- Found in 1 of 83 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DS6A\_60 (singleton),

#### Start 12:

- Found in 13 of 83 ( 15.7% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Aminay\_48 (K7),

### Summary by clusters:

There are 10 clusters represented in this pham: singleton, AG, K4, K3, L4, L5, K7, K6, L1, K8,

Info for manual annotations of cluster AG:

- Start number 9 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K3:

- Start number 9 was manually annotated 7 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 10 was manually annotated 19 times for cluster K4.

Info for manual annotations of cluster K6:

- Start number 6 was manually annotated 1 time for cluster K6.
- Start number 9 was manually annotated 20 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 12 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 8 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster L1:

- Start number 7 was manually annotated 19 times for cluster L1.

Info for manual annotations of cluster L4:

- Start number 7 was manually annotated 3 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 9 was manually annotated 2 times for cluster L5.

### ***Gene Information:***

Gene: Acquire49\_40 Start: 33342, Stop: 33551, Start Num: 7

Candidate Starts for Acquire49\_40:

(4, 33285), (Start: 7 @33342 has 22 MA's), (24, 33462),

Gene: Aegeus\_45 Start: 37056, Stop: 37259, Start Num: 9

Candidate Starts for Aegeus\_45:

(Start: 9 @37056 has 30 MA's), (14, 37089), (16, 37095), (17, 37119), (21, 37152), (29, 37209), (33, 37254),

Gene: Amgine\_45 Start: 36475, Stop: 36687, Start Num: 9

Candidate Starts for Amgine\_45:

(Start: 9 @36475 has 30 MA's), (27, 36619),

Gene: Aminay\_48 Start: 36910, Stop: 37110, Start Num: 12

Candidate Starts for Aminay\_48:

(1, 36673), (Start: 12 @36910 has 1 MA's), (19, 36982), (27, 37045),

Gene: Amohnition\_47 Start: 36488, Stop: 36700, Start Num: 9

Candidate Starts for Amohnition\_47:

(Start: 9 @36488 has 30 MA's), (27, 36632),

Gene: Amohnition\_40 Start: 32428, Stop: 32189, Start Num: 6

Candidate Starts for Amohnition\_40:

(Start: 6 @32428 has 1 MA's), (14, 32362), (17, 32332), (21, 32299), (28, 32251), (30, 32233), (32, 32200),

Gene: Applecrisp\_47 Start: 35971, Stop: 36183, Start Num: 9

Candidate Starts for Applecrisp\_47:

(Start: 9 @35971 has 30 MA's), (27, 36115),

Gene: Appletree2\_39 Start: 33269, Stop: 33478, Start Num: 7  
Candidate Starts for Appletree2\_39:  
(4, 33227), (Start: 7 @33269 has 22 MA's), (18, 33338), (24, 33389), (27, 33413), (29, 33425),

Gene: AvadaKedavra\_40 Start: 33351, Stop: 33560, Start Num: 7  
Candidate Starts for AvadaKedavra\_40:  
(4, 33294), (Start: 7 @33351 has 22 MA's), (24, 33471),

Gene: Baudelaire\_45 Start: 37056, Stop: 37259, Start Num: 9  
Candidate Starts for Baudelaire\_45:  
(Start: 9 @37056 has 30 MA's), (14, 37089), (16, 37095), (17, 37119), (21, 37152), (29, 37209), (33, 37254),

Gene: Bobquesha\_51 Start: 35789, Stop: 35974, Start Num: 10  
Candidate Starts for Bobquesha\_51:  
(Start: 10 @35789 has 19 MA's), (27, 35909),

Gene: Boilgate\_44 Start: 36561, Stop: 36746, Start Num: 8  
Candidate Starts for Boilgate\_44:  
(Start: 8 @36561 has 1 MA's),

Gene: Bromden\_41 Start: 34169, Stop: 34384, Start Num: 7  
Candidate Starts for Bromden\_41:  
(Start: 7 @34169 has 22 MA's), (23, 34280), (24, 34295), (27, 34319),

Gene: Bryler\_48 Start: 35349, Stop: 35561, Start Num: 9  
Candidate Starts for Bryler\_48:  
(3, 35259), (Start: 9 @35349 has 30 MA's), (Start: 12 @35364 has 1 MA's), (17, 35415), (18, 35418), (27, 35493),

Gene: Cain\_48 Start: 35337, Stop: 35549, Start Num: 9  
Candidate Starts for Cain\_48:  
(3, 35247), (Start: 9 @35337 has 30 MA's), (Start: 12 @35352 has 1 MA's), (17, 35403), (18, 35406), (27, 35481),

Gene: Calm\_40 Start: 33357, Stop: 33566, Start Num: 7  
Candidate Starts for Calm\_40:  
(4, 33300), (Start: 7 @33357 has 22 MA's), (24, 33477),

Gene: Chancellor\_49 Start: 36414, Stop: 36599, Start Num: 10  
Candidate Starts for Chancellor\_49:  
(Start: 10 @36414 has 19 MA's), (16, 36432), (17, 36456), (27, 36534),

Gene: Chaser\_39 Start: 33432, Stop: 33659, Start Num: 7  
Candidate Starts for Chaser\_39:  
(Start: 7 @33432 has 22 MA's), (14, 33474), (20, 33528), (24, 33558), (27, 33582),

Gene: Cheetobro\_49 Start: 36411, Stop: 36596, Start Num: 10  
Candidate Starts for Cheetobro\_49:  
(Start: 10 @36411 has 19 MA's), (16, 36429), (17, 36453), (27, 36531),

Gene: CicholasNage\_40 Start: 33378, Stop: 33587, Start Num: 7

Candidate Starts for CicholasNage\_40:  
(4, 33321), (Start: 7 @33378 has 22 MA's), (24, 33498),

Gene: DS6A\_60 Start: 41278, Stop: 41484, Start Num: 11  
Candidate Starts for DS6A\_60:  
(Start: 11 @41278 has 1 MA's), (13, 41299), (14, 41308), (20, 41365), (21, 41374), (22, 41377), (25, 41401), (26, 41404), (27, 41419), (28, 41422),

Gene: DarthP\_47 Start: 36375, Stop: 36584, Start Num: 9  
Candidate Starts for DarthP\_47:  
(Start: 9 @36375 has 30 MA's), (24, 36492), (27, 36516),

Gene: DirkDirk\_39 Start: 33329, Stop: 33538, Start Num: 7  
Candidate Starts for DirkDirk\_39:  
(4, 33287), (Start: 7 @33329 has 22 MA's), (18, 33398), (24, 33449), (27, 33473), (29, 33485),

Gene: Douge\_39 Start: 33370, Stop: 33597, Start Num: 7  
Candidate Starts for Douge\_39:  
(Start: 7 @33370 has 22 MA's), (14, 33412), (20, 33466), (24, 33496), (27, 33520),

Gene: Ekdilam\_44 Start: 35937, Stop: 36149, Start Num: 9  
Candidate Starts for Ekdilam\_44:  
(Start: 9 @35937 has 30 MA's), (18, 36006), (27, 36081),

Gene: Ellie\_43 Start: 35663, Stop: 35875, Start Num: 9  
Candidate Starts for Ellie\_43:  
(Start: 9 @35663 has 30 MA's), (27, 35807),

Gene: Enceladus\_39 Start: 33312, Stop: 33521, Start Num: 7  
Candidate Starts for Enceladus\_39:  
(4, 33270), (Start: 7 @33312 has 22 MA's), (18, 33381), (24, 33432), (27, 33456), (29, 33468),

Gene: Eponine\_51 Start: 37164, Stop: 37352, Start Num: 10  
Candidate Starts for Eponine\_51:  
(5, 37113), (Start: 10 @37164 has 19 MA's), (16, 37185), (17, 37209), (27, 37287),

Gene: Fefferhead\_45 Start: 35614, Stop: 35826, Start Num: 9  
Candidate Starts for Fefferhead\_45:  
(Start: 9 @35614 has 30 MA's), (27, 35758),

Gene: Fionnbharth\_49 Start: 36562, Stop: 36750, Start Num: 10  
Candidate Starts for Fionnbharth\_49:  
(5, 36511), (Start: 10 @36562 has 19 MA's), (16, 36583), (17, 36607), (27, 36685),

Gene: Halena\_39 Start: 33353, Stop: 33562, Start Num: 7  
Candidate Starts for Halena\_39:  
(4, 33296), (Start: 7 @33353 has 22 MA's), (24, 33473),

Gene: Hammy\_47 Start: 36363, Stop: 36572, Start Num: 9  
Candidate Starts for Hammy\_47:  
(Start: 9 @36363 has 30 MA's), (24, 36480), (27, 36504),

Gene: Hurricane\_48 Start: 36096, Stop: 36308, Start Num: 9

Candidate Starts for Hurricane\_48:

(Start: 9 @36096 has 30 MA's), (24, 36216), (27, 36240),

Gene: JF1\_49 Start: 36482, Stop: 36667, Start Num: 10

Candidate Starts for JF1\_49:

(Start: 10 @36482 has 19 MA's), (16, 36500), (17, 36524), (27, 36602),

Gene: JoeDirt\_39 Start: 33310, Stop: 33519, Start Num: 7

Candidate Starts for JoeDirt\_39:

(4, 33268), (Start: 7 @33310 has 22 MA's), (18, 33379), (24, 33430), (27, 33454), (29, 33466),

Gene: Juliette\_51 Start: 36638, Stop: 36823, Start Num: 10

Candidate Starts for Juliette\_51:

(Start: 10 @36638 has 19 MA's), (16, 36656), (17, 36680), (27, 36758),

Gene: Keshu\_49 Start: 36154, Stop: 36366, Start Num: 9

Candidate Starts for Keshu\_49:

(Start: 9 @36154 has 30 MA's), (24, 36274), (27, 36298),

Gene: Kraw\_50 Start: 36326, Stop: 36511, Start Num: 10

Candidate Starts for Kraw\_50:

(Start: 10 @36326 has 19 MA's), (16, 36344), (17, 36368), (27, 36446),

Gene: Krueger\_51 Start: 36343, Stop: 36555, Start Num: 9

Candidate Starts for Krueger\_51:

(Start: 9 @36343 has 30 MA's), (Start: 12 @36358 has 1 MA's), (17, 36409), (18, 36412), (27, 36487),

Gene: LeBron\_40 Start: 33354, Stop: 33563, Start Num: 7

Candidate Starts for LeBron\_40:

(4, 33312), (Start: 7 @33354 has 22 MA's), (18, 33423), (24, 33474), (27, 33498), (29, 33510),

Gene: Lea83\_49 Start: 36128, Stop: 36340, Start Num: 9

Candidate Starts for Lea83\_49:

(Start: 9 @36128 has 30 MA's), (24, 36248), (27, 36272),

Gene: Lebo14\_50 Start: 36592, Stop: 36777, Start Num: 10

Candidate Starts for Lebo14\_50:

(Start: 10 @36592 has 19 MA's), (16, 36610), (17, 36634), (27, 36712),

Gene: MAckerman\_40 Start: 33347, Stop: 33556, Start Num: 7

Candidate Starts for MAckerman\_40:

(4, 33290), (Start: 7 @33347 has 22 MA's), (24, 33467),

Gene: Malthus\_50 Start: 36326, Stop: 36511, Start Num: 10

Candidate Starts for Malthus\_50:

(Start: 10 @36326 has 19 MA's), (16, 36344), (17, 36368), (27, 36446),

Gene: MissDaisy\_47 Start: 35801, Stop: 35989, Start Num: 10

Candidate Starts for MissDaisy\_47:

(Start: 10 @35801 has 19 MA's), (17, 35846), (27, 35924),

Gene: Mitti\_49 Start: 36502, Stop: 36687, Start Num: 10

Candidate Starts for Mitti\_49:



(Start: 10 @36502 has 19 MA's), (16, 36520), (17, 36544), (27, 36622),

Gene: Nergal\_42 Start: 34081, Stop: 34293, Start Num: 9

Candidate Starts for Nergal\_42:

(Start: 9 @34081 has 30 MA's), (24, 34201), (27, 34225),

Gene: November\_47 Start: 36096, Stop: 36308, Start Num: 9

Candidate Starts for November\_47:

(Start: 9 @36096 has 30 MA's), (33, 36297),

Gene: OhShagHennessy\_39 Start: 33300, Stop: 33509, Start Num: 7

Candidate Starts for OhShagHennessy\_39:

(4, 33258), (Start: 7 @33300 has 22 MA's), (18, 33369), (24, 33420), (27, 33444), (29, 33456),

Gene: OmniCritical\_48 Start: 36311, Stop: 36496, Start Num: 10

Candidate Starts for OmniCritical\_48:

(Start: 10 @36311 has 19 MA's), (16, 36329), (17, 36353), (27, 36431),

Gene: Patt\_46 Start: 35525, Stop: 35713, Start Num: 10

Candidate Starts for Patt\_46:

(1, 35309), (Start: 10 @35525 has 19 MA's), (17, 35570), (27, 35648),

Gene: Pharb\_45 Start: 34846, Stop: 35067, Start Num: 9

Candidate Starts for Pharb\_45:

(3, 34756), (Start: 9 @34846 has 30 MA's), (24, 34966), (27, 34990),

Gene: PhelpsODU\_47 Start: 35370, Stop: 35582, Start Num: 9

Candidate Starts for PhelpsODU\_47:

(3, 35280), (Start: 9 @35370 has 30 MA's), (Start: 12 @35385 has 1 MA's), (17, 35436), (18, 35439), (27, 35514),

Gene: Phrank\_48 Start: 35327, Stop: 35539, Start Num: 9

Candidate Starts for Phrank\_48:

(3, 35237), (Start: 9 @35327 has 30 MA's), (Start: 12 @35342 has 1 MA's), (17, 35393), (18, 35396), (27, 35471),

Gene: Pixie\_47 Start: 35607, Stop: 35819, Start Num: 9

Candidate Starts for Pixie\_47:

(Start: 9 @35607 has 30 MA's), (15, 35646), (24, 35727), (27, 35751),

Gene: Poochiewood\_39 Start: 33328, Stop: 33537, Start Num: 7

Candidate Starts for Poochiewood\_39:

(4, 33286), (Start: 7 @33328 has 22 MA's), (18, 33397), (24, 33448), (27, 33472), (29, 33484),

Gene: Reptar3000\_47 Start: 35516, Stop: 35701, Start Num: 10

Candidate Starts for Reptar3000\_47:

(Start: 10 @35516 has 19 MA's), (27, 35636),

Gene: Rose5\_39 Start: 33342, Stop: 33551, Start Num: 7

Candidate Starts for Rose5\_39:

(4, 33285), (Start: 7 @33342 has 22 MA's), (24, 33462),

Gene: Ruthiejr\_50 Start: 36376, Stop: 36561, Start Num: 10

Candidate Starts for Ruthiejr\_50:

(Start: 10 @36376 has 19 MA's), (16, 36394), (17, 36418), (27, 36496),

Gene: SamScheppers\_47 Start: 36805, Stop: 36990, Start Num: 10

Candidate Starts for SamScheppers\_47:

(Start: 10 @36805 has 19 MA's), (16, 36823), (17, 36847), (27, 36925),

Gene: Shadow1\_50 Start: 36488, Stop: 36700, Start Num: 9

Candidate Starts for Shadow1\_50:

(Start: 9 @36488 has 30 MA's), (Start: 12 @36503 has 1 MA's), (27, 36632), (33, 36689),

Gene: ShedlockHolmes\_48 Start: 36132, Stop: 36344, Start Num: 9

Candidate Starts for ShedlockHolmes\_48:

(Start: 9 @36132 has 30 MA's), (24, 36252), (27, 36276),

Gene: Sheng711\_40 Start: 33476, Stop: 33703, Start Num: 7

Candidate Starts for Sheng711\_40:

(Start: 7 @33476 has 22 MA's), (14, 33518), (20, 33572), (24, 33602), (27, 33626),

Gene: Silverleaf\_39 Start: 33342, Stop: 33551, Start Num: 7

Candidate Starts for Silverleaf\_39:

(4, 33285), (Start: 7 @33342 has 22 MA's), (24, 33462),

Gene: SirPhilip\_47 Start: 36707, Stop: 36919, Start Num: 9

Candidate Starts for SirPhilip\_47:

(2, 36575), (Start: 9 @36707 has 30 MA's), (18, 36776), (27, 36851),

Gene: Slarp\_49 Start: 36414, Stop: 36599, Start Num: 10

Candidate Starts for Slarp\_49:

(Start: 10 @36414 has 19 MA's), (16, 36432), (17, 36456), (27, 36534),

Gene: Sunflower1121\_51 Start: 36589, Stop: 36801, Start Num: 9

Candidate Starts for Sunflower1121\_51:

(Start: 9 @36589 has 30 MA's), (Start: 12 @36604 has 1 MA's), (27, 36733), (33, 36790),

Gene: Syra333\_50 Start: 36256, Stop: 36468, Start Num: 9

Candidate Starts for Syra333\_50:

(Start: 9 @36256 has 30 MA's), (Start: 12 @36271 has 1 MA's), (27, 36400), (33, 36457),

Gene: TBond007\_47 Start: 35606, Stop: 35818, Start Num: 9

Candidate Starts for TBond007\_47:

(Start: 9 @35606 has 30 MA's), (15, 35645), (24, 35726), (27, 35750),

Gene: Taquito\_49 Start: 36661, Stop: 36846, Start Num: 10

Candidate Starts for Taquito\_49:

(Start: 10 @36661 has 19 MA's), (16, 36679), (17, 36703), (27, 36781),

Gene: Tierra\_48 Start: 36138, Stop: 36350, Start Num: 9

Candidate Starts for Tierra\_48:

(3, 36048), (Start: 9 @36138 has 30 MA's), (Start: 12 @36153 has 1 MA's), (17, 36204), (18, 36207), (27, 36282),

Gene: TribelTrouble\_45 Start: 35497, Stop: 35709, Start Num: 9

Candidate Starts for TribelTrouble\_45:  
(Start: 9 @35497 has 30 MA's), (Start: 12 @35512 has 1 MA's), (27, 35641),

Gene: Tyson\_39 Start: 33343, Stop: 33552, Start Num: 7  
Candidate Starts for Tyson\_39:  
(4, 33286), (Start: 7 @33343 has 22 MA's), (24, 33463),

Gene: UPIE\_40 Start: 33326, Stop: 33535, Start Num: 7  
Candidate Starts for UPIE\_40:  
(4, 33284), (Start: 7 @33326 has 22 MA's), (18, 33395), (24, 33446), (27, 33470), (29, 33482),

Gene: Unicorn\_47 Start: 35370, Stop: 35582, Start Num: 9  
Candidate Starts for Unicorn\_47:  
(3, 35280), (Start: 9 @35370 has 30 MA's), (Start: 12 @35385 has 1 MA's), (17, 35436), (18, 35439),  
(27, 35514),

Gene: Wamburgrxpress\_40 Start: 33341, Stop: 33550, Start Num: 7  
Candidate Starts for Wamburgrxpress\_40:  
(4, 33299), (Start: 7 @33341 has 22 MA's), (18, 33410), (24, 33461), (27, 33485), (29, 33497),

Gene: Wintermute\_49 Start: 36563, Stop: 36748, Start Num: 10  
Candidate Starts for Wintermute\_49:  
(Start: 10 @36563 has 19 MA's), (16, 36581), (17, 36605), (27, 36683),

Gene: Wyatt2\_40 Start: 33342, Stop: 33551, Start Num: 7  
Candidate Starts for Wyatt2\_40:  
(4, 33285), (Start: 7 @33342 has 22 MA's), (24, 33462),

Gene: Ximenita\_51 Start: 36442, Stop: 36654, Start Num: 9  
Candidate Starts for Ximenita\_51:  
(Start: 9 @36442 has 30 MA's), (Start: 12 @36457 has 1 MA's), (27, 36586), (31, 36628), (33, 36643),

Gene: Y10\_48 Start: 36482, Stop: 36667, Start Num: 10  
Candidate Starts for Y10\_48:  
(Start: 10 @36482 has 19 MA's), (16, 36500), (17, 36524), (27, 36602),

Gene: Y2\_48 Start: 36482, Stop: 36667, Start Num: 10  
Candidate Starts for Y2\_48:  
(Start: 10 @36482 has 19 MA's), (16, 36500), (17, 36524), (27, 36602),

Gene: Yuna\_51 Start: 37201, Stop: 37413, Start Num: 9  
Candidate Starts for Yuna\_51:  
(Start: 9 @37201 has 30 MA's), (27, 37345), (33, 37402),

Gene: Zaria\_40 Start: 33357, Stop: 33566, Start Num: 7  
Candidate Starts for Zaria\_40:  
(4, 33300), (Start: 7 @33357 has 22 MA's), (24, 33477),