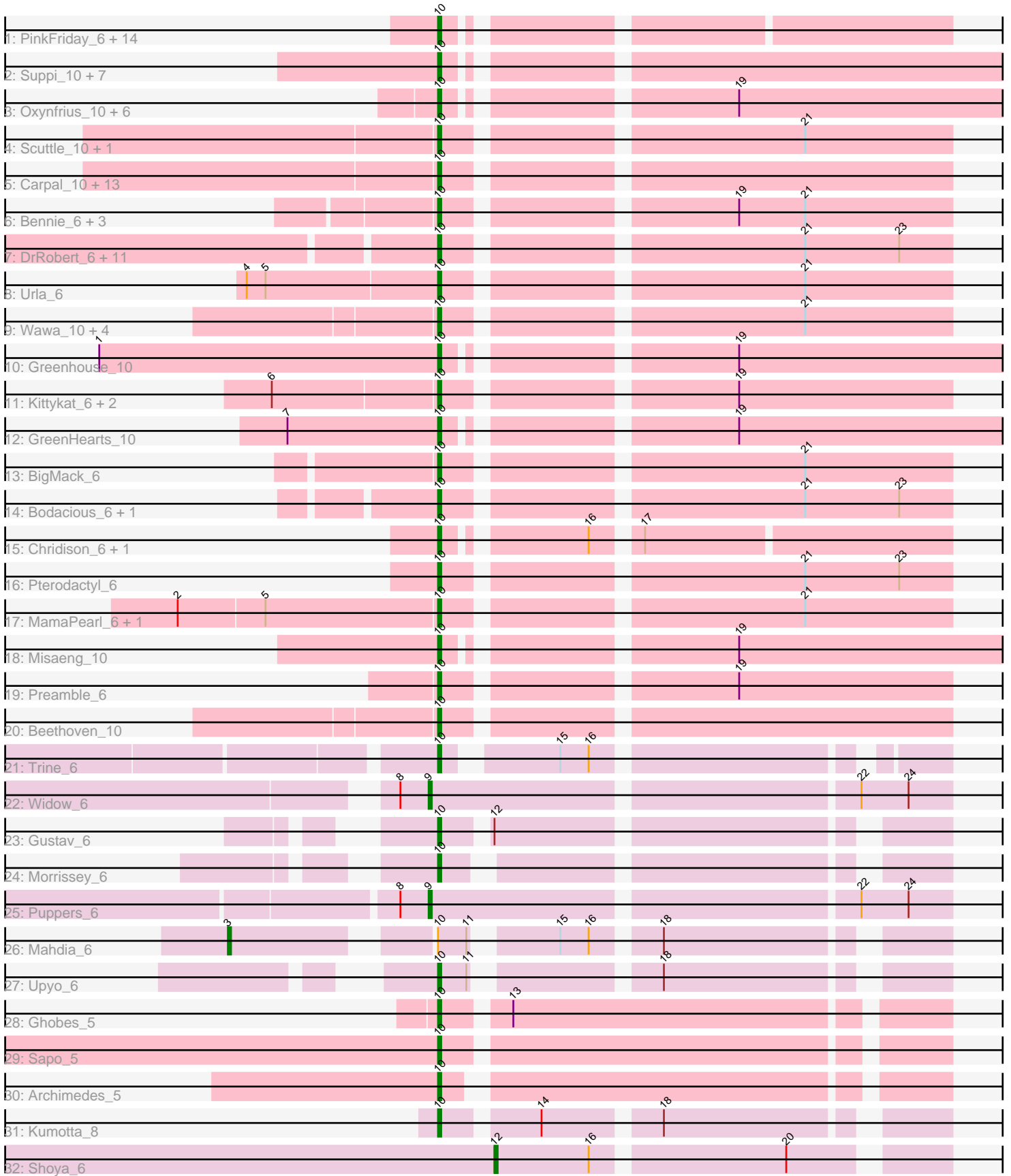


Pham 163504



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 163504 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163504 has 96 members, 4 are drafts.

Phages represented in each track:

- Track 1 : PinkFriday\_6, Maria1952\_6, Riovina\_6, Temper16\_6, KingBob\_6, Vulture\_6, OMalley\_6, Eunoia\_6, Pumancara\_6, HunterDalle\_6, Sergei\_6, Aledel\_6, Supakev\_6, Daiboju\_6, Herb\_6
- Track 2 : Suppi\_10, Canowicakte\_10, Wayne\_10, Vallejo\_10, Litotes\_10, PartyCup\_10, CallieOMalley\_10, AppleCider\_10
- Track 3 : Oxyfrius\_10, Lakshmi\_10, Albanese\_10, Joann\_10, RcigaStruga\_10, Huntingdon\_10, Nubia\_10
- Track 4 : Scuttle\_10, BrotherBLo\_10
- Track 5 : Carpal\_10, RAP15\_10, Potatoes\_10, Cholula\_10, Fluke\_10, Glenn\_10, Jumboset\_10, Savage2526\_10, Rozby\_10, TattModd\_10, MrGloopy\_10, Riverdale\_10, Immaculata\_10, MeganNoll\_10
- Track 6 : Bennie\_6, HeadNerd\_6, Moki\_6, Huckleberry\_6
- Track 7 : DrRobert\_6, Lennox\_6, Christian\_6, Nancia\_6, Makoto\_6, Lucy\_6, PitaDog\_6, WonderBoy\_6, CristinaYang\_6, LilStuart\_6, Lasagna\_6, OurGirlNessie\_6
- Track 8 : Urla\_6
- Track 9 : Wawa\_10, Korra\_10, Dino\_10, Kalizoi\_10, Zorro\_10
- Track 10 : Greenhouse\_10
- Track 11 : Kittykat\_6, Gisselle\_6, DreamTeam\_6
- Track 12 : GreenHearts\_10
- Track 13 : BigMack\_6
- Track 14 : Bodacious\_6, ChewChew\_6
- Track 15 : Chridison\_6, AustinPowers\_6
- Track 16 : Pterodactyl\_6
- Track 17 : MamaPearl\_6, EstebanJulior\_6
- Track 18 : Misaeng\_10
- Track 19 : Preamble\_6
- Track 20 : Beethoven\_10
- Track 21 : Trine\_6
- Track 22 : Widow\_6
- Track 23 : Gustav\_6
- Track 24 : Morrissey\_6
- Track 25 : Puppies\_6
- Track 26 : Mahdia\_6
- Track 27 : Upyo\_6
- Track 28 : Ghobes\_5
- Track 29 : Sapo\_5
- Track 30 : Archimedes\_5

- Track 31 : Kumotta\_8
- Track 32 : Shoya\_6

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

The start number called the most often in the published annotations is 10, it was called in 88 of the 92 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albanese\_10, Aledel\_6, AppleCider\_10, Archimedes\_5, AustinPowers\_6, Beethoven\_10, Bennie\_6, BigMack\_6, Bodacious\_6, BrotherBLo\_10, CallieOMalley\_10, Canowicakte\_10, Carpal\_10, ChewChew\_6, Cholula\_10, Chridison\_6, Christian\_6, CristinaYang\_6, Daiboju\_6, Dino\_10, DrRobert\_6, DreamTeam\_6, EstebanJulior\_6, Eunoia\_6, Fluke\_10, Ghobes\_5, Gisselle\_6, Glenn\_10, GreenHearts\_10, Greenhouse\_10, Gustav\_6, HeadNerd\_6, Herb\_6, Huckleberry\_6, HunterDalle\_6, Huntingdon\_10, Immaculata\_10, Joann\_10, Jumboset\_10, Kalizoi\_10, KingBob\_6, Kittykat\_6, Korra\_10, Kumotta\_8, Lakshmi\_10, Lasagna\_6, Lennox\_6, LilStuart\_6, Litotes\_10, Lucy\_6, Makoto\_6, MamaPearl\_6, Maria1952\_6, MeganNoll\_10, Misaeng\_10, Moki\_6, Morrissey\_6, MrGloopy\_10, Nancia\_6, Nubia\_10, OMalley\_6, OurGirlNessie\_6, Oxynfrius\_10, PartyCup\_10, PinkFriday\_6, PitaDog\_6, Potatoes\_10, Preamble\_6, Pterodactyl\_6, Pumancara\_6, RAP15\_10, RcigaStruga\_10, Riovina\_6, Riverdale\_10, Rozby\_10, Sapo\_5, Savage2526\_10, Scuttle\_10, Sergei\_6, Supakev\_6, Suppi\_10, TattModd\_10, Temper16\_6, Trine\_6, Upyo\_6, Urla\_6, Vallejo\_10, Vulture\_6, Wawa\_10, Wayne\_10, WonderBoy\_6, Zorro\_10,

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

- Mahdia\_6,

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

- Puppets\_6, Shoya\_6, Widow\_6,

**Summary by start number:**

Start 3:

- Found in 1 of 96 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mahdia\_6 (CD),

Start 9:

- Found in 2 of 96 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 2 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Puppets\_6 (CD), Widow\_6 (CD),

Start 10:

- Found in 93 of 96 ( 96.9% ) of genes in pham
- Manual Annotations of this start: 88 of 92
- Called 98.9% of time when present

- Phage (with cluster) where this start called: Albanese\_10 (AK), Aledel\_6 (AK), AppleCider\_10 (AK), Archimedes\_5 (DA), AustinPowers\_6 (AK), Beethoven\_10 (AK), Bennie\_6 (AK), BigMack\_6 (AK), Bodacious\_6 (AK), BrotherBLo\_10 (AK), CallieOMalley\_10 (AK), Canowicakte\_10 (AK), Carpal\_10 (AK), ChewChew\_6 (AK), Cholula\_10 (AK), Chridison\_6 (AK), Christian\_6 (AK), CristinaYang\_6 (AK), Daiboju\_6 (AK), Dino\_10 (AK), DrRobert\_6 (AK), DreamTeam\_6 (AK), EstebanJulior\_6 (AK), Eunoia\_6 (AK), Fluke\_10 (AK), Ghobes\_5 (DA), Gisselle\_6 (AK), Glenn\_10 (AK), GreenHearts\_10 (AK), Greenhouse\_10 (AK), Gustav\_6 (CD), HeadNerd\_6 (AK), Herb\_6 (AK), Huckleberry\_6 (AK), HunterDalle\_6 (AK), Huntingdon\_10 (AK), Immaculata\_10 (AK), Joann\_10 (AK), Jumboset\_10 (AK), Kalizoi\_10 (AK), KingBob\_6 (AK), Kittykat\_6 (AK), Korra\_10 (AK), Kumotta\_8 (FB), Lakshmi\_10 (AK), Lasagna\_6 (AK), Lennox\_6 (AK), LilStuart\_6 (AK), Litotes\_10 (AK), Lucy\_6 (AK), Makoto\_6 (AK), MamaPearl\_6 (AK), Maria1952\_6 (AK), MeganNoll\_10 (AK), Misaeng\_10 (AK), Moki\_6 (AK), Morrissey\_6 (CD), MrGloopy\_10 (AK), Nancia\_6 (AK), Nubia\_10 (AK), OMalley\_6 (AK), OurGirlNessie\_6 (AK), Oxynfrius\_10 (AK), PartyCup\_10 (AK), PinkFriday\_6 (AK), PitaDog\_6 (AK), Potatoes\_10 (AK), Preamble\_6 (AK), Pterodactyl\_6 (AK), Pumancara\_6 (AK), RAP15\_10 (AK), RcigaStruga\_10 (AK), Riovina\_6 (AK), Riverdale\_10 (AK), Rozby\_10 (AK), Sapo\_5 (DA), Savage2526\_10 (AK), Scuttle\_10 (AK), Sergei\_6 (AK), Supakev\_6 (AK), Suppi\_10 (AK), TattModd\_10 (AK), Temper16\_6 (AK), Trine\_6 (CD), Upyo\_6 (CD), Urla\_6 (AK), Vallejo\_10 (AK), Vulture\_6 (AK), Wawa\_10 (AK), Wayne\_10 (AK), WonderBoy\_6 (AK), Zorro\_10 (AK),

Start 12:

- Found in 2 of 96 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Shoya\_6 (FB),

### **Summary by clusters:**

There are 4 clusters represented in this pham: AK, DA, FB, CD,

Info for manual annotations of cluster AK:

- Start number 10 was manually annotated 80 times for cluster AK.

Info for manual annotations of cluster CD:

- Start number 3 was manually annotated 1 time for cluster CD.
- Start number 9 was manually annotated 2 times for cluster CD.
- Start number 10 was manually annotated 4 times for cluster CD.

Info for manual annotations of cluster DA:

- Start number 10 was manually annotated 3 times for cluster DA.

Info for manual annotations of cluster FB:

- Start number 10 was manually annotated 1 time for cluster FB.
- Start number 12 was manually annotated 1 time for cluster FB.

### **Gene Information:**

Gene: Albanese\_10 Start: 9061, Stop: 9255, Start Num: 10

Candidate Starts for Albanese\_10:  
(Start: 10 @9061 has 88 MA's), (19, 9142),

Gene: Aledel\_6 Start: 6159, Stop: 6332, Start Num: 10  
Candidate Starts for Aledel\_6:  
(Start: 10 @6159 has 88 MA's),

Gene: AppleCider\_10 Start: 9015, Stop: 9209, Start Num: 10  
Candidate Starts for AppleCider\_10:  
(Start: 10 @9015 has 88 MA's),

Gene: Archimedes\_5 Start: 5220, Stop: 5387, Start Num: 10  
Candidate Starts for Archimedes\_5:  
(Start: 10 @5220 has 88 MA's),

Gene: AustinPowers\_6 Start: 6160, Stop: 6333, Start Num: 10  
Candidate Starts for AustinPowers\_6:  
(Start: 10 @6160 has 88 MA's), (16, 6199), (17, 6211),

Gene: Beethoven\_10 Start: 8995, Stop: 9174, Start Num: 10  
Candidate Starts for Beethoven\_10:  
(Start: 10 @8995 has 88 MA's),

Gene: Bennie\_6 Start: 6140, Stop: 6319, Start Num: 10  
Candidate Starts for Bennie\_6:  
(Start: 10 @6140 has 88 MA's), (19, 6224), (21, 6245),

Gene: BigMack\_6 Start: 6140, Stop: 6319, Start Num: 10  
Candidate Starts for BigMack\_6:  
(Start: 10 @6140 has 88 MA's), (21, 6245),

Gene: Bodacious\_6 Start: 6138, Stop: 6317, Start Num: 10  
Candidate Starts for Bodacious\_6:  
(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: BrotherBLo\_10 Start: 9002, Stop: 9181, Start Num: 10  
Candidate Starts for BrotherBLo\_10:  
(Start: 10 @9002 has 88 MA's), (21, 9107),

Gene: CallieOMalley\_10 Start: 9015, Stop: 9209, Start Num: 10  
Candidate Starts for CallieOMalley\_10:  
(Start: 10 @9015 has 88 MA's),

Gene: Canowicakte\_10 Start: 9050, Stop: 9244, Start Num: 10  
Candidate Starts for Canowicakte\_10:  
(Start: 10 @9050 has 88 MA's),

Gene: Carpal\_10 Start: 9002, Stop: 9181, Start Num: 10  
Candidate Starts for Carpal\_10:  
(Start: 10 @9002 has 88 MA's),

Gene: ChewChew\_6 Start: 6137, Stop: 6316, Start Num: 10  
Candidate Starts for ChewChew\_6:

(Start: 10 @6137 has 88 MA's), (21, 6242), (23, 6272),

Gene: Cholula\_10 Start: 9047, Stop: 9226, Start Num: 10

Candidate Starts for Cholula\_10:

(Start: 10 @9047 has 88 MA's),

Gene: Chridison\_6 Start: 6160, Stop: 6333, Start Num: 10

Candidate Starts for Chridison\_6:

(Start: 10 @6160 has 88 MA's), (16, 6199), (17, 6211),

Gene: Christian\_6 Start: 6138, Stop: 6317, Start Num: 10

Candidate Starts for Christian\_6:

(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: CristinaYang\_6 Start: 6138, Stop: 6317, Start Num: 10

Candidate Starts for CristinaYang\_6:

(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: Daiboju\_6 Start: 6161, Stop: 6334, Start Num: 10

Candidate Starts for Daiboju\_6:

(Start: 10 @6161 has 88 MA's),

Gene: Dino\_10 Start: 9001, Stop: 9180, Start Num: 10

Candidate Starts for Dino\_10:

(Start: 10 @9001 has 88 MA's), (21, 9106),

Gene: DrRobert\_6 Start: 6138, Stop: 6317, Start Num: 10

Candidate Starts for DrRobert\_6:

(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: DreamTeam\_6 Start: 6184, Stop: 6363, Start Num: 10

Candidate Starts for DreamTeam\_6:

(6, 6133), (Start: 10 @6184 has 88 MA's), (19, 6268),

Gene: EstebanJulior\_6 Start: 6182, Stop: 6361, Start Num: 10

Candidate Starts for EstebanJulior\_6:

(2, 6101), (5, 6128), (Start: 10 @6182 has 88 MA's), (21, 6287),

Gene: Eunoia\_6 Start: 6159, Stop: 6332, Start Num: 10

Candidate Starts for Eunoia\_6:

(Start: 10 @6159 has 88 MA's),

Gene: Fluke\_10 Start: 9043, Stop: 9222, Start Num: 10

Candidate Starts for Fluke\_10:

(Start: 10 @9043 has 88 MA's),

Gene: Ghobes\_5 Start: 5267, Stop: 5443, Start Num: 10

Candidate Starts for Ghobes\_5:

(Start: 10 @5267 has 88 MA's), (13, 5285),

Gene: Gisselle\_6 Start: 6184, Stop: 6363, Start Num: 10

Candidate Starts for Gisselle\_6:

(6, 6133), (Start: 10 @6184 has 88 MA's), (19, 6268),

Gene: Glenn\_10 Start: 9053, Stop: 9232, Start Num: 10  
Candidate Starts for Glenn\_10:  
(Start: 10 @9053 has 88 MA's),

Gene: GreenHearts\_10 Start: 9107, Stop: 9301, Start Num: 10  
Candidate Starts for GreenHearts\_10:  
(7, 9059), (Start: 10 @9107 has 88 MA's), (19, 9188),

Gene: Greenhouse\_10 Start: 9032, Stop: 9226, Start Num: 10  
Candidate Starts for Greenhouse\_10:  
(1, 8924), (Start: 10 @9032 has 88 MA's), (19, 9113),

Gene: Gustav\_6 Start: 5862, Stop: 6029, Start Num: 10  
Candidate Starts for Gustav\_6:  
(Start: 10 @5862 has 88 MA's), (Start: 12 @5874 has 1 MA's),

Gene: HeadNerd\_6 Start: 6140, Stop: 6319, Start Num: 10  
Candidate Starts for HeadNerd\_6:  
(Start: 10 @6140 has 88 MA's), (19, 6224), (21, 6245),

Gene: Herb\_6 Start: 6161, Stop: 6334, Start Num: 10  
Candidate Starts for Herb\_6:  
(Start: 10 @6161 has 88 MA's),

Gene: Huckleberry\_6 Start: 6140, Stop: 6319, Start Num: 10  
Candidate Starts for Huckleberry\_6:  
(Start: 10 @6140 has 88 MA's), (19, 6224), (21, 6245),

Gene: HunterDalle\_6 Start: 6159, Stop: 6332, Start Num: 10  
Candidate Starts for HunterDalle\_6:  
(Start: 10 @6159 has 88 MA's),

Gene: Huntingdon\_10 Start: 9018, Stop: 9212, Start Num: 10  
Candidate Starts for Huntingdon\_10:  
(Start: 10 @9018 has 88 MA's), (19, 9099),

Gene: Immaculata\_10 Start: 9047, Stop: 9226, Start Num: 10  
Candidate Starts for Immaculata\_10:  
(Start: 10 @9047 has 88 MA's),

Gene: Joann\_10 Start: 9010, Stop: 9204, Start Num: 10  
Candidate Starts for Joann\_10:  
(Start: 10 @9010 has 88 MA's), (19, 9091),

Gene: Jumboset\_10 Start: 8996, Stop: 9175, Start Num: 10  
Candidate Starts for Jumboset\_10:  
(Start: 10 @8996 has 88 MA's),

Gene: Kalizoi\_10 Start: 8995, Stop: 9174, Start Num: 10  
Candidate Starts for Kalizoi\_10:  
(Start: 10 @8995 has 88 MA's), (21, 9100),

Gene: KingBob\_6 Start: 6161, Stop: 6334, Start Num: 10  
Candidate Starts for KingBob\_6:  
(Start: 10 @6161 has 88 MA's),

Gene: Kittykat\_6 Start: 6181, Stop: 6360, Start Num: 10  
Candidate Starts for Kittykat\_6:  
(6, 6130), (Start: 10 @6181 has 88 MA's), (19, 6265),

Gene: Korra\_10 Start: 9001, Stop: 9180, Start Num: 10  
Candidate Starts for Korra\_10:  
(Start: 10 @9001 has 88 MA's), (21, 9106),

Gene: Kumotta\_8 Start: 7171, Stop: 7326, Start Num: 10  
Candidate Starts for Kumotta\_8:  
(Start: 10 @7171 has 88 MA's), (14, 7198), (18, 7231),

Gene: Lakshmi\_10 Start: 9037, Stop: 9231, Start Num: 10  
Candidate Starts for Lakshmi\_10:  
(Start: 10 @9037 has 88 MA's), (19, 9118),

Gene: Lasagna\_6 Start: 6138, Stop: 6317, Start Num: 10  
Candidate Starts for Lasagna\_6:  
(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: Lennox\_6 Start: 6138, Stop: 6317, Start Num: 10  
Candidate Starts for Lennox\_6:  
(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: LilStuart\_6 Start: 6138, Stop: 6317, Start Num: 10  
Candidate Starts for LilStuart\_6:  
(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: Litotes\_10 Start: 9003, Stop: 9197, Start Num: 10  
Candidate Starts for Litotes\_10:  
(Start: 10 @9003 has 88 MA's),

Gene: Lucy\_6 Start: 6129, Stop: 6308, Start Num: 10  
Candidate Starts for Lucy\_6:  
(Start: 10 @6129 has 88 MA's), (21, 6234), (23, 6264),

Gene: Mahdia\_6 Start: 5826, Stop: 6041, Start Num: 3  
Candidate Starts for Mahdia\_6:  
(Start: 3 @5826 has 1 MA's), (Start: 10 @5880 has 88 MA's), (11, 5889), (15, 5910), (16, 5919), (18, 5937),

Gene: Makoto\_6 Start: 6138, Stop: 6317, Start Num: 10  
Candidate Starts for Makoto\_6:  
(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: MamaPearl\_6 Start: 6182, Stop: 6361, Start Num: 10  
Candidate Starts for MamaPearl\_6:  
(2, 6101), (5, 6128), (Start: 10 @6182 has 88 MA's), (21, 6287),



Gene: Maria1952\_6 Start: 6161, Stop: 6334, Start Num: 10  
Candidate Starts for Maria1952\_6:  
(Start: 10 @6161 has 88 MA's),

Gene: MeganNoll\_10 Start: 9053, Stop: 9232, Start Num: 10  
Candidate Starts for MeganNoll\_10:  
(Start: 10 @9053 has 88 MA's),

Gene: Misaeng\_10 Start: 9083, Stop: 9277, Start Num: 10  
Candidate Starts for Misaeng\_10:  
(Start: 10 @9083 has 88 MA's), (19, 9164),

Gene: Moki\_6 Start: 6140, Stop: 6319, Start Num: 10  
Candidate Starts for Moki\_6:  
(Start: 10 @6140 has 88 MA's), (19, 6224), (21, 6245),

Gene: Morrissey\_6 Start: 5871, Stop: 6029, Start Num: 10  
Candidate Starts for Morrissey\_6:  
(Start: 10 @5871 has 88 MA's),

Gene: MrGloopy\_10 Start: 8986, Stop: 9165, Start Num: 10  
Candidate Starts for MrGloopy\_10:  
(Start: 10 @8986 has 88 MA's),

Gene: Nancia\_6 Start: 6138, Stop: 6317, Start Num: 10  
Candidate Starts for Nancia\_6:  
(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: Nubia\_10 Start: 8997, Stop: 9191, Start Num: 10  
Candidate Starts for Nubia\_10:  
(Start: 10 @8997 has 88 MA's), (19, 9078),

Gene: OMalley\_6 Start: 6159, Stop: 6332, Start Num: 10  
Candidate Starts for OMalley\_6:  
(Start: 10 @6159 has 88 MA's),

Gene: OurGirlNessie\_6 Start: 6129, Stop: 6308, Start Num: 10  
Candidate Starts for OurGirlNessie\_6:  
(Start: 10 @6129 has 88 MA's), (21, 6234), (23, 6264),

Gene: Oxynfrius\_10 Start: 9010, Stop: 9204, Start Num: 10  
Candidate Starts for Oxynfrius\_10:  
(Start: 10 @9010 has 88 MA's), (19, 9091),

Gene: PartyCup\_10 Start: 9050, Stop: 9244, Start Num: 10  
Candidate Starts for PartyCup\_10:  
(Start: 10 @9050 has 88 MA's),

Gene: PinkFriday\_6 Start: 6162, Stop: 6335, Start Num: 10  
Candidate Starts for PinkFriday\_6:  
(Start: 10 @6162 has 88 MA's),

Gene: PitaDog\_6 Start: 6129, Stop: 6308, Start Num: 10

Candidate Starts for PitaDog\_6:  
(Start: 10 @6129 has 88 MA's), (21, 6234), (23, 6264),

Gene: Potatoes\_10 Start: 9047, Stop: 9226, Start Num: 10  
Candidate Starts for Potatoes\_10:  
(Start: 10 @9047 has 88 MA's),

Gene: Preamble\_6 Start: 6139, Stop: 6318, Start Num: 10  
Candidate Starts for Preamble\_6:  
(Start: 10 @6139 has 88 MA's), (19, 6223),

Gene: Pterodactyl\_6 Start: 6130, Stop: 6309, Start Num: 10  
Candidate Starts for Pterodactyl\_6:  
(Start: 10 @6130 has 88 MA's), (21, 6235), (23, 6265),

Gene: Pumancara\_6 Start: 6161, Stop: 6334, Start Num: 10  
Candidate Starts for Pumancara\_6:  
(Start: 10 @6161 has 88 MA's),

Gene: Puppies\_6 Start: 5783, Stop: 5965, Start Num: 9  
Candidate Starts for Puppies\_6:  
(8, 5774), (Start: 9 @5783 has 2 MA's), (22, 5912), (24, 5927),

Gene: RAP15\_10 Start: 9053, Stop: 9232, Start Num: 10  
Candidate Starts for RAP15\_10:  
(Start: 10 @9053 has 88 MA's),

Gene: RcigaStruga\_10 Start: 9018, Stop: 9212, Start Num: 10  
Candidate Starts for RcigaStruga\_10:  
(Start: 10 @9018 has 88 MA's), (19, 9099),

Gene: Riovina\_6 Start: 6159, Stop: 6332, Start Num: 10  
Candidate Starts for Riovina\_6:  
(Start: 10 @6159 has 88 MA's),

Gene: Riverdale\_10 Start: 8984, Stop: 9163, Start Num: 10  
Candidate Starts for Riverdale\_10:  
(Start: 10 @8984 has 88 MA's),

Gene: Rozby\_10 Start: 8984, Stop: 9163, Start Num: 10  
Candidate Starts for Rozby\_10:  
(Start: 10 @8984 has 88 MA's),

Gene: Sapo\_5 Start: 5262, Stop: 5438, Start Num: 10  
Candidate Starts for Sapo\_5:  
(Start: 10 @5262 has 88 MA's),

Gene: Savage2526\_10 Start: 9047, Stop: 9226, Start Num: 10  
Candidate Starts for Savage2526\_10:  
(Start: 10 @9047 has 88 MA's),

Gene: Scuttle\_10 Start: 9053, Stop: 9232, Start Num: 10  
Candidate Starts for Scuttle\_10:

(Start: 10 @9053 has 88 MA's), (21, 9158),

Gene: Sergei\_6 Start: 6161, Stop: 6334, Start Num: 10  
Candidate Starts for Sergei\_6:  
(Start: 10 @6161 has 88 MA's),

Gene: Shoya\_6 Start: 5816, Stop: 5962, Start Num: 12  
Candidate Starts for Shoya\_6:  
(Start: 12 @5816 has 1 MA's), (16, 5846), (20, 5903),

Gene: Supakev\_6 Start: 6161, Stop: 6334, Start Num: 10  
Candidate Starts for Supakev\_6:  
(Start: 10 @6161 has 88 MA's),

Gene: Suppi\_10 Start: 9050, Stop: 9244, Start Num: 10  
Candidate Starts for Suppi\_10:  
(Start: 10 @9050 has 88 MA's),

Gene: TattModd\_10 Start: 9047, Stop: 9226, Start Num: 10  
Candidate Starts for TattModd\_10:  
(Start: 10 @9047 has 88 MA's),

Gene: Temper16\_6 Start: 6161, Stop: 6334, Start Num: 10  
Candidate Starts for Temper16\_6:  
(Start: 10 @6161 has 88 MA's),

Gene: Trine\_6 Start: 5823, Stop: 5981, Start Num: 10  
Candidate Starts for Trine\_6:  
(Start: 10 @5823 has 88 MA's), (15, 5853), (16, 5862),

Gene: Upyo\_6 Start: 5831, Stop: 5995, Start Num: 10  
Candidate Starts for Upyo\_6:  
(Start: 10 @5831 has 88 MA's), (11, 5840), (18, 5888),

Gene: Urla\_6 Start: 6185, Stop: 6364, Start Num: 10  
Candidate Starts for Urla\_6:  
(4, 6125), (5, 6131), (Start: 10 @6185 has 88 MA's), (21, 6290),

Gene: Vallejo\_10 Start: 8985, Stop: 9164, Start Num: 10  
Candidate Starts for Vallejo\_10:  
(Start: 10 @8985 has 88 MA's),

Gene: Vulture\_6 Start: 6159, Stop: 6332, Start Num: 10  
Candidate Starts for Vulture\_6:  
(Start: 10 @6159 has 88 MA's),

Gene: Wawa\_10 Start: 9022, Stop: 9201, Start Num: 10  
Candidate Starts for Wawa\_10:  
(Start: 10 @9022 has 88 MA's), (21, 9127),

Gene: Wayne\_10 Start: 9096, Stop: 9290, Start Num: 10  
Candidate Starts for Wayne\_10:  
(Start: 10 @9096 has 88 MA's),

Gene: Widow\_6 Start: 5774, Stop: 5956, Start Num: 9  
Candidate Starts for Widow\_6:  
(8, 5765), (Start: 9 @5774 has 2 MA's), (22, 5903), (24, 5918),

Gene: WonderBoy\_6 Start: 6138, Stop: 6317, Start Num: 10  
Candidate Starts for WonderBoy\_6:  
(Start: 10 @6138 has 88 MA's), (21, 6243), (23, 6273),

Gene: Zorro\_10 Start: 9001, Stop: 9180, Start Num: 10  
Candidate Starts for Zorro\_10:  
(Start: 10 @9001 has 88 MA's), (21, 9106),