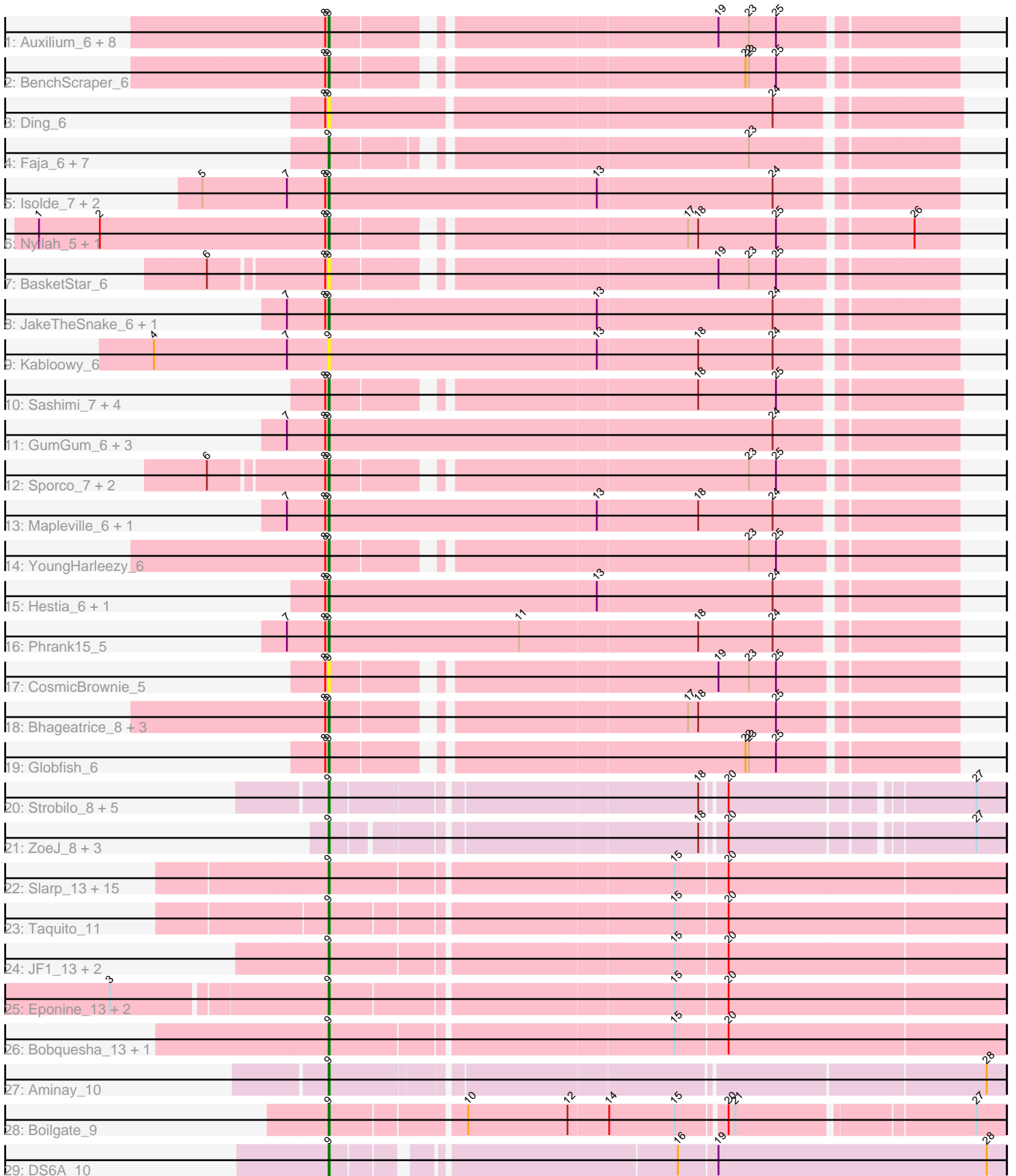


Pham 294623



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 294623 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294623 has 90 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Auxilium\_6, MUWow\_5, AdaS\_6, Raphaella\_6, Richie\_6, JellyBread\_6, Lasker\_6, BillyTP\_6, CookieBear\_6
- Track 2 : BenchScraper\_6
- Track 3 : Ding\_6
- Track 4 : Faja\_6, BlueShadow\_6, MidnightRain\_6, RadFad\_6, Hillester\_6, MaterMagnus\_6, SonDevVon\_5, Aikyam\_6
- Track 5 : Isolde\_7, Windest\_7, Vopal\_7
- Track 6 : Nyilah\_5, Tiff81\_7
- Track 7 : BasketStar\_6
- Track 8 : JakeTheSnake\_6, Persistence\_5
- Track 9 : Kabloowy\_6
- Track 10 : Sashimi\_7, LeBruni\_7, EvePickles\_6, Satrap\_6, Shukran\_6
- Track 11 : GumGum\_6, DarwinJr\_9, Anekin\_5, Crescenzo\_6
- Track 12 : Sporco\_7, SpicyFrank\_6, NewKitty\_7
- Track 13 : Mapleville\_6, Lawnathon\_6
- Track 14 : YoungHarleezy\_6
- Track 15 : Hestia\_6, ThayneTheZag\_6
- Track 16 : Phrank15\_5
- Track 17 : CosmicBrownie\_5
- Track 18 : Bhageatrice\_8, Gorpy\_6, Sakai\_6, MurphyJoseph\_6
- Track 19 : Globfish\_6
- Track 20 : Strobilo\_8, DismalFunk\_8, Findley\_8, Milly\_8, DismalStressor\_8, Marcoliusprime\_8
- Track 21 : ZoeJ\_8, BoostSeason\_8, Doughnut\_8, Mufasa\_8
- Track 22 : Slarp\_13, Wintermute\_13, OmniCritical\_13, Mitti\_13, MissDaisy\_13, Chancellor\_13, Kraw\_13, Malthus\_13, Lebo14\_13, Qhanda\_13, SamScheppers\_11, DanSyl44\_13, Fionnbharth\_13, Patt\_13, Cheetobro\_13, YasnayaPolyana\_13
- Track 23 : Taquito\_11
- Track 24 : JF1\_13, Y10\_13, Y2\_13
- Track 25 : Eponine\_13, Ruthiejr\_12, Juliette\_13
- Track 26 : Bobquesha\_13, Reptar3000\_13
- Track 27 : Aminay\_10
- Track 28 : Boilgate\_9
- Track 29 : DS6A\_10

## **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 67 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AdaS\_6, Aikyam\_6, Aminay\_10, Anekin\_5, Auxilium\_6, BasketStar\_6, BenchScraper\_6, Bhageatrice\_8, BillyTP\_6, BlueShadow\_6, Bobquesha\_13, Boilgate\_9, BoostSeason\_8, Chancellor\_13, Cheetobro\_13, CookieBear\_6, CosmicBrownie\_5, Crescenzo\_6, DS6A\_10, DanSyl44\_13, DarwinJr\_9, Ding\_6, DismalFunk\_8, DismalStressor\_8, Doughnut\_8, Eponine\_13, EvePickles\_6, Faja\_6, Findley\_8, Fionnbharth\_13, Globfish\_6, Gorpy\_6, GumGum\_6, Hestia\_6, Hillester\_6, Isolde\_7, JF1\_13, JakeTheSnake\_6, JellyBread\_6, Juliette\_13, Kabloowy\_6, Kraw\_13, Lasker\_6, Lawnathon\_6, LeBruni\_7, Lebo14\_13, MUWow\_5, Malthus\_13, Mapleville\_6, Marcoliusprime\_8, MaterMagnus\_6, MidnightRain\_6, Milly\_8, MissDaisy\_13, Mitti\_13, Mufasa\_8, MurphyJoseph\_6, NewKitty\_7, Nyilah\_5, OmniCritical\_13, Patt\_13, Persistence\_5, Phrank15\_5, Qhanda\_13, RadFad\_6, Raphaella\_6, Reptar3000\_13, Richie\_6, Ruthiejr\_12, Sakai\_6, SamScheppers\_11, Sashimi\_7, Satrap\_6, Shukran\_6, Slarp\_13, SonDevVon\_5, SpicyFrank\_6, Sporco\_7, Strobilo\_8, Taquito\_11, ThayneTheZag\_6, Tiff81\_7, Vopal\_7, Windest\_7, Wintermute\_13, Y10\_13, Y2\_13, YasnayaPolyana\_13, YoungHarleezy\_6, ZoeJ\_8,

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 9:

- Found in 90 of 90 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 67 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AdaS\_6 (AY), Aikyam\_6 (AY), Aminay\_10 (K7), Anekin\_5 (AY), Auxilium\_6 (AY), BasketStar\_6 (AY), BenchScraper\_6 (AY), Bhageatrice\_8 (AY), BillyTP\_6 (AY), BlueShadow\_6 (AY), Bobquesha\_13 (K4), Boilgate\_9 (K8), BoostSeason\_8 (K2), Chancellor\_13 (K4), Cheetobro\_13 (K4), CookieBear\_6 (AY), CosmicBrownie\_5 (AY), Crescenzo\_6 (AY), DS6A\_10 (singleton), DanSyl44\_13 (K4), DarwinJr\_9 (AY), Ding\_6 (AY), DismalFunk\_8 (K2), DismalStressor\_8 (K2), Doughnut\_8 (K2), Eponine\_13 (K4), EvePickles\_6 (AY), Faja\_6 (AY), Findley\_8 (K2), Fionnbharth\_13 (K4), Globfish\_6 (AY), Gorpy\_6 (AY), GumGum\_6 (AY), Hestia\_6 (AY), Hillester\_6 (AY), Isolde\_7 (AY), JF1\_13 (K4), JakeTheSnake\_6 (AY), JellyBread\_6 (AY), Juliette\_13 (K4), Kabloowy\_6 (AY), Kraw\_13 (K4), Lasker\_6 (AY), Lawnathon\_6 (AY), LeBruni\_7 (AY), Lebo14\_13 (K4), MUWow\_5 (AY), Malthus\_13 (K4), Mapleville\_6 (AY), Marcoliusprime\_8 (K2), MaterMagnus\_6 (AY), MidnightRain\_6 (AY), Milly\_8 (K2), MissDaisy\_13 (K4), Mitti\_13 (K4), Mufasa\_8 (K2), MurphyJoseph\_6 (AY), NewKitty\_7 (AY), Nyilah\_5 (AY), OmniCritical\_13 (K4), Patt\_13 (K4), Persistence\_5 (AY), Phrank15\_5 (AY), Qhanda\_13 (K4), RadFad\_6 (AY), Raphaella\_6 (AY), Reptar3000\_13 (K4), Richie\_6 (AY), Ruthiejr\_12 (K4), Sakai\_6 (AY), SamScheppers\_11 (K4), Sashimi\_7 (AY), Satrap\_6 (AY), Shukran\_6 (AY), Slarp\_13

(K4), SonDevVon\_5 (AY), SpicyFrank\_6 (AY), Sporco\_7 (AY), Strobilo\_8 (K2), Taquito\_11 (K4), ThayneTheZag\_6 (AY), Tiff81\_7 (AY), Vopal\_7 (AY), Windest\_7 (AY), Wintermute\_13 (K4), Y10\_13 (K4), Y2\_13 (K4), YasnayaPolyana\_13 (K4), YoungHarleezy\_6 (AY), ZoeJ\_8 (K2),

### **Summary by clusters:**

There are 6 clusters represented in this pham: singleton, K2, K7, K4, AY, K8,

Info for manual annotations of cluster AY:

- Start number 9 was manually annotated 32 times for cluster AY.

Info for manual annotations of cluster K2:

- Start number 9 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K4:

- Start number 9 was manually annotated 22 times for cluster K4.

Info for manual annotations of cluster K7:

- Start number 9 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 9 was manually annotated 1 time for cluster K8.

### **Gene Information:**

Gene: AdaS\_6 Start: 4952, Stop: 5458, Start Num: 9

Candidate Starts for AdaS\_6:

(8, 4949), (Start: 9 @4952 has 67 MA's), (19, 5261), (23, 5288), (25, 5312),

Gene: Aikyam\_6 Start: 4944, Stop: 5444, Start Num: 9

Candidate Starts for Aikyam\_6:

(Start: 9 @4944 has 67 MA's), (23, 5277),

Gene: Aminay\_10 Start: 7229, Stop: 7786, Start Num: 9

Candidate Starts for Aminay\_10:

(Start: 9 @7229 has 67 MA's), (28, 7769),

Gene: Anekin\_5 Start: 5066, Stop: 5599, Start Num: 9

Candidate Starts for Anekin\_5:

(7, 5030), (8, 5063), (Start: 9 @5066 has 67 MA's), (24, 5453),

Gene: Auxilium\_6 Start: 4952, Stop: 5458, Start Num: 9

Candidate Starts for Auxilium\_6:

(8, 4949), (Start: 9 @4952 has 67 MA's), (19, 5261), (23, 5288), (25, 5312),

Gene: BasketStar\_6 Start: 4991, Stop: 5497, Start Num: 9

Candidate Starts for BasketStar\_6:

(6, 4892), (8, 4988), (Start: 9 @4991 has 67 MA's), (19, 5300), (23, 5327), (25, 5351),

Gene: BenchScraper\_6 Start: 4952, Stop: 5458, Start Num: 9

Candidate Starts for BenchScraper\_6:  
(8, 4949), (Start: 9 @4952 has 67 MA's), (22, 5285), (23, 5288), (25, 5312),

Gene: Bhageatrice\_8 Start: 6147, Stop: 6653, Start Num: 9  
Candidate Starts for Bhageatrice\_8:  
(8, 6144), (Start: 9 @6147 has 67 MA's), (17, 6429), (18, 6438), (25, 6507),

Gene: BillyTP\_6 Start: 4946, Stop: 5452, Start Num: 9  
Candidate Starts for BillyTP\_6:  
(8, 4943), (Start: 9 @4946 has 67 MA's), (19, 5255), (23, 5282), (25, 5306),

Gene: BlueShadow\_6 Start: 4944, Stop: 5447, Start Num: 9  
Candidate Starts for BlueShadow\_6:  
(Start: 9 @4944 has 67 MA's), (23, 5277),

Gene: Bobquesha\_13 Start: 8298, Stop: 8870, Start Num: 9  
Candidate Starts for Bobquesha\_13:  
(Start: 9 @8298 has 67 MA's), (15, 8586), (20, 8631),

Gene: Boilgate\_9 Start: 7303, Stop: 7857, Start Num: 9  
Candidate Starts for Boilgate\_9:  
(Start: 9 @7303 has 67 MA's), (10, 7414), (12, 7501), (14, 7534), (15, 7591), (20, 7630), (21, 7636),  
(27, 7831),

Gene: BoostSeason\_8 Start: 5333, Stop: 5878, Start Num: 9  
Candidate Starts for BoostSeason\_8:  
(Start: 9 @5333 has 67 MA's), (18, 5636), (20, 5654), (27, 5852),

Gene: Chancellor\_13 Start: 8544, Stop: 9116, Start Num: 9  
Candidate Starts for Chancellor\_13:  
(Start: 9 @8544 has 67 MA's), (15, 8832), (20, 8877),

Gene: Cheetobro\_13 Start: 8544, Stop: 9116, Start Num: 9  
Candidate Starts for Cheetobro\_13:  
(Start: 9 @8544 has 67 MA's), (15, 8832), (20, 8877),

Gene: CookieBear\_6 Start: 4952, Stop: 5458, Start Num: 9  
Candidate Starts for CookieBear\_6:  
(8, 4949), (Start: 9 @4952 has 67 MA's), (19, 5261), (23, 5288), (25, 5312),

Gene: CosmicBrownie\_5 Start: 5069, Stop: 5575, Start Num: 9  
Candidate Starts for CosmicBrownie\_5:  
(8, 5066), (Start: 9 @5069 has 67 MA's), (19, 5378), (23, 5405), (25, 5429),

Gene: Crescenzo\_6 Start: 4994, Stop: 5527, Start Num: 9  
Candidate Starts for Crescenzo\_6:  
(7, 4958), (8, 4991), (Start: 9 @4994 has 67 MA's), (24, 5381),

Gene: DS6A\_10 Start: 7559, Stop: 8122, Start Num: 9  
Candidate Starts for DS6A\_10:  
(Start: 9 @7559 has 67 MA's), (16, 7835), (19, 7868), (28, 8105),

Gene: DanSyl44\_13 Start: 8547, Stop: 9119, Start Num: 9

Candidate Starts for DanSyl44\_13:  
(Start: 9 @8547 has 67 MA's), (15, 8835), (20, 8880),

Gene: DarwinJr\_9 Start: 6297, Stop: 6830, Start Num: 9  
Candidate Starts for DarwinJr\_9:  
(7, 6261), (8, 6294), (Start: 9 @6297 has 67 MA's), (24, 6684),

Gene: Ding\_6 Start: 4943, Stop: 5470, Start Num: 9  
Candidate Starts for Ding\_6:  
(8, 4940), (Start: 9 @4943 has 67 MA's), (24, 5321),

Gene: DismalFunk\_8 Start: 5349, Stop: 5891, Start Num: 9  
Candidate Starts for DismalFunk\_8:  
(Start: 9 @5349 has 67 MA's), (18, 5652), (20, 5670), (27, 5865),

Gene: DismalStressor\_8 Start: 5349, Stop: 5891, Start Num: 9  
Candidate Starts for DismalStressor\_8:  
(Start: 9 @5349 has 67 MA's), (18, 5652), (20, 5670), (27, 5865),

Gene: Doughnut\_8 Start: 5333, Stop: 5878, Start Num: 9  
Candidate Starts for Doughnut\_8:  
(Start: 9 @5333 has 67 MA's), (18, 5636), (20, 5654), (27, 5852),

Gene: Eponine\_13 Start: 8420, Stop: 8992, Start Num: 9  
Candidate Starts for Eponine\_13:  
(3, 8240), (Start: 9 @8420 has 67 MA's), (15, 8708), (20, 8753),

Gene: EvePickles\_6 Start: 4997, Stop: 5500, Start Num: 9  
Candidate Starts for EvePickles\_6:  
(8, 4994), (Start: 9 @4997 has 67 MA's), (18, 5288), (25, 5357),

Gene: Faja\_6 Start: 4944, Stop: 5444, Start Num: 9  
Candidate Starts for Faja\_6:  
(Start: 9 @4944 has 67 MA's), (23, 5277),

Gene: Findley\_8 Start: 5349, Stop: 5891, Start Num: 9  
Candidate Starts for Findley\_8:  
(Start: 9 @5349 has 67 MA's), (18, 5652), (20, 5670), (27, 5865),

Gene: Fionnbharth\_13 Start: 8534, Stop: 9106, Start Num: 9  
Candidate Starts for Fionnbharth\_13:  
(Start: 9 @8534 has 67 MA's), (15, 8822), (20, 8867),

Gene: Globfish\_6 Start: 4997, Stop: 5503, Start Num: 9  
Candidate Starts for Globfish\_6:  
(8, 4994), (Start: 9 @4997 has 67 MA's), (22, 5330), (23, 5333), (25, 5357),

Gene: Gorpy\_6 Start: 4946, Stop: 5452, Start Num: 9  
Candidate Starts for Gorpy\_6:  
(8, 4943), (Start: 9 @4946 has 67 MA's), (17, 5228), (18, 5237), (25, 5306),

Gene: GumGum\_6 Start: 4998, Stop: 5531, Start Num: 9  
Candidate Starts for GumGum\_6:

(7, 4962), (8, 4995), (Start: 9 @4998 has 67 MA's), (24, 5385),

Gene: Hestia\_6 Start: 5060, Stop: 5593, Start Num: 9

Candidate Starts for Hestia\_6:

(8, 5057), (Start: 9 @5060 has 67 MA's), (13, 5294), (24, 5447),

Gene: Hillester\_6 Start: 4944, Stop: 5447, Start Num: 9

Candidate Starts for Hillester\_6:

(Start: 9 @4944 has 67 MA's), (23, 5277),

Gene: Isolde\_7 Start: 4984, Stop: 5517, Start Num: 9

Candidate Starts for Isolde\_7:

(5, 4873), (7, 4948), (8, 4981), (Start: 9 @4984 has 67 MA's), (13, 5218), (24, 5371),

Gene: JF1\_13 Start: 8533, Stop: 9105, Start Num: 9

Candidate Starts for JF1\_13:

(Start: 9 @8533 has 67 MA's), (15, 8821), (20, 8866),

Gene: JakeTheSnake\_6 Start: 4953, Stop: 5486, Start Num: 9

Candidate Starts for JakeTheSnake\_6:

(7, 4917), (8, 4950), (Start: 9 @4953 has 67 MA's), (13, 5187), (24, 5340),

Gene: JellyBread\_6 Start: 4945, Stop: 5451, Start Num: 9

Candidate Starts for JellyBread\_6:

(8, 4942), (Start: 9 @4945 has 67 MA's), (19, 5254), (23, 5281), (25, 5305),

Gene: Juliette\_13 Start: 8420, Stop: 8992, Start Num: 9

Candidate Starts for Juliette\_13:

(3, 8240), (Start: 9 @8420 has 67 MA's), (15, 8708), (20, 8753),

Gene: Kabloowy\_6 Start: 4995, Stop: 5528, Start Num: 9

Candidate Starts for Kabloowy\_6:

(4, 4842), (7, 4959), (Start: 9 @4995 has 67 MA's), (13, 5229), (18, 5316), (24, 5382),

Gene: Kraw\_13 Start: 8453, Stop: 9025, Start Num: 9

Candidate Starts for Kraw\_13:

(Start: 9 @8453 has 67 MA's), (15, 8741), (20, 8786),

Gene: Lasker\_6 Start: 4945, Stop: 5451, Start Num: 9

Candidate Starts for Lasker\_6:

(8, 4942), (Start: 9 @4945 has 67 MA's), (19, 5254), (23, 5281), (25, 5305),

Gene: Lawnathon\_6 Start: 4996, Stop: 5529, Start Num: 9

Candidate Starts for Lawnathon\_6:

(7, 4960), (8, 4993), (Start: 9 @4996 has 67 MA's), (13, 5230), (18, 5317), (24, 5383),

Gene: LeBruni\_7 Start: 4996, Stop: 5502, Start Num: 9

Candidate Starts for LeBruni\_7:

(8, 4993), (Start: 9 @4996 has 67 MA's), (18, 5287), (25, 5356),

Gene: Lebo14\_13 Start: 8547, Stop: 9119, Start Num: 9

Candidate Starts for Lebo14\_13:

(Start: 9 @8547 has 67 MA's), (15, 8835), (20, 8880),

Gene: MUWow\_5 Start: 5024, Stop: 5530, Start Num: 9  
Candidate Starts for MUWow\_5:  
(8, 5021), (Start: 9 @5024 has 67 MA's), (19, 5333), (23, 5360), (25, 5384),

Gene: Malthus\_13 Start: 8453, Stop: 9025, Start Num: 9  
Candidate Starts for Malthus\_13:  
(Start: 9 @8453 has 67 MA's), (15, 8741), (20, 8786),

Gene: Mapleville\_6 Start: 5066, Stop: 5599, Start Num: 9  
Candidate Starts for Mapleville\_6:  
(7, 5030), (8, 5063), (Start: 9 @5066 has 67 MA's), (13, 5300), (18, 5387), (24, 5453),

Gene: Marcoliusprime\_8 Start: 5349, Stop: 5891, Start Num: 9  
Candidate Starts for Marcoliusprime\_8:  
(Start: 9 @5349 has 67 MA's), (18, 5652), (20, 5670), (27, 5865),

Gene: MaterMagnus\_6 Start: 4944, Stop: 5444, Start Num: 9  
Candidate Starts for MaterMagnus\_6:  
(Start: 9 @4944 has 67 MA's), (23, 5277),

Gene: MidnightRain\_6 Start: 4944, Stop: 5447, Start Num: 9  
Candidate Starts for MidnightRain\_6:  
(Start: 9 @4944 has 67 MA's), (23, 5277),

Gene: Milly\_8 Start: 5349, Stop: 5891, Start Num: 9  
Candidate Starts for Milly\_8:  
(Start: 9 @5349 has 67 MA's), (18, 5652), (20, 5670), (27, 5865),

Gene: MissDaisy\_13 Start: 8319, Stop: 8891, Start Num: 9  
Candidate Starts for MissDaisy\_13:  
(Start: 9 @8319 has 67 MA's), (15, 8607), (20, 8652),

Gene: Mitti\_13 Start: 8457, Stop: 9029, Start Num: 9  
Candidate Starts for Mitti\_13:  
(Start: 9 @8457 has 67 MA's), (15, 8745), (20, 8790),

Gene: Mufasa\_8 Start: 5333, Stop: 5878, Start Num: 9  
Candidate Starts for Mufasa\_8:  
(Start: 9 @5333 has 67 MA's), (18, 5636), (20, 5654), (27, 5852),

Gene: MurphyJoseph\_6 Start: 4949, Stop: 5455, Start Num: 9  
Candidate Starts for MurphyJoseph\_6:  
(8, 4946), (Start: 9 @4949 has 67 MA's), (17, 5231), (18, 5240), (25, 5309),

Gene: NewKitty\_7 Start: 5164, Stop: 5673, Start Num: 9  
Candidate Starts for NewKitty\_7:  
(6, 5065), (8, 5161), (Start: 9 @5164 has 67 MA's), (23, 5503), (25, 5527),

Gene: Nyilah\_5 Start: 5021, Stop: 5527, Start Num: 9  
Candidate Starts for Nyilah\_5:  
(1, 4766), (2, 4820), (8, 5018), (Start: 9 @5021 has 67 MA's), (17, 5303), (18, 5312), (25, 5381), (26, 5489),

Gene: OmniCritical\_13 Start: 8444, Stop: 9016, Start Num: 9  
Candidate Starts for OmniCritical\_13:  
(Start: 9 @8444 has 67 MA's), (15, 8732), (20, 8777),

Gene: Patt\_13 Start: 8295, Stop: 8867, Start Num: 9  
Candidate Starts for Patt\_13:  
(Start: 9 @8295 has 67 MA's), (15, 8583), (20, 8628),

Gene: Persistence\_5 Start: 5021, Stop: 5554, Start Num: 9  
Candidate Starts for Persistence\_5:  
(7, 4985), (8, 5018), (Start: 9 @5021 has 67 MA's), (13, 5255), (24, 5408),

Gene: Phrank15\_5 Start: 5067, Stop: 5600, Start Num: 9  
Candidate Starts for Phrank15\_5:  
(7, 5031), (8, 5064), (Start: 9 @5067 has 67 MA's), (11, 5235), (18, 5388), (24, 5454),

Gene: Qhanda\_13 Start: 8553, Stop: 9125, Start Num: 9  
Candidate Starts for Qhanda\_13:  
(Start: 9 @8553 has 67 MA's), (15, 8841), (20, 8886),

Gene: RadFad\_6 Start: 4944, Stop: 5447, Start Num: 9  
Candidate Starts for RadFad\_6:  
(Start: 9 @4944 has 67 MA's), (23, 5277),

Gene: Raphaella\_6 Start: 4952, Stop: 5458, Start Num: 9  
Candidate Starts for Raphaella\_6:  
(8, 4949), (Start: 9 @4952 has 67 MA's), (19, 5261), (23, 5288), (25, 5312),

Gene: Reptar3000\_13 Start: 8297, Stop: 8869, Start Num: 9  
Candidate Starts for Reptar3000\_13:  
(Start: 9 @8297 has 67 MA's), (15, 8585), (20, 8630),

Gene: Richie\_6 Start: 4952, Stop: 5458, Start Num: 9  
Candidate Starts for Richie\_6:  
(8, 4949), (Start: 9 @4952 has 67 MA's), (19, 5261), (23, 5288), (25, 5312),

Gene: Ruthiejr\_12 Start: 8151, Stop: 8723, Start Num: 9  
Candidate Starts for Ruthiejr\_12:  
(3, 7971), (Start: 9 @8151 has 67 MA's), (15, 8439), (20, 8484),

Gene: Sakai\_6 Start: 4946, Stop: 5452, Start Num: 9  
Candidate Starts for Sakai\_6:  
(8, 4943), (Start: 9 @4946 has 67 MA's), (17, 5228), (18, 5237), (25, 5306),

Gene: SamScheppers\_11 Start: 8060, Stop: 8632, Start Num: 9  
Candidate Starts for SamScheppers\_11:  
(Start: 9 @8060 has 67 MA's), (15, 8348), (20, 8393),

Gene: Sashimi\_7 Start: 5113, Stop: 5619, Start Num: 9  
Candidate Starts for Sashimi\_7:  
(8, 5110), (Start: 9 @5113 has 67 MA's), (18, 5404), (25, 5473),

Gene: Satrap\_6 Start: 4951, Stop: 5457, Start Num: 9  
Candidate Starts for Satrap\_6:  
(8, 4948), (Start: 9 @4951 has 67 MA's), (18, 5242), (25, 5311),

Gene: Shukran\_6 Start: 4951, Stop: 5457, Start Num: 9  
Candidate Starts for Shukran\_6:  
(8, 4948), (Start: 9 @4951 has 67 MA's), (18, 5242), (25, 5311),

Gene: Slarp\_13 Start: 8544, Stop: 9116, Start Num: 9  
Candidate Starts for Slarp\_13:  
(Start: 9 @8544 has 67 MA's), (15, 8832), (20, 8877),

Gene: SonDevVon\_5 Start: 4945, Stop: 5445, Start Num: 9  
Candidate Starts for SonDevVon\_5:  
(Start: 9 @4945 has 67 MA's), (23, 5278),

Gene: SpicyFrank\_6 Start: 4997, Stop: 5506, Start Num: 9  
Candidate Starts for SpicyFrank\_6:  
(6, 4898), (8, 4994), (Start: 9 @4997 has 67 MA's), (23, 5336), (25, 5360),

Gene: Sporco\_7 Start: 4997, Stop: 5503, Start Num: 9  
Candidate Starts for Sporco\_7:  
(6, 4898), (8, 4994), (Start: 9 @4997 has 67 MA's), (23, 5333), (25, 5357),

Gene: Strobilo\_8 Start: 5349, Stop: 5891, Start Num: 9  
Candidate Starts for Strobilo\_8:  
(Start: 9 @5349 has 67 MA's), (18, 5652), (20, 5670), (27, 5865),

Gene: Taquito\_11 Start: 8133, Stop: 8702, Start Num: 9  
Candidate Starts for Taquito\_11:  
(Start: 9 @8133 has 67 MA's), (15, 8418), (20, 8463),

Gene: ThayneTheZag\_6 Start: 4948, Stop: 5481, Start Num: 9  
Candidate Starts for ThayneTheZag\_6:  
(8, 4945), (Start: 9 @4948 has 67 MA's), (13, 5182), (24, 5335),

Gene: Tiff81\_7 Start: 5109, Stop: 5615, Start Num: 9  
Candidate Starts for Tiff81\_7:  
(1, 4854), (2, 4908), (8, 5106), (Start: 9 @5109 has 67 MA's), (17, 5391), (18, 5400), (25, 5469), (26, 5577),

Gene: Vopal\_7 Start: 4984, Stop: 5517, Start Num: 9  
Candidate Starts for Vopal\_7:  
(5, 4873), (7, 4948), (8, 4981), (Start: 9 @4984 has 67 MA's), (13, 5218), (24, 5371),

Gene: Windest\_7 Start: 4984, Stop: 5517, Start Num: 9  
Candidate Starts for Windest\_7:  
(5, 4873), (7, 4948), (8, 4981), (Start: 9 @4984 has 67 MA's), (13, 5218), (24, 5371),

Gene: Wintermute\_13 Start: 8533, Stop: 9105, Start Num: 9  
Candidate Starts for Wintermute\_13:  
(Start: 9 @8533 has 67 MA's), (15, 8821), (20, 8866),

Gene: Y10\_13 Start: 8533, Stop: 9105, Start Num: 9  
Candidate Starts for Y10\_13:  
(Start: 9 @8533 has 67 MA's), (15, 8821), (20, 8866),

Gene: Y2\_13 Start: 8533, Stop: 9105, Start Num: 9  
Candidate Starts for Y2\_13:  
(Start: 9 @8533 has 67 MA's), (15, 8821), (20, 8866),

Gene: YasnayaPolyana\_13 Start: 8534, Stop: 9106, Start Num: 9  
Candidate Starts for YasnayaPolyana\_13:  
(Start: 9 @8534 has 67 MA's), (15, 8822), (20, 8867),

Gene: YoungHarleezy\_6 Start: 4950, Stop: 5456, Start Num: 9  
Candidate Starts for YoungHarleezy\_6:  
(8, 4947), (Start: 9 @4950 has 67 MA's), (23, 5286), (25, 5310),

Gene: ZoeJ\_8 Start: 5306, Stop: 5842, Start Num: 9  
Candidate Starts for ZoeJ\_8:  
(Start: 9 @5306 has 67 MA's), (18, 5603), (20, 5621), (27, 5816),