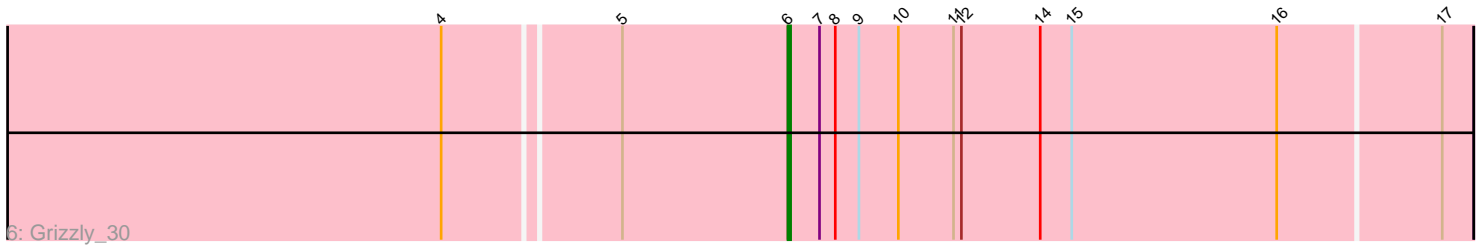
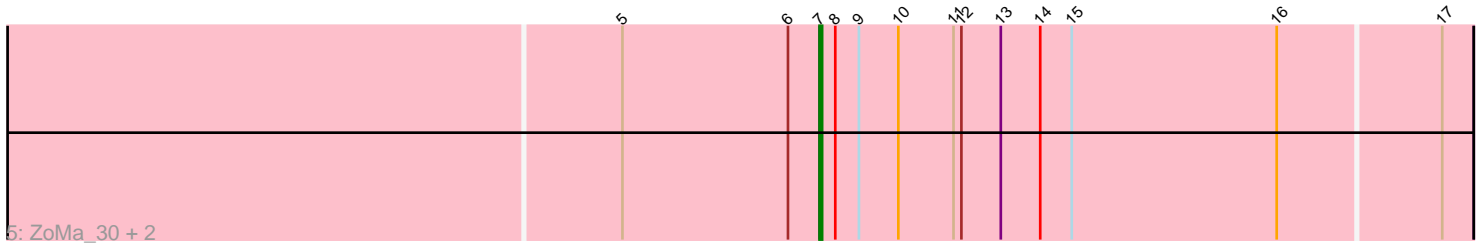
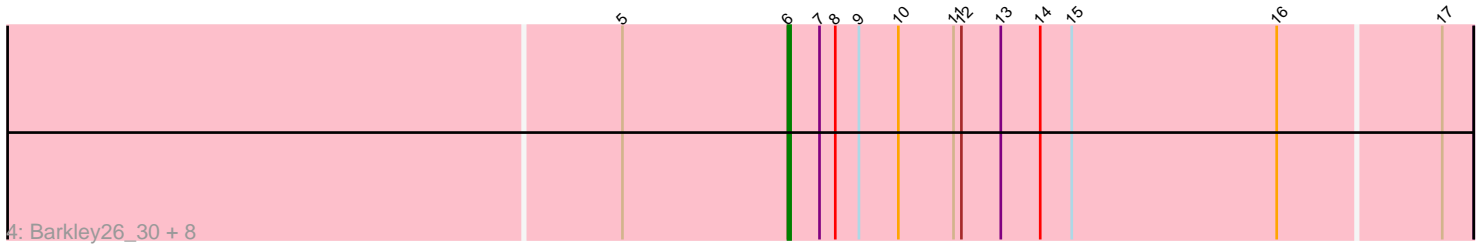
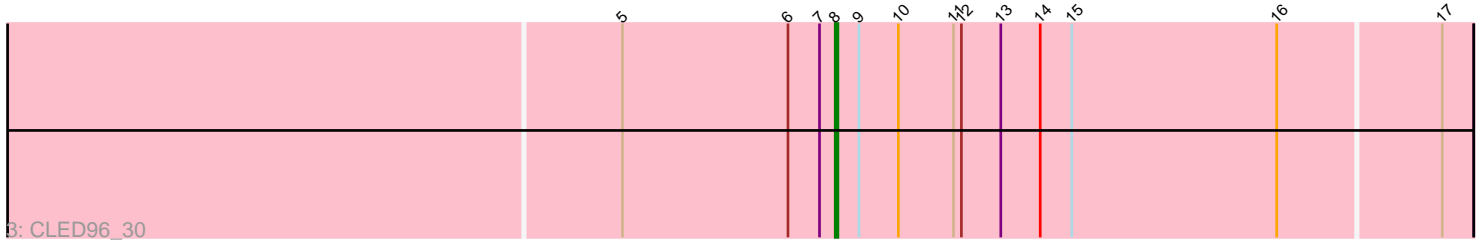
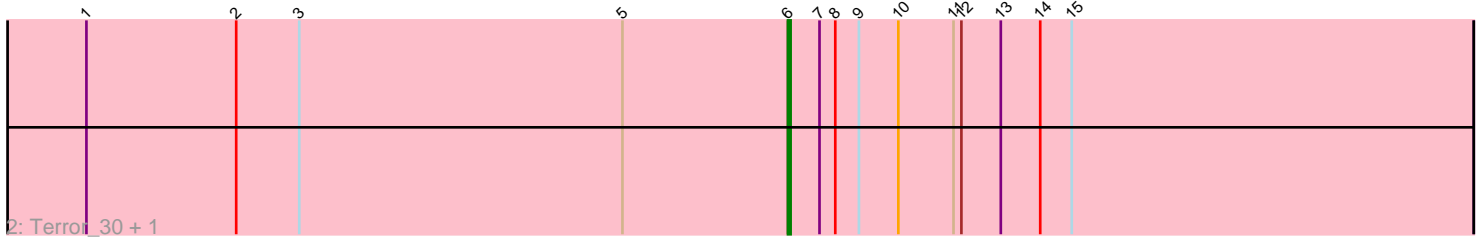
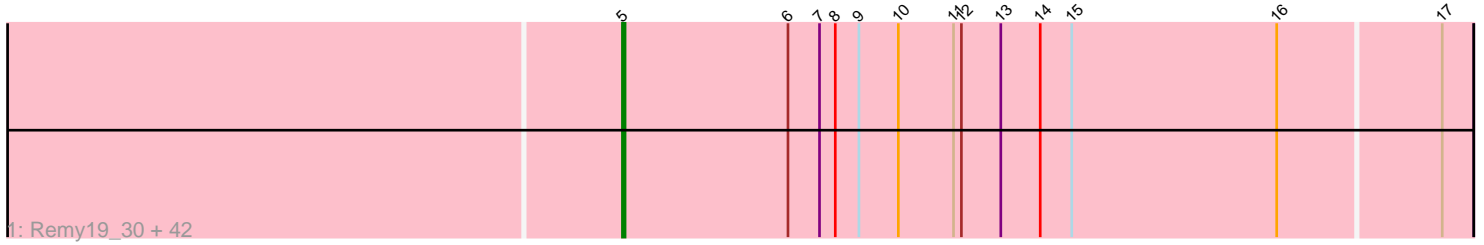


# Pham 159204



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 159204 Report

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

Pham number 159204 has 59 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Remy19\_30, Mowgli\_30, CassieYates\_30, Periodt\_30, ShaboiShabazz\_30, Avrafan\_30, TomBrady\_30, Angel\_30, BruceB\_30, Marmie\_30, Cherrybomb426\_30, DMoney\_30, Gomashi\_30, Coleslaw\_30, Gideon\_30, Sizemore\_30, Rabbs\_30, OctaviousRex\_30, Schiebel\_30, Chance64\_30, LouisV14\_30, Renaissance\_30, Plagueis\_30, Aroostook\_30, Sneeze\_30, Halo\_30, JorRay\_30, Jolene\_30, GoldenAsh\_30, Jane\_30, Annihilator\_30, Jonghyun\_30, Frosty24\_30, Phreak\_30, BQuat\_30, BPs\_30, Peeb\_30, Hope\_30, Zombie\_30, Darionha\_30, PinkYoshi\_30, Liefie\_30, Kareem\_30
- Track 2 : Terror\_30, Taheera\_30
- Track 3 : CLED96\_30
- Track 4 : Barkley26\_30, ECartman\_30, DNAllI\_0030, Cedasite\_30, Kasen3\_30, Sweets\_30, Hotshotbaby7\_30, Olga\_30, Camri\_30
- Track 5 : ZoMa\_30, Phish\_30, Crespo\_30
- Track 6 : Grizzly\_30

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

The start number called the most often in the published annotations is 5, it was called in 43 of the 57 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angel\_30, Annihilator\_30, Aroostook\_30, Avrafan\_30, BPs\_30, BQuat\_30, BruceB\_30, CassieYates\_30, Chance64\_30, Cherrybomb426\_30, Coleslaw\_30, DMoney\_30, Darionha\_30, Frosty24\_30, Gideon\_30, GoldenAsh\_30, Gomashi\_30, Halo\_30, Hope\_30, Jane\_30, Jolene\_30, Jonghyun\_30, JorRay\_30, Kareem\_30, Liefie\_30, LouisV14\_30, Marmie\_30, Mowgli\_30, OctaviousRex\_30, Peeb\_30, Periodt\_30, Phreak\_30, PinkYoshi\_30, Plagueis\_30, Rabbs\_30, Remy19\_30, Renaissance\_30, Schiebel\_30, ShaboiShabazz\_30, Sizemore\_30, Sneeze\_30, TomBrady\_30, Zombie\_30,

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

- Barkley26\_30, CLED96\_30, Camri\_30, Cedasite\_30, Crespo\_30, DNAllI\_0030, ECartman\_30, Grizzly\_30, Hotshotbaby7\_30, Kasen3\_30, Olga\_30, Phish\_30, Sweets\_30, Taheera\_30, Terror\_30, ZoMa\_30,

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

- 

### Summary by start number:

Start 5:

- Found in 59 of 59 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 43 of 57
- Called 72.9% of time when present
- Phage (with cluster) where this start called: Angel\_30 (G1), Annihilator\_30 (G1), Aroostook\_30 (G1), Avrafan\_30 (G1), BPs\_30 (G1), BQuat\_30 (G1), BruceB\_30 (G1), CassieYates\_30 (G1), Chance64\_30 (G1), Cherrybomb426\_30 (G1), Coleslaw\_30 (G1), DMoney\_30 (G1), Darionha\_30 (G1), Frosty24\_30 (G1), Gideon\_30 (G1), GoldenAsh\_30 (G1), Gomashi\_30 (G1), Halo\_30 (G1), Hope\_30 (G1), Jane\_30 (G1), Jolene\_30 (G1), Jonghyun\_30 (G1), JorRay\_30 (G1), Kareem\_30 (G1), Liefie\_30 (G1), LouisV14\_30 (G1), Marmie\_30 (G1), Mowgli\_30 (G1), OctaviousRex\_30 (G1), Peeb\_30 (G1), Periodt\_30 (G1), Phreak\_30 (G1), PinkYoshi\_30 (G1), Plagueis\_30 (G1), Rabbs\_30 (G1), Remy19\_30 (G1), Renaissance\_30 (G1), Schiebel\_30 (G1), ShaboiShabazz\_30 (G1), Sizemore\_30 (G1), Sneeze\_30 (G1), TomBrady\_30 (G1), Zombie\_30 (G1),

Start 6:

- Found in 59 of 59 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 11 of 57
- Called 20.3% of time when present
- Phage (with cluster) where this start called: Barkley26\_30 (G1), Camri\_30 (G1), Cedasite\_30 (G1), DNAlll\_0030 (G1), ECartman\_30 (G1), Grizzly\_30 (G1), Hotshotbaby7\_30 (G1), Kasen3\_30 (G1), Olga\_30 (G1), Sweets\_30 (G1), Taheera\_30 (G1), Terror\_30 (G1),

Start 7:

- Found in 59 of 59 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 2 of 57
- Called 5.1% of time when present
- Phage (with cluster) where this start called: Crespo\_30 (G1), Phish\_30 (G1), ZoMa\_30 (G1),

Start 8:

- Found in 59 of 59 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 1 of 57
- Called 1.7% of time when present
- Phage (with cluster) where this start called: CLED96\_30 (G1),

### Summary by clusters:

There is one cluster represented in this pham: G1

Info for manual annotations of cluster G1:

- Start number 5 was manually annotated 43 times for cluster G1.
- Start number 6 was manually annotated 11 times for cluster G1.
- Start number 7 was manually annotated 2 times for cluster G1.
- Start number 8 was manually annotated 1 time for cluster G1.

**Gene Information:**

Gene: Angel\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Angel\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Annihilator\_30 Start: 26781, Stop: 27101, Start Num: 5

Candidate Starts for Annihilator\_30:

(Start: 5 @26781 has 43 MA's), (Start: 6 @26844 has 11 MA's), (Start: 7 @26856 has 2 MA's), (Start: 8 @26862 has 1 MA's), (9, 26871), (10, 26886), (11, 26907), (12, 26910), (13, 26925), (14, 26940), (15, 26952), (16, 27030), (17, 27090),

Gene: Aroostook\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Aroostook\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Avrafan\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Avrafan\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: BPs\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for BPs\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: BQuat\_30 Start: 26781, Stop: 27101, Start Num: 5

Candidate Starts for BQuat\_30:

(Start: 5 @26781 has 43 MA's), (Start: 6 @26844 has 11 MA's), (Start: 7 @26856 has 2 MA's), (Start: 8 @26862 has 1 MA's), (9, 26871), (10, 26886), (11, 26907), (12, 26910), (13, 26925), (14, 26940), (15, 26952), (16, 27030), (17, 27090),

Gene: Barkley26\_30 Start: 26875, Stop: 27132, Start Num: 6

Candidate Starts for Barkley26\_30:

(Start: 5 @26812 has 43 MA's), (Start: 6 @26875 has 11 MA's), (Start: 7 @26887 has 2 MA's), (Start: 8 @26893 has 1 MA's), (9, 26902), (10, 26917), (11, 26938), (12, 26941), (13, 26956), (14, 26971), (15, 26983), (16, 27061), (17, 27121),

Gene: BruceB\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for BruceB\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: CLED96\_30 Start: 26871, Stop: 27110, Start Num: 8

Candidate Starts for CLED96\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Camri\_30 Start: 26853, Stop: 27110, Start Num: 6

Candidate Starts for Camri\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: CassieYates\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for CassieYates\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Cedasite\_30 Start: 26853, Stop: 27110, Start Num: 6

Candidate Starts for Cedasite\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Chance64\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Chance64\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Cherrybomb426\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Cherrybomb426\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Coleslaw\_30 Start: 26781, Stop: 27101, Start Num: 5

Candidate Starts for Coleslaw\_30:

(Start: 5 @26781 has 43 MA's), (Start: 6 @26844 has 11 MA's), (Start: 7 @26856 has 2 MA's), (Start: 8 @26862 has 1 MA's), (9, 26871), (10, 26886), (11, 26907), (12, 26910), (13, 26925), (14, 26940), (15, 26952), (16, 27030), (17, 27090),

Gene: Crespo\_30 Start: 26866, Stop: 27111, Start Num: 7

Candidate Starts for Crespo\_30:

(Start: 5 @26791 has 43 MA's), (Start: 6 @26854 has 11 MA's), (Start: 7 @26866 has 2 MA's), (Start: 8 @26872 has 1 MA's), (9, 26881), (10, 26896), (11, 26917), (12, 26920), (13, 26935), (14, 26950), (15, 26962), (16, 27040), (17, 27100),

Gene: DMoney\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for DMoney\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: DNAIII\_0030 Start: 26604, Stop: 26861, Start Num: 6

Candidate Starts for DNAIII\_0030:

(Start: 5 @26541 has 43 MA's), (Start: 6 @26604 has 11 MA's), (Start: 7 @26616 has 2 MA's), (Start: 8 @26622 has 1 MA's), (9, 26631), (10, 26646), (11, 26667), (12, 26670), (13, 26685), (14, 26700), (15, 26712), (16, 26790), (17, 26850),

Gene: Darionha\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Darionha\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: ECartman\_30 Start: 26853, Stop: 27110, Start Num: 6

Candidate Starts for ECartman\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Frosty24\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Frosty24\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Gideon\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Gideon\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: GoldenAsh\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for GoldenAsh\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Gomashi\_30 Start: 26791, Stop: 27111, Start Num: 5

Candidate Starts for Gomashi\_30:

(Start: 5 @26791 has 43 MA's), (Start: 6 @26854 has 11 MA's), (Start: 7 @26866 has 2 MA's), (Start: 8 @26872 has 1 MA's), (9, 26881), (10, 26896), (11, 26917), (12, 26920), (13, 26935), (14, 26950), (15, 26962), (16, 27040), (17, 27100),

Gene: Grizzly\_30 Start: 26853, Stop: 27110, Start Num: 6

Candidate Starts for Grizzly\_30:

(4, 26727), (Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Halo\_30 Start: 26785, Stop: 27105, Start Num: 5

Candidate Starts for Halo\_30:

(Start: 5 @26785 has 43 MA's), (Start: 6 @26848 has 11 MA's), (Start: 7 @26860 has 2 MA's), (Start: 8 @26866 has 1 MA's), (9, 26875), (10, 26890), (11, 26911), (12, 26914), (13, 26929), (14, 26944),

(15, 26956), (16, 27034), (17, 27094),

Gene: Hope\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Hope\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Hotshotbaby7\_30 Start: 26853, Stop: 27110, Start Num: 6

Candidate Starts for Hotshotbaby7\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Jane\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Jane\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Jolene\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Jolene\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Jonghyun\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Jonghyun\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: JorRay\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for JorRay\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Kareem\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Kareem\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Kasen3\_30 Start: 26854, Stop: 27111, Start Num: 6

Candidate Starts for Kasen3\_30:

(Start: 5 @26791 has 43 MA's), (Start: 6 @26854 has 11 MA's), (Start: 7 @26866 has 2 MA's), (Start: 8 @26872 has 1 MA's), (9, 26881), (10, 26896), (11, 26917), (12, 26920), (13, 26935), (14, 26950), (15, 26962), (16, 27040), (17, 27100),

Gene: Liefie\_30 Start: 26788, Stop: 27108, Start Num: 5

Candidate Starts for Liefie\_30:

(Start: 5 @26788 has 43 MA's), (Start: 6 @26851 has 11 MA's), (Start: 7 @26863 has 2 MA's), (Start: 8 @26869 has 1 MA's), (9, 26878), (10, 26893), (11, 26914), (12, 26917), (13, 26932), (14, 26947), (15, 26959), (16, 27037), (17, 27097),

Gene: LouisV14\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for LouisV14\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Marmie\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Marmie\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Mowgli\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Mowgli\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: OctaviousRex\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for OctaviousRex\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Olga\_30 Start: 26853, Stop: 27110, Start Num: 6

Candidate Starts for Olga\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Peeb\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Peeb\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Periodt\_30 Start: 26781, Stop: 27101, Start Num: 5

Candidate Starts for Periodt\_30:

(Start: 5 @26781 has 43 MA's), (Start: 6 @26844 has 11 MA's), (Start: 7 @26856 has 2 MA's), (Start: 8 @26862 has 1 MA's), (9, 26871), (10, 26886), (11, 26907), (12, 26910), (13, 26925), (14, 26940), (15, 26952), (16, 27030), (17, 27090),

Gene: Phish\_30 Start: 26865, Stop: 27110, Start Num: 7

Candidate Starts for Phish\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Phreak\_30 Start: 26790, Stop: 27110, Start Num: 5



Candidate Starts for Phreak\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: PinkYoshi\_30 Start: 26781, Stop: 27101, Start Num: 5

Candidate Starts for PinkYoshi\_30:

(Start: 5 @26781 has 43 MA's), (Start: 6 @26844 has 11 MA's), (Start: 7 @26856 has 2 MA's), (Start: 8 @26862 has 1 MA's), (9, 26871), (10, 26886), (11, 26907), (12, 26910), (13, 26925), (14, 26940), (15, 26952), (16, 27030), (17, 27090),

Gene: Plagueis\_30 Start: 26625, Stop: 26945, Start Num: 5

Candidate Starts for Plagueis\_30:

(Start: 5 @26625 has 43 MA's), (Start: 6 @26688 has 11 MA's), (Start: 7 @26700 has 2 MA's), (Start: 8 @26706 has 1 MA's), (9, 26715), (10, 26730), (11, 26751), (12, 26754), (13, 26769), (14, 26784), (15, 26796), (16, 26874), (17, 26934),

Gene: Rabbs\_30 Start: 26873, Stop: 27193, Start Num: 5

Candidate Starts for Rabbs\_30:

(Start: 5 @26873 has 43 MA's), (Start: 6 @26936 has 11 MA's), (Start: 7 @26948 has 2 MA's), (Start: 8 @26954 has 1 MA's), (9, 26963), (10, 26978), (11, 26999), (12, 27002), (13, 27017), (14, 27032), (15, 27044), (16, 27122), (17, 27182),

Gene: Remy19\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Remy19\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Renaissance\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Renaissance\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Schiebel\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Schiebel\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: ShaboiShabazz\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for ShaboiShabazz\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Sizemore\_30 Start: 26791, Stop: 27111, Start Num: 5

Candidate Starts for Sizemore\_30:

(Start: 5 @26791 has 43 MA's), (Start: 6 @26854 has 11 MA's), (Start: 7 @26866 has 2 MA's), (Start: 8 @26872 has 1 MA's), (9, 26881), (10, 26896), (11, 26917), (12, 26920), (13, 26935), (14, 26950), (15, 26962), (16, 27040), (17, 27100),

Gene: Sneeze\_30 Start: 26872, Stop: 27192, Start Num: 5

Candidate Starts for Sneeze\_30:

(Start: 5 @26872 has 43 MA's), (Start: 6 @26935 has 11 MA's), (Start: 7 @26947 has 2 MA's), (Start: 8 @26953 has 1 MA's), (9, 26962), (10, 26977), (11, 26998), (12, 27001), (13, 27016), (14, 27031), (15, 27043), (16, 27121), (17, 27181),

Gene: Sweets\_30 Start: 26848, Stop: 27105, Start Num: 6

Candidate Starts for Sweets\_30:

(Start: 5 @26785 has 43 MA's), (Start: 6 @26848 has 11 MA's), (Start: 7 @26860 has 2 MA's), (Start: 8 @26866 has 1 MA's), (9, 26875), (10, 26890), (11, 26911), (12, 26914), (13, 26929), (14, 26944), (15, 26956), (16, 27034), (17, 27094),

Gene: Taheera\_30 Start: 26974, Stop: 27234, Start Num: 6

Candidate Starts for Taheera\_30:

(1, 26707), (2, 26764), (3, 26788), (Start: 5 @26911 has 43 MA's), (Start: 6 @26974 has 11 MA's), (Start: 7 @26986 has 2 MA's), (Start: 8 @26992 has 1 MA's), (9, 27001), (10, 27016), (11, 27037), (12, 27040), (13, 27055), (14, 27070), (15, 27082),

Gene: Terror\_30 Start: 26974, Stop: 27234, Start Num: 6

Candidate Starts for Terror\_30:

(1, 26707), (2, 26764), (3, 26788), (Start: 5 @26911 has 43 MA's), (Start: 6 @26974 has 11 MA's), (Start: 7 @26986 has 2 MA's), (Start: 8 @26992 has 1 MA's), (9, 27001), (10, 27016), (11, 27037), (12, 27040), (13, 27055), (14, 27070), (15, 27082),

Gene: TomBrady\_30 Start: 26791, Stop: 27111, Start Num: 5

Candidate Starts for TomBrady\_30:

(Start: 5 @26791 has 43 MA's), (Start: 6 @26854 has 11 MA's), (Start: 7 @26866 has 2 MA's), (Start: 8 @26872 has 1 MA's), (9, 26881), (10, 26896), (11, 26917), (12, 26920), (13, 26935), (14, 26950), (15, 26962), (16, 27040), (17, 27100),

Gene: ZoMa\_30 Start: 26865, Stop: 27110, Start Num: 7

Candidate Starts for ZoMa\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),

Gene: Zombie\_30 Start: 26790, Stop: 27110, Start Num: 5

Candidate Starts for Zombie\_30:

(Start: 5 @26790 has 43 MA's), (Start: 6 @26853 has 11 MA's), (Start: 7 @26865 has 2 MA's), (Start: 8 @26871 has 1 MA's), (9, 26880), (10, 26895), (11, 26916), (12, 26919), (13, 26934), (14, 26949), (15, 26961), (16, 27039), (17, 27099),