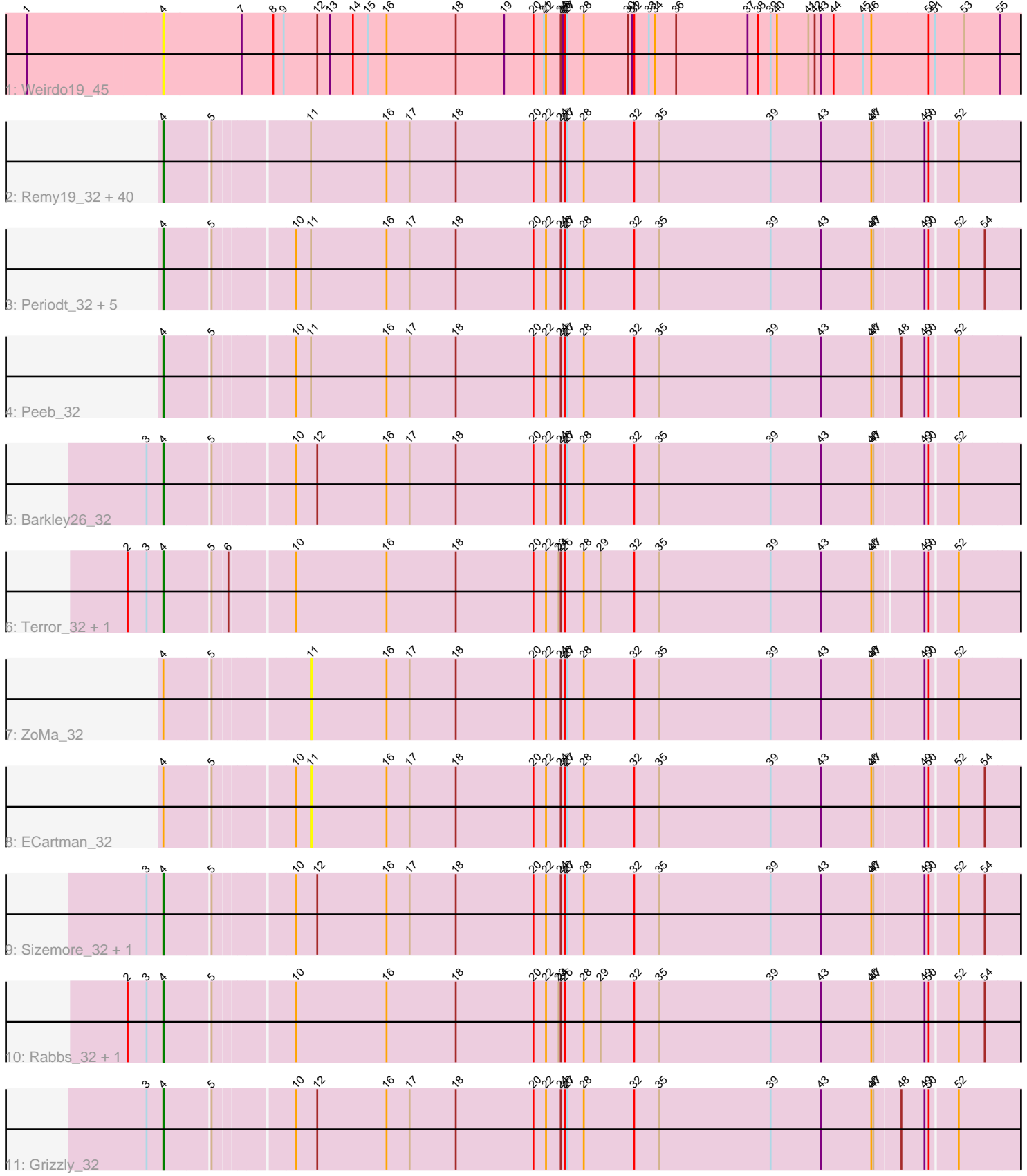


# Pham 171486



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 171486 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171486 has 59 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Weirdo19\_45
- Track 2 : Remy19\_32, Mowgli\_32, JorRay\_32, CassieYates\_32, ShaboiShabazz\_32, Frosty24\_32, Camri\_32, TomBrady\_32, Avrafan\_32, BruceB\_32, Angel\_32, Cherrybomb426\_32, Olga\_32, DMoney\_32, Gomashi\_32, Coleslaw\_32, Marmie\_32, Cedasite\_32, OctaviousRex\_32, PinkYoshi\_32, Sweets\_32, Hotshotbaby7\_32, LouisV14\_32, Schiebel\_32, Plagueis\_32, Renaissance\_32, Halo\_32, Phish\_32, Gideon\_32, Jane\_32, Annihilator\_32, Phreak\_32, BQuat\_32, GoldenAsh\_32, BPs\_32, CLED96\_32, Zombie\_32, Hope\_32, Darionha\_32, Crespo\_32, Kareem\_32
- Track 3 : Periodt\_32, Chance64\_32, Aroostook\_32, Jonghyun\_32, Jolene\_32, Liefie\_32
- Track 4 : Peeb\_32
- Track 5 : Barkley26\_32
- Track 6 : Terror\_32, Taheera\_32
- Track 7 : ZoMa\_32
- Track 8 : ECartman\_32
- Track 9 : Sizemore\_32, Kasen3\_32
- Track 10 : Rabbs\_32, Sneeze\_32
- Track 11 : Grizzly\_32

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

The start number called the most often in the published annotations is 4, it was called in 56 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angel\_32, Annihilator\_32, Aroostook\_32, Avrafan\_32, BPs\_32, BQuat\_32, Barkley26\_32, BruceB\_32, CLED96\_32, Camri\_32, CassieYates\_32, Cedasite\_32, Chance64\_32, Cherrybomb426\_32, Coleslaw\_32, Crespo\_32, DMoney\_32, Darionha\_32, Frosty24\_32, Gideon\_32, GoldenAsh\_32, Gomashi\_32, Grizzly\_32, Halo\_32, Hope\_32, Hotshotbaby7\_32, Jane\_32, Jolene\_32, Jonghyun\_32, JorRay\_32, Kareem\_32, Kasen3\_32, Liefie\_32, LouisV14\_32, Marmie\_32, Mowgli\_32, OctaviousRex\_32, Olga\_32, Peeb\_32, Periodt\_32, Phish\_32, Phreak\_32, PinkYoshi\_32, Plagueis\_32, Rabbs\_32, Remy19\_32, Renaissance\_32, Schiebel\_32,

ShaboiShabazz\_32, Sizemore\_32, Sneeze\_32, Sweets\_32, Taheera\_32, Terror\_32, TomBrady\_32, Weirido19\_45, Zombie\_32,

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

- ECartman\_32, ZoMa\_32,

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

- 

### Summary by start number:

Start 4:

- Found in 59 of 59 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 56 of 56
- Called 96.6% of time when present
- Phage (with cluster) where this start called: Angel\_32 (G1), Annihilator\_32 (G1), Aroostook\_32 (G1), Avrafan\_32 (G1), BPs\_32 (G1), BQuat\_32 (G1), Barkley26\_32 (G1), BruceB\_32 (G1), CLED96\_32 (G1), Camri\_32 (G1), CassieYates\_32 (G1), Cedasite\_32 (G1), Chance64\_32 (G1), Cherrybomb426\_32 (G1), Coleslaw\_32 (G1), Crespo\_32 (G1), DMoney\_32 (G1), Darionha\_32 (G1), Frosty24\_32 (G1), Gideon\_32 (G1), GoldenAsh\_32 (G1), Gomashi\_32 (G1), Grizzly\_32 (G1), Halo\_32 (G1), Hope\_32 (G1), Hotshotbaby7\_32 (G1), Jane\_32 (G1), Jolene\_32 (G1), Jonghyun\_32 (G1), JorRay\_32 (G1), Kareem\_32 (G1), Kasen3\_32 (G1), Liefie\_32 (G1), LouisV14\_32 (G1), Marmie\_32 (G1), Mowgli\_32 (G1), OctaviousRex\_32 (G1), Olga\_32 (G1), Peeb\_32 (G1), Periodt\_32 (G1), Phish\_32 (G1), Phreak\_32 (G1), PinkYoshi\_32 (G1), Plagueis\_32 (G1), Rabbs\_32 (G1), Remy19\_32 (G1), Renaissance\_32 (G1), Schiebel\_32 (G1), ShaboiShabazz\_32 (G1), Sizemore\_32 (G1), Sneeze\_32 (G1), Sweets\_32 (G1), Taheera\_32 (G1), Terror\_32 (G1), TomBrady\_32 (G1), Weirido19\_45 (AH), Zombie\_32 (G1),

Start 11:

- Found in 50 of 59 ( 84.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.0% of time when present
- Phage (with cluster) where this start called: ECartman\_32 (G1), ZoMa\_32 (G1),

### Summary by clusters:

There are 2 clusters represented in this pham: AH, G1,

Info for manual annotations of cluster G1:

- Start number 4 was manually annotated 56 times for cluster G1.

### Gene Information:

Gene: Angel\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Angel\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Annihilator\_32 Start: 28908, Stop: 27712, Start Num: 4

Candidate Starts for Annihilator\_32:

(Start: 4 @28908 has 56 MA's), (5, 28845), (11, 28719), (16, 28611), (17, 28578), (18, 28512), (20, 28401), (22, 28383), (24, 28362), (26, 28356), (27, 28353), (28, 28329), (32, 28257), (35, 28221), (39, 28062), (43, 27990), (46, 27918), (47, 27915), (49, 27846), (50, 27840), (52, 27804),

Gene: Aroostook\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Aroostook\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (10, 28749), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813), (54, 27777),

Gene: Avrafan\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Avrafan\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: BPs\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for BPs\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: BQuat\_32 Start: 28908, Stop: 27712, Start Num: 4

Candidate Starts for BQuat\_32:

(Start: 4 @28908 has 56 MA's), (5, 28845), (11, 28719), (16, 28611), (17, 28578), (18, 28512), (20, 28401), (22, 28383), (24, 28362), (26, 28356), (27, 28353), (28, 28329), (32, 28257), (35, 28221), (39, 28062), (43, 27990), (46, 27918), (47, 27915), (49, 27846), (50, 27840), (52, 27804),

Gene: Barkley26\_32 Start: 28939, Stop: 27743, Start Num: 4

Candidate Starts for Barkley26\_32:

(3, 28963), (Start: 4 @28939 has 56 MA's), (5, 28876), (10, 28771), (12, 28741), (16, 28642), (17, 28609), (18, 28543), (20, 28432), (22, 28414), (24, 28393), (26, 28387), (27, 28384), (28, 28360), (32, 28288), (35, 28252), (39, 28093), (43, 28021), (46, 27949), (47, 27946), (49, 27877), (50, 27871), (52, 27835),

Gene: BruceB\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for BruceB\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: CLED96\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for CLED96\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Camri\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Camri\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: CassieYates\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for CassieYates\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Cedasite\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Cedasite\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Chance64\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Chance64\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (10, 28749), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813), (54, 27777),

Gene: Cherrybomb426\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Cherrybomb426\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Coleslaw\_32 Start: 28908, Stop: 27712, Start Num: 4

Candidate Starts for Coleslaw\_32:

(Start: 4 @28908 has 56 MA's), (5, 28845), (11, 28719), (16, 28611), (17, 28578), (18, 28512), (20, 28401), (22, 28383), (24, 28362), (26, 28356), (27, 28353), (28, 28329), (32, 28257), (35, 28221), (39, 28062), (43, 27990), (46, 27918), (47, 27915), (49, 27846), (50, 27840), (52, 27804),

Gene: Crespo\_32 Start: 28918, Stop: 27722, Start Num: 4

Candidate Starts for Crespo\_32:

(Start: 4 @28918 has 56 MA's), (5, 28855), (11, 28729), (16, 28621), (17, 28588), (18, 28522), (20, 28411), (22, 28393), (24, 28372), (26, 28366), (27, 28363), (28, 28339), (32, 28267), (35, 28231), (39, 28072), (43, 28000), (46, 27928), (47, 27925), (49, 27856), (50, 27850), (52, 27814),

Gene: DMoney\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for DMoney\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Darionha\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Darionha\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: ECartman\_32 Start: 28728, Stop: 27721, Start Num: 11

Candidate Starts for ECartman\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (10, 28749), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813), (54, 27777),

Gene: Frosty24\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Frosty24\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Gideon\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Gideon\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: GoldenAsh\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for GoldenAsh\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Gomashi\_32 Start: 28918, Stop: 27722, Start Num: 4

Candidate Starts for Gomashi\_32:

(Start: 4 @28918 has 56 MA's), (5, 28855), (11, 28729), (16, 28621), (17, 28588), (18, 28522), (20, 28411), (22, 28393), (24, 28372), (26, 28366), (27, 28363), (28, 28339), (32, 28267), (35, 28231), (39, 28072), (43, 28000), (46, 27928), (47, 27925), (49, 27856), (50, 27850), (52, 27814),

Gene: Grizzly\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Grizzly\_32:

(3, 28941), (Start: 4 @28917 has 56 MA's), (5, 28854), (10, 28749), (12, 28719), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (48, 27888), (49, 27855), (50, 27849), (52, 27813),

Gene: Halo\_32 Start: 28912, Stop: 27716, Start Num: 4

Candidate Starts for Halo\_32:

(Start: 4 @28912 has 56 MA's), (5, 28849), (11, 28723), (16, 28615), (17, 28582), (18, 28516), (20, 28405), (22, 28387), (24, 28366), (26, 28360), (27, 28357), (28, 28333), (32, 28261), (35, 28225), (39, 28066), (43, 27994), (46, 27922), (47, 27919), (49, 27850), (50, 27844), (52, 27808),

Gene: Hope\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Hope\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Hotshotbaby7\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Hotshotbaby7\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Jane\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Jane\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Jolene\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Jolene\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (10, 28749), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813), (54, 27777),

Gene: Jonghyun\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Jonghyun\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (10, 28749), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813), (54, 27777),

Gene: JorRay\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for JorRay\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Kareem\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Kareem\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Kasen3\_32 Start: 28918, Stop: 27722, Start Num: 4

Candidate Starts for Kasen3\_32:

(3, 28942), (Start: 4 @28918 has 56 MA's), (5, 28855), (10, 28750), (12, 28720), (16, 28621), (17, 28588), (18, 28522), (20, 28411), (22, 28393), (24, 28372), (26, 28366), (27, 28363), (28, 28339), (32, 28267), (35, 28231), (39, 28072), (43, 28000), (46, 27928), (47, 27925), (49, 27856), (50, 27850), (52, 27814), (54, 27778),

Gene: Liefie\_32 Start: 28915, Stop: 27719, Start Num: 4

Candidate Starts for Liefie\_32:

(Start: 4 @28915 has 56 MA's), (5, 28852), (10, 28747), (11, 28726), (16, 28618), (17, 28585), (18, 28519), (20, 28408), (22, 28390), (24, 28369), (26, 28363), (27, 28360), (28, 28336), (32, 28264), (35, 28228), (39, 28069), (43, 27997), (46, 27925), (47, 27922), (49, 27853), (50, 27847), (52, 27811), (54, 27775),

Gene: LouisV14\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for LouisV14\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Marmie\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Marmie\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Mowgli\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Mowgli\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: OctaviousRex\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for OctaviousRex\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Olga\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Olga\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Peeb\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Peeb\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (10, 28749), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (48, 27888), (49, 27855), (50, 27849), (52, 27813),

Gene: Periodt\_32 Start: 28908, Stop: 27712, Start Num: 4

Candidate Starts for Periodt\_32:

(Start: 4 @28908 has 56 MA's), (5, 28845), (10, 28740), (11, 28719), (16, 28611), (17, 28578), (18, 28512), (20, 28401), (22, 28383), (24, 28362), (26, 28356), (27, 28353), (28, 28329), (32, 28257), (35, 28221), (39, 28062), (43, 27990), (46, 27918), (47, 27915), (49, 27846), (50, 27840), (52, 27804), (54, 27768),

Gene: Phish\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Phish\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Phreak\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Phreak\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),



Gene: PinkYoshi\_32 Start: 28908, Stop: 27712, Start Num: 4

Candidate Starts for PinkYoshi\_32:

(Start: 4 @28908 has 56 MA's), (5, 28845), (11, 28719), (16, 28611), (17, 28578), (18, 28512), (20, 28401), (22, 28383), (24, 28362), (26, 28356), (27, 28353), (28, 28329), (32, 28257), (35, 28221), (39, 28062), (43, 27990), (46, 27918), (47, 27915), (49, 27846), (50, 27840), (52, 27804),

Gene: Plagueis\_32 Start: 28752, Stop: 27556, Start Num: 4

Candidate Starts for Plagueis\_32:

(Start: 4 @28752 has 56 MA's), (5, 28689), (11, 28563), (16, 28455), (17, 28422), (18, 28356), (20, 28245), (22, 28227), (24, 28206), (26, 28200), (27, 28197), (28, 28173), (32, 28101), (35, 28065), (39, 27906), (43, 27834), (46, 27762), (47, 27759), (49, 27690), (50, 27684), (52, 27648),

Gene: Rabbs\_32 Start: 29000, Stop: 27804, Start Num: 4

Candidate Starts for Rabbs\_32:

(2, 29051), (3, 29024), (Start: 4 @29000 has 56 MA's), (5, 28937), (10, 28832), (16, 28703), (18, 28604), (20, 28493), (22, 28475), (23, 28457), (24, 28454), (26, 28448), (28, 28421), (29, 28397), (32, 28349), (35, 28313), (39, 28154), (43, 28082), (46, 28010), (47, 28007), (49, 27938), (50, 27932), (52, 27896), (54, 27860),

Gene: Remy19\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Remy19\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Renaissance\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Renaissance\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Schiebel\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Schiebel\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: ShaboiShabazz\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for ShaboiShabazz\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Sizemore\_32 Start: 28918, Stop: 27722, Start Num: 4

Candidate Starts for Sizemore\_32:

(3, 28942), (Start: 4 @28918 has 56 MA's), (5, 28855), (10, 28750), (12, 28720), (16, 28621), (17, 28588), (18, 28522), (20, 28411), (22, 28393), (24, 28372), (26, 28366), (27, 28363), (28, 28339), (32, 28267), (35, 28231), (39, 28072), (43, 28000), (46, 27928), (47, 27925), (49, 27856), (50, 27850), (52, 27814), (54, 27778),

Gene: Sneeze\_32 Start: 28999, Stop: 27803, Start Num: 4

Candidate Starts for Sneeze\_32:

(2, 29050), (3, 29023), (Start: 4 @28999 has 56 MA's), (5, 28936), (10, 28831), (16, 28702), (18, 28603), (20, 28492), (22, 28474), (23, 28456), (24, 28453), (26, 28447), (28, 28420), (29, 28396), (32, 28348), (35, 28312), (39, 28153), (43, 28081), (46, 28009), (47, 28006), (49, 27937), (50, 27931), (52, 27895), (54, 27859),

Gene: Sweets\_32 Start: 28912, Stop: 27716, Start Num: 4

Candidate Starts for Sweets\_32:

(Start: 4 @28912 has 56 MA's), (5, 28849), (11, 28723), (16, 28615), (17, 28582), (18, 28516), (20, 28405), (22, 28387), (24, 28366), (26, 28360), (27, 28357), (28, 28333), (32, 28261), (35, 28225), (39, 28066), (43, 27994), (46, 27922), (47, 27919), (49, 27850), (50, 27844), (52, 27808),

Gene: Taheera\_32 Start: 29035, Stop: 27845, Start Num: 4

Candidate Starts for Taheera\_32:

(2, 29086), (3, 29059), (Start: 4 @29035 has 56 MA's), (5, 28972), (6, 28951), (10, 28867), (16, 28738), (18, 28639), (20, 28528), (22, 28510), (23, 28492), (24, 28489), (26, 28483), (28, 28456), (29, 28432), (32, 28384), (35, 28348), (39, 28189), (43, 28117), (46, 28045), (47, 28042), (49, 27979), (50, 27973), (52, 27937),

Gene: Terror\_32 Start: 29035, Stop: 27845, Start Num: 4

Candidate Starts for Terror\_32:

(2, 29086), (3, 29059), (Start: 4 @29035 has 56 MA's), (5, 28972), (6, 28951), (10, 28867), (16, 28738), (18, 28639), (20, 28528), (22, 28510), (23, 28492), (24, 28489), (26, 28483), (28, 28456), (29, 28432), (32, 28384), (35, 28348), (39, 28189), (43, 28117), (46, 28045), (47, 28042), (49, 27979), (50, 27973), (52, 27937),

Gene: TomBrady\_32 Start: 28918, Stop: 27722, Start Num: 4

Candidate Starts for TomBrady\_32:

(Start: 4 @28918 has 56 MA's), (5, 28855), (11, 28729), (16, 28621), (17, 28588), (18, 28522), (20, 28411), (22, 28393), (24, 28372), (26, 28366), (27, 28363), (28, 28339), (32, 28267), (35, 28231), (39, 28072), (43, 28000), (46, 27928), (47, 27925), (49, 27856), (50, 27850), (52, 27814),

Gene: Weirido19\_45 Start: 34583, Stop: 33348, Start Num: 4

Candidate Starts for Weirido19\_45:

(1, 34775), (Start: 4 @34583 has 56 MA's), (7, 34472), (8, 34427), (9, 34412), (12, 34364), (13, 34346), (14, 34313), (15, 34292), (16, 34265), (18, 34166), (19, 34097), (20, 34055), (21, 34040), (22, 34037), (24, 34016), (25, 34013), (26, 34010), (27, 34007), (28, 33983), (30, 33920), (31, 33914), (32, 33911), (33, 33890), (34, 33881), (36, 33851), (37, 33749), (38, 33734), (39, 33716), (40, 33707), (41, 33662), (42, 33653), (43, 33644), (44, 33626), (45, 33584), (46, 33572), (50, 33491), (51, 33482), (53, 33440), (55, 33389),

Gene: ZoMa\_32 Start: 28728, Stop: 27721, Start Num: 11

Candidate Starts for ZoMa\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),

Gene: Zombie\_32 Start: 28917, Stop: 27721, Start Num: 4

Candidate Starts for Zombie\_32:

(Start: 4 @28917 has 56 MA's), (5, 28854), (11, 28728), (16, 28620), (17, 28587), (18, 28521), (20, 28410), (22, 28392), (24, 28371), (26, 28365), (27, 28362), (28, 28338), (32, 28266), (35, 28230), (39, 28071), (43, 27999), (46, 27927), (47, 27924), (49, 27855), (50, 27849), (52, 27813),