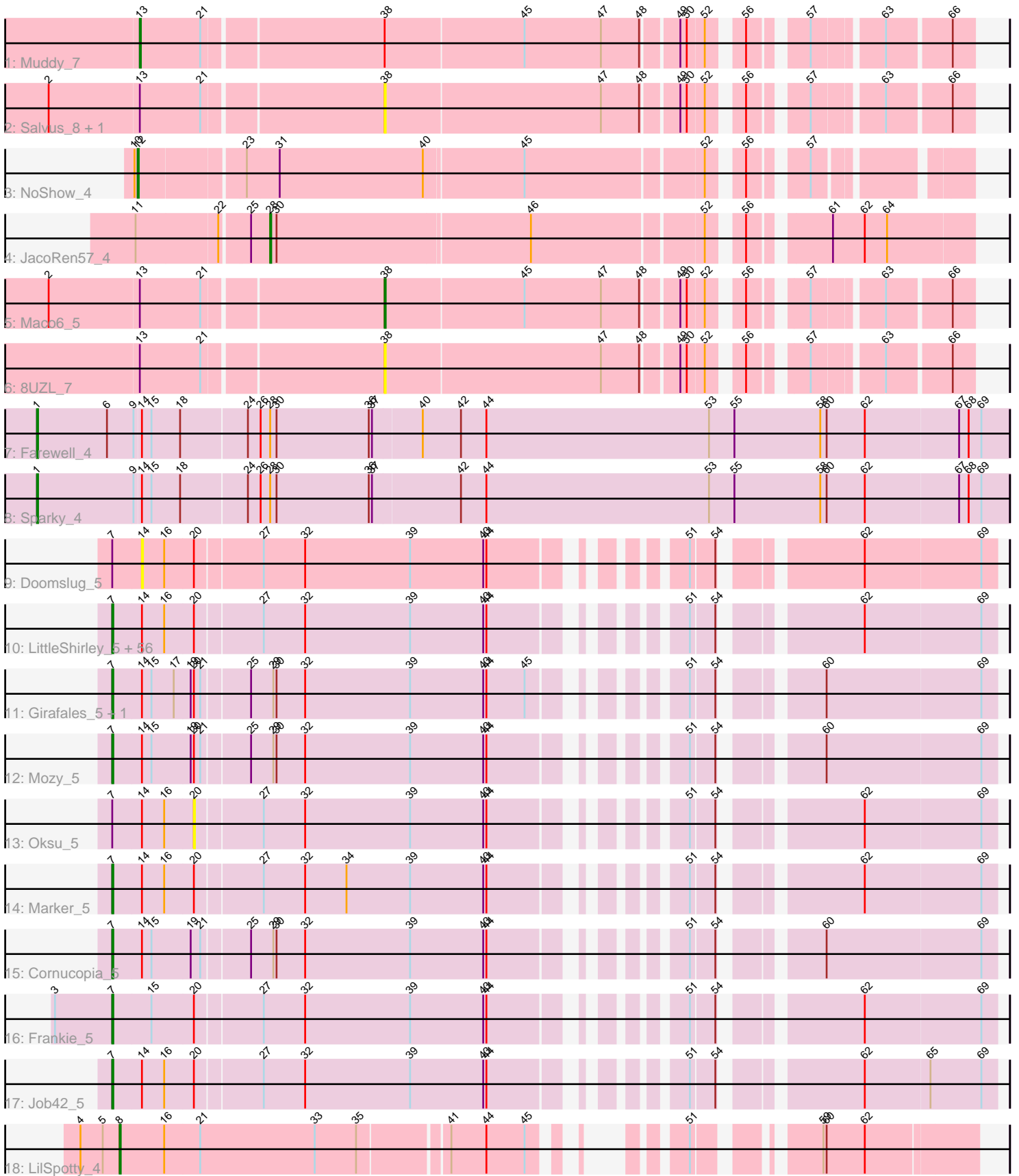


Pham 304963



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 304963 Report

This analysis was run 06/08/26 on database version 649.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 304963 has 76 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Muddy_7
- Track 2 : Salvus_8, LongHai_8
- Track 3 : NoShow_4
- Track 4 : JacoRen57_4
- Track 5 : Maco6_5
- Track 6 : 8UZL_7
- Track 7 : Farewell_4
- Track 8 : Sparky_4
- Track 9 : Doomslug_5
- Track 10 : LittleShirley_5, UncleRicky_5, DocMcStuffins_5, Bobi_5, Flathead_5, JalFarm20_5, Pollywog_5, Beakin_5, MulchExplorer_5, Madiba_5, Leozinho_5, Tchotchke_5, Spikelee_5, Brookers_5, Lucia_5, DaWorst_5, Sarma624_5, Plumbus_5, Awesomesauce_5, ChickenDinner_5, Alexphander_5, Kimberlium_5, Peridot_5, Coco12_5, Rialto_5, DosHalletts_5, Brushbloom_5, Slim_5, DirtMcgirt_5, Drago_5, BigPhil_5, Hegedechwinu_5, Stap_5, Juice456_5, Piper2020_5, Kingsley_5, Ramsey_5, TootsiePop_5, Lorde_5, RockyHorror_5, Cerasum_5, OwlsT2W_5, Boomer_5, Mova_5, Misha28_5, Seagreen_5, Enby_5, SimranZ1_5, BuzzLyseyear_5, Beanstalk_5, Starcevich_5, Totinger_5, Squirty_5, Emmaloid_5, Velveteen_5, Aloeri_5, Tootsieroll_5
- Track 11 : Girafales_5, Quico_5
- Track 12 : Mozy_5
- Track 13 : Oksu_5
- Track 14 : Marker_5
- Track 15 : Cornucopia_5
- Track 16 : Frankie_5
- Track 17 : Job42_5
- Track 18 : LilSpotty_4

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

The start number called the most often in the published annotations is 7, it was called in 61 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander_5, Aloeri_5, Awesomesauce_5, Beakin_5, Beanstalk_5, BigPhil_5, Bobi_5, Boomer_5, Brookers_5, Brushbloom_5, BuzzLyseyear_5, Cerasum_5, ChickenDinner_5, Coco12_5, Cornucopia_5, DaWorst_5, DirtMcgirt_5, DocMcStuffins_5, DosHalletts_5, Drago_5, Emmaloid_5, Enby_5, Flathead_5, Frankie_5, Girafales_5, Hegedechwinu_5, JalFarm20_5, Job42_5, Juice456_5, Kimberlium_5, Kingsley_5, Leozinho_5, LittleShirley_5, Lorde_5, Lucia_5, Madiba_5, Marker_5, Misha28_5, Mova_5, Mozy_5, MulchExplorer_5, OwlsT2W_5, Peridot_5, Piper2020_5, Plumbus_5, Pollywog_5, Quico_5, Ramsey_5, Rialto_5, RockyHorror_5, Sarma624_5, Seagreen_5, SimranZ1_5, Slim_5, Spikelee_5, Squirty_5, Stap_5, Starcevich_5, Tchotchke_5, TootsiePop_5, Tootsieroll_5, Totinger_5, UncleRicky_5, Velveteen_5,

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

- Doomslug_5, Oksu_5,

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

- 8UZL_7, Farewell_4, JacoRen57_4, LilSpotty_4, LongHai_8, Maco6_5, Muddy_7, NoShow_4, Salvus_8, Sparky_4,

Summary by start number:

Start 1:

- Found in 2 of 76 (2.6%) of genes in pham
- Manual Annotations of this start: 2 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Farewell_4 (AF), Sparky_4 (AF),

Start 7:

- Found in 66 of 76 (86.8%) of genes in pham
- Manual Annotations of this start: 61 of 68
- Called 97.0% of time when present
- Phage (with cluster) where this start called: Alexphander_5 (F1), Aloeri_5 (F1), Awesomesauce_5 (F1), Beakin_5 (F1), Beanstalk_5 (F1), BigPhil_5 (F1), Bobi_5 (F1), Boomer_5 (F1), Brookers_5 (F1), Brushbloom_5 (F1), BuzzLyseyear_5 (F1), Cerasum_5 (F1), ChickenDinner_5 (F1), Coco12_5 (F1), Cornucopia_5 (F1), DaWorst_5 (F1), DirtMcgirt_5 (F1), DocMcStuffins_5 (F1), DosHalletts_5 (F1), Drago_5 (F1), Emmaloid_5 (F1), Enby_5 (F1), Flathead_5 (F1), Frankie_5 (F1), Girafales_5 (F1), Hegedechwinu_5 (F1), JalFarm20_5 (F1), Job42_5 (F1), Juice456_5 (F1), Kimberlium_5 (F1), Kingsley_5 (F1), Leozinho_5 (F1), LittleShirley_5 (F1), Lorde_5 (F1), Lucia_5 (F1), Madiba_5 (F1), Marker_5 (F1), Misha28_5 (F1), Mova_5 (F1), Mozy_5 (F1), MulchExplorer_5 (F1), OwlsT2W_5 (F1), Peridot_5 (F1), Piper2020_5 (F1), Plumbus_5 (F1), Pollywog_5 (F1), Quico_5 (F1), Ramsey_5 (F1), Rialto_5 (F1), RockyHorror_5 (F1), Sarma624_5 (F1), Seagreen_5 (F1), SimranZ1_5 (F1), Slim_5 (F1), Spikelee_5 (F1), Squirty_5 (F3), Stap_5 (F1), Starcevich_5 (F1), Tchotchke_5 (F1), TootsiePop_5 (F1), Tootsieroll_5 (F1), Totinger_5 (F1), UncleRicky_5 (F1), Velveteen_5 (F1),

Start 8:

- Found in 1 of 76 (1.3%) of genes in pham

- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilSpotty_4 (singleton),

Start 12:

- Found in 1 of 76 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NoShow_4 (AB),

Start 13:

- Found in 5 of 76 (6.6%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Muddy_7 (AB),

Start 14:

- Found in 67 of 76 (88.2%) of genes in pham
- No Manual Annotations of this start.
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Doomslug_5 (F),

Start 20:

- Found in 65 of 76 (85.5%) of genes in pham
- No Manual Annotations of this start.
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Oksu_5 (F1),

Start 28:

- Found in 3 of 76 (3.9%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 33.3% of time when present
- Phage (with cluster) where this start called: JacoRen57_4 (AB),

Start 38:

- Found in 5 of 76 (6.6%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 80.0% of time when present
- Phage (with cluster) where this start called: 8UZL_7 (AB), LongHai_8 (AB), Maco6_5 (AB), Salvus_8 (AB),

Summary by clusters:

There are 6 clusters represented in this pham: F1, singleton, AB, F, AF, F3,

Info for manual annotations of cluster AB:

- Start number 12 was manually annotated 1 time for cluster AB.
- Start number 13 was manually annotated 1 time for cluster AB.
- Start number 28 was manually annotated 1 time for cluster AB.
- Start number 38 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster AF:

- Start number 1 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster F1:

- Start number 7 was manually annotated 60 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 7 was manually annotated 1 time for cluster F3.

Gene Information:

Gene: 8UZL_7 Start: 5062, Stop: 5550, Start Num: 38

Candidate Starts for 8UZL_7:

(Start: 13 @4843 has 1 MA's), (21, 4900), (Start: 38 @5062 has 1 MA's), (47, 5263), (48, 5299), (49, 5329), (50, 5335), (52, 5350), (56, 5374), (57, 5416), (63, 5473), (66, 5530),

Gene: Alexphander_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Alexphander_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Aloeri_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for Aloeri_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Awesomesauce_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for Awesomesauce_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Beakin_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for Beakin_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Beanstalk_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Beanstalk_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: BigPhil_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for BigPhil_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Bobi_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Bobi_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Boomer_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Boomer_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Brookers_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Brookers_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Brushbloom_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Brushbloom_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: BuzzLyseyear_5 Start: 3603, Stop: 4328, Start Num: 7

Candidate Starts for BuzzLyseyear_5:

(Start: 7 @3603 has 61 MA's), (14, 3630), (16, 3651), (20, 3678), (27, 3738), (32, 3777), (39, 3876), (43, 3945), (44, 3948), (51, 4077), (54, 4098), (62, 4206), (69, 4314),

Gene: Cerasum_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Cerasum_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: ChickenDinner_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for ChickenDinner_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Coco12_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Coco12_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Cornucopia_5 Start: 3606, Stop: 4331, Start Num: 7

Candidate Starts for Cornucopia_5:

(Start: 7 @3606 has 61 MA's), (14, 3633), (15, 3642), (19, 3678), (21, 3687), (25, 3729), (29, 3750), (30, 3753), (32, 3780), (39, 3879), (43, 3948), (44, 3951), (51, 4080), (54, 4101), (60, 4173), (69, 4317),

Gene: DaWorst_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for DaWorst_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: DirtMcgirt_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for DirtMcgirt_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: DocMcStuffins_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for DocMcStuffins_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Doomslug_5 Start: 3631, Stop: 4329, Start Num: 14

Candidate Starts for Doomslug_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: DosHalletts_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for DosHalletts_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Drago_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Drago_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Emmaloid_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Emmaloid_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: Enby_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Enby_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Farewell_4 Start: 3759, Stop: 4664, Start Num: 1

Candidate Starts for Farewell_4:

(Start: 1 @3759 has 2 MA's), (6, 3825), (9, 3849), (14, 3855), (15, 3864), (18, 3891), (24, 3951), (26, 3963), (Start: 28 @3972 has 1 MA's), (30, 3978), (36, 4065), (37, 4068), (40, 4113), (42, 4149), (44, 4173), (53, 4383), (55, 4407), (58, 4488), (60, 4494), (62, 4530), (67, 4617), (68, 4626), (69, 4638),

Gene: Flathead_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Flathead_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Frankie_5 Start: 3798, Stop: 4523, Start Num: 7

Candidate Starts for Frankie_5:

(3, 3744), (Start: 7 @3798 has 61 MA's), (15, 3834), (20, 3873), (27, 3933), (32, 3972), (39, 4071), (43, 4140), (44, 4143), (51, 4272), (54, 4293), (62, 4401), (69, 4509),

Gene: Girafales_5 Start: 3602, Stop: 4327, Start Num: 7

Candidate Starts for Girafales_5:

(Start: 7 @3602 has 61 MA's), (14, 3629), (15, 3638), (17, 3659), (19, 3674), (20, 3677), (21, 3683), (25, 3725), (29, 3746), (30, 3749), (32, 3776), (39, 3875), (43, 3944), (44, 3947), (45, 3983), (51, 4076), (54, 4097), (60, 4169), (69, 4313),

Gene: Hegedechwinu_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Hegedechwinu_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: JacoRen57_4 Start: 3951, Stop: 4562, Start Num: 28

Candidate Starts for JacoRen57_4:

(11, 3834), (22, 3909), (25, 3933), (Start: 28 @3951 has 1 MA's), (30, 3957), (46, 4191), (52, 4344), (56, 4368), (61, 4431), (62, 4461), (64, 4482),

Gene: JalFarm20_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for JalFarm20_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Job42_5 Start: 3603, Stop: 4328, Start Num: 7

Candidate Starts for Job42_5:

(Start: 7 @3603 has 61 MA's), (14, 3630), (16, 3651), (20, 3678), (27, 3738), (32, 3777), (39, 3876), (43, 3945), (44, 3948), (51, 4077), (54, 4098), (62, 4206), (65, 4266), (69, 4314),

Gene: Juice456_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Juice456_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: Kimberlium_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Kimberlium_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: Kingsley_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Kingsley_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Leozinho_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Leozinho_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: LilSpotty_4 Start: 3229, Stop: 3888, Start Num: 8

Candidate Starts for LilSpotty_4:

(4, 3193), (5, 3214), (Start: 8 @3229 has 1 MA's), (16, 3271), (21, 3304), (33, 3412), (35, 3451), (41, 3529), (44, 3562), (45, 3598), (51, 3664), (59, 3748), (60, 3751), (62, 3787),

Gene: LittleShirley_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for LittleShirley_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: LongHai_8 Start: 5367, Stop: 5855, Start Num: 38

Candidate Starts for LongHai_8:

(2, 5064), (Start: 13 @5148 has 1 MA's), (21, 5205), (Start: 38 @5367 has 1 MA's), (47, 5568), (48, 5604), (49, 5634), (50, 5640), (52, 5655), (56, 5679), (57, 5721), (63, 5778), (66, 5835),

Gene: Lorde_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Lorde_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Lucia_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Lucia_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Maco6_5 Start: 4321, Stop: 4809, Start Num: 38

Candidate Starts for Maco6_5:

(2, 4018), (Start: 13 @4102 has 1 MA's), (21, 4159), (Start: 38 @4321 has 1 MA's), (45, 4450), (47, 4522), (48, 4558), (49, 4588), (50, 4594), (52, 4609), (56, 4633), (57, 4675), (63, 4732), (66, 4789),

Gene: Madiba_5 Start: 3603, Stop: 4328, Start Num: 7

Candidate Starts for Madiba_5:

(Start: 7 @3603 has 61 MA's), (14, 3630), (16, 3651), (20, 3678), (27, 3738), (32, 3777), (39, 3876), (43, 3945), (44, 3948), (51, 4077), (54, 4098), (62, 4206), (69, 4314),

Gene: Marker_5 Start: 3603, Stop: 4328, Start Num: 7

Candidate Starts for Marker_5:

(Start: 7 @3603 has 61 MA's), (14, 3630), (16, 3651), (20, 3678), (27, 3738), (32, 3777), (34, 3816), (39, 3876), (43, 3945), (44, 3948), (51, 4077), (54, 4098), (62, 4206), (69, 4314),

Gene: Misha28_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for Misha28_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Mova_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Mova_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: Mozy_5 Start: 3603, Stop: 4328, Start Num: 7

Candidate Starts for Mozy_5:

(Start: 7 @3603 has 61 MA's), (14, 3630), (15, 3639), (19, 3675), (20, 3678), (21, 3684), (25, 3726), (29, 3747), (30, 3750), (32, 3777), (39, 3876), (43, 3945), (44, 3948), (51, 4077), (54, 4098), (60, 4170), (69, 4314),

Gene: Muddy_7 Start: 5056, Stop: 5763, Start Num: 13

Candidate Starts for Muddy_7:

(Start: 13 @5056 has 1 MA's), (21, 5113), (Start: 38 @5275 has 1 MA's), (45, 5404), (47, 5476), (48, 5512), (49, 5542), (50, 5548), (52, 5563), (56, 5587), (57, 5629), (63, 5686), (66, 5743),

Gene: MulchExplorer_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for MulchExplorer_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: NoShow_4 Start: 3865, Stop: 4563, Start Num: 12

Candidate Starts for NoShow_4:

(10, 3862), (Start: 12 @3865 has 1 MA's), (23, 3958), (31, 3988), (40, 4123), (45, 4213), (52, 4372), (56, 4396), (57, 4438),

Gene: Oksu_5 Start: 3680, Stop: 4330, Start Num: 20

Candidate Starts for Oksu_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: OwlsT2W_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for OwlsT2W_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Peridot_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Peridot_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Piper2020_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for Piper2020_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Plumbus_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Plumbus_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: Pollywog_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Pollywog_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Quico_5 Start: 3602, Stop: 4327, Start Num: 7

Candidate Starts for Quico_5:

(Start: 7 @3602 has 61 MA's), (14, 3629), (15, 3638), (17, 3659), (19, 3674), (20, 3677), (21, 3683), (25, 3725), (29, 3746), (30, 3749), (32, 3776), (39, 3875), (43, 3944), (44, 3947), (45, 3983), (51, 4076), (54, 4097), (60, 4169), (69, 4313),

Gene: Ramsey_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Ramsey_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Rialto_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Rialto_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: RockyHorror_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for RockyHorror_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Salvus_8 Start: 5367, Stop: 5855, Start Num: 38

Candidate Starts for Salvus_8:

(2, 5064), (Start: 13 @5148 has 1 MA's), (21, 5205), (Start: 38 @5367 has 1 MA's), (47, 5568), (48, 5604), (49, 5634), (50, 5640), (52, 5655), (56, 5679), (57, 5721), (63, 5778), (66, 5835),

Gene: Sarma624_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Sarma624_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Seagreen_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Seagreen_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: SimranZ1_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for SimranZ1_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Slim_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Slim_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: Sparky_4 Start: 3760, Stop: 4665, Start Num: 1

Candidate Starts for Sparky_4:

(Start: 1 @3760 has 2 MA's), (9, 3850), (14, 3856), (15, 3865), (18, 3892), (24, 3952), (26, 3964), (Start: 28 @3973 has 1 MA's), (30, 3979), (36, 4066), (37, 4069), (42, 4150), (44, 4174), (53, 4384), (55, 4408), (58, 4489), (60, 4495), (62, 4531), (67, 4618), (68, 4627), (69, 4639),

Gene: Spikelee_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Spikelee_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Squirty_5 Start: 3603, Stop: 4328, Start Num: 7

Candidate Starts for Squirty_5:

(Start: 7 @3603 has 61 MA's), (14, 3630), (16, 3651), (20, 3678), (27, 3738), (32, 3777), (39, 3876), (43, 3945), (44, 3948), (51, 4077), (54, 4098), (62, 4206), (69, 4314),

Gene: Stap_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Stap_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Starcevich_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Starcevich_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Tchotchke_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Tchotchke_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: TootsiePop_5 Start: 3607, Stop: 4332, Start Num: 7

Candidate Starts for TootsiePop_5:

(Start: 7 @3607 has 61 MA's), (14, 3634), (16, 3655), (20, 3682), (27, 3742), (32, 3781), (39, 3880), (43, 3949), (44, 3952), (51, 4081), (54, 4102), (62, 4210), (69, 4318),

Gene: Tootsieroll_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Tootsieroll_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Totinger_5 Start: 3605, Stop: 4330, Start Num: 7

Candidate Starts for Totinger_5:

(Start: 7 @3605 has 61 MA's), (14, 3632), (16, 3653), (20, 3680), (27, 3740), (32, 3779), (39, 3878), (43, 3947), (44, 3950), (51, 4079), (54, 4100), (62, 4208), (69, 4316),

Gene: UncleRicky_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for UncleRicky_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),

Gene: Velveteen_5 Start: 3604, Stop: 4329, Start Num: 7

Candidate Starts for Velveteen_5:

(Start: 7 @3604 has 61 MA's), (14, 3631), (16, 3652), (20, 3679), (27, 3739), (32, 3778), (39, 3877), (43, 3946), (44, 3949), (51, 4078), (54, 4099), (62, 4207), (69, 4315),