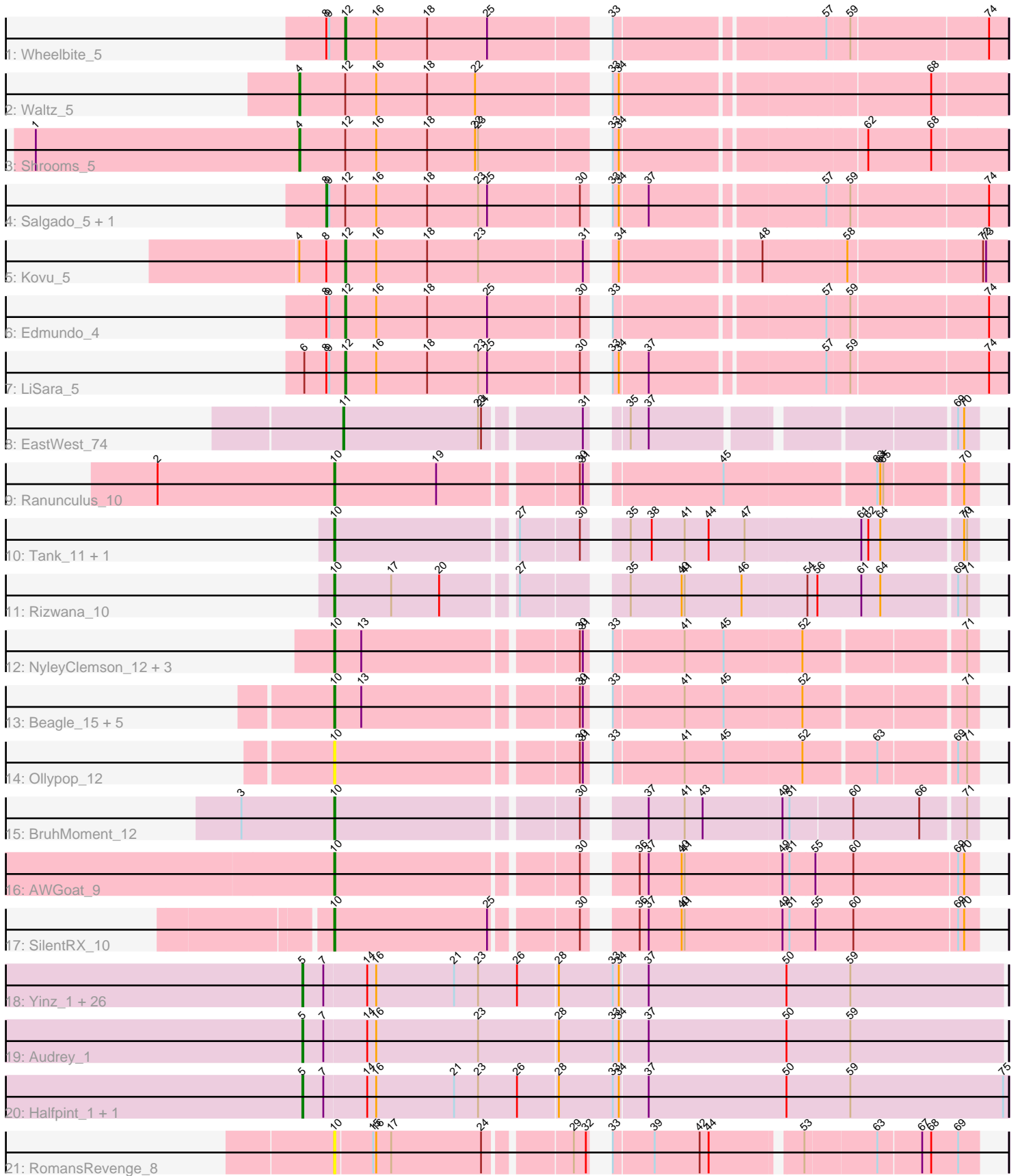


# Pham 202970



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 202970 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202970 has 58 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Wheelbite\_5
- Track 2 : Waltz\_5
- Track 3 : Shrooms\_5
- Track 4 : Salgado\_5, Laroye\_5
- Track 5 : Kovu\_5
- Track 6 : Edmundo\_4
- Track 7 : LiSara\_5
- Track 8 : EastWest\_74
- Track 9 : Ranunculus\_10
- Track 10 : Tank\_11, Wilde\_11
- Track 11 : Rizwana\_10
- Track 12 : NyleyClemson\_12, RazzB\_10, MellowYellow\_12, Forrestell\_11
- Track 13 : Beagle\_15, Pureglobe5\_16, Pointis\_14, Odyssey395\_16, Kubulix\_14, DogYard\_13
- Track 14 : Ollypop\_12
- Track 15 : BruhMoment\_12
- Track 16 : AWGoat\_9
- Track 17 : SilentRX\_10
- Track 18 : Yinz\_1, Athena\_1, Briakila\_1, Phlyer\_1, Neos5\_1, Akoma\_1, Rita1961\_1, Gervas\_1, HarveySr\_1, MmasiCarm\_1, Baloo\_1, OrangeOswald\_1, GlenHope\_1, Devonte\_1, Obutu\_1, RagingRooster\_1, ChaChing\_1, SynergyX\_1, Marley1013\_1, RomaT\_1, Nozo\_1, Compostia\_1, Gadget\_1, Deenasa\_1, Heathcliff\_1, Daisy\_1, Corofin\_1
- Track 19 : Audrey\_1
- Track 20 : Halfpint\_1, Casbah\_1
- Track 21 : RomansRevenge\_8

### ***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 30 of the 51 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akoma\_1, Athena\_1, Audrey\_1, Baloo\_1, Briakila\_1, Casbah\_1, ChaChing\_1, Compostia\_1, Corofin\_1, Daisy\_1, Deenasa\_1, Devonte\_1, Gadget\_1, Gervas\_1, GlenHope\_1, Halfpint\_1, HarveySr\_1, Heathcliff\_1, Marley1013\_1, MmasiCarm\_1, Neos5\_1, Nozo\_1, Obutu\_1, OrangeOswald\_1, Phlyer\_1, RagingRooster\_1, Rita1961\_1, RomaT\_1, SynergyX\_1, Yinz\_1,

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

- 

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

- AWGoat\_9, Beagle\_15, BruhMoment\_12, DogYard\_13, EastWest\_74, Edmundo\_4, Forrestell\_11, Kovu\_5, Kubulix\_14, Laroye\_5, LiSara\_5, MellowYellow\_12, NyleyClemson\_12, Odyssey395\_16, Ollypop\_12, Pointis\_14, Pureglobe5\_16, Ranunculus\_10, RazzB\_10, Rizwana\_10, RomansRevenge\_8, Salgado\_5, Shrooms\_5, SilentRX\_10, Tank\_11, Waltz\_5, Wheelbite\_5, Wilde\_11,

### Summary by start number:

Start 4:

- Found in 3 of 58 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 2 of 51
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Shrooms\_5 (AL), Waltz\_5 (AL),

Start 5:

- Found in 30 of 58 ( 51.7% ) of genes in pham
- Manual Annotations of this start: 30 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Akoma\_1 (B3), Athena\_1 (B3), Audrey\_1 (B3), Baloo\_1 (B3), Briakila\_1 (B3), Casbah\_1 (B3), ChaChing\_1 (B3), Compostia\_1 (B3), Corofin\_1 (B3), Daisy\_1 (B3), Deenasa\_1 (B3), Devonte\_1 (B3), Gadget\_1 (B3), Gervas\_1 (B3), GlenHope\_1 (B3), Halfpint\_1 (B3), HarveySr\_1 (B3), Heathcliff\_1 (B3), Marley1013\_1 (B3), MmasiCarm\_1 (B3), Neos5\_1 (B3), Nozo\_1 (B3), Obutu\_1 (B3), OrangeOswald\_1 (B3), Phlyer\_1 (B3), RagingRooster\_1 (B3), Rita1961\_1 (B3), RomaT\_1 (B3), SynergyX\_1 (B3), Yinz\_1 (B3),

Start 8:

- Found in 6 of 58 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 2 of 51
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Laroye\_5 (AL), Salgado\_5 (AL),

Start 10:

- Found in 19 of 58 ( 32.8% ) of genes in pham
- Manual Annotations of this start: 12 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_9 (AP4), Beagle\_15 (AP2), BruhMoment\_12 (AP3), DogYard\_13 (AP2), Forrestell\_11 (AP2), Kubulix\_14 (AP2), MellowYellow\_12 (AP2), NyleyClemson\_12 (AP2), Odyssey395\_16 (AP2), Ollypop\_12 (AP2), Pointis\_14 (AP2), Pureglobe5\_16 (AP2), Ranunculus\_10 (AP), RazzB\_10 (AP2), Rizwana\_10 (AP1), RomansRevenge\_8 (singleton), SilentRX\_10 (AP4), Tank\_11 (AP1), Wilde\_11 (AP1),

Start 11:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 51
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EastWest\_74 (AO),

Start 12:

- Found in 8 of 58 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 4 of 51
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Edmundo\_4 (AL), Kovu\_5 (AL), LiSara\_5 (AL), Wheelbite\_5 (AL),

**Summary by clusters:**

There are 9 clusters represented in this pham: singleton, AP2, AP3, AP1, AL, AP4, AP, AO, B3,

Info for manual annotations of cluster AL:

- Start number 4 was manually annotated 2 times for cluster AL.
- Start number 8 was manually annotated 2 times for cluster AL.
- Start number 12 was manually annotated 4 times for cluster AL.

Info for manual annotations of cluster AO:

- Start number 11 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AP:

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

Info for manual annotations of cluster AP1:

- Start number 10 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 10 was manually annotated 5 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 10 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 10 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster B3:

- Start number 5 was manually annotated 30 times for cluster B3.

**Gene Information:**

Gene: AWGoat\_9 Start: 3580, Stop: 4173, Start Num: 10

Candidate Starts for AWGoat\_9:

(Start: 10 @3580 has 12 MA's), (30, 3808), (36, 3844), (37, 3853), (40, 3886), (41, 3889), (49, 3985), (51, 3991), (55, 4015), (60, 4051), (69, 4153), (70, 4159),

Gene: Akoma\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Akoma\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Athena\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Athena\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Audrey\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Audrey\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (23, 175), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Baloo\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Baloo\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Beagle\_15 Start: 4696, Stop: 5277, Start Num: 10

Candidate Starts for Beagle\_15:

(Start: 10 @4696 has 12 MA's), (13, 4723), (30, 4924), (31, 4927), (33, 4933), (41, 5002), (45, 5041), (52, 5116), (71, 5266),

Gene: Briakila\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Briakila\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: BruhMoment\_12 Start: 4721, Stop: 5308, Start Num: 10

Candidate Starts for BruhMoment\_12:

(3, 4628), (Start: 10 @4721 has 12 MA's), (30, 4949), (37, 4994), (41, 5030), (43, 5048), (49, 5126), (51, 5132), (60, 5189), (66, 5255), (71, 5297),

Gene: Casbah\_1 Start: 1, Stop: 699, Start Num: 5

Candidate Starts for Casbah\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541), (75, 694),

Gene: ChaChing\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for ChaChing\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Compostia\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Compostia\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Corofin\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Corofin\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Daisy\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Daisy\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Deenasa\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Deenasa\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Devonte\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Devonte\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: DogYard\_13 Start: 4766, Stop: 5347, Start Num: 10

Candidate Starts for DogYard\_13:

(Start: 10 @4766 has 12 MA's), (13, 4793), (30, 4994), (31, 4997), (33, 5003), (41, 5072), (45, 5111), (52, 5186), (71, 5336),

Gene: EastWest\_74 Start: 43726, Stop: 44280, Start Num: 11

Candidate Starts for EastWest\_74:

(Start: 11 @43726 has 1 MA's), (23, 43861), (24, 43864), (31, 43951), (35, 43972), (37, 43990), (69, 44260), (70, 44266),

Gene: Edmundo\_4 Start: 3516, Stop: 4121, Start Num: 12

Candidate Starts for Edmundo\_4:

(Start: 8 @3498 has 2 MA's), (9, 3501), (Start: 12 @3516 has 4 MA's), (16, 3546), (18, 3597), (25, 3657), (30, 3747), (33, 3756), (57, 3951), (59, 3972), (74, 4104),

Gene: Forrestell\_11 Start: 4123, Stop: 4704, Start Num: 10

Candidate Starts for Forrestell\_11:

(Start: 10 @4123 has 12 MA's), (13, 4150), (30, 4351), (31, 4354), (33, 4360), (41, 4429), (45, 4468), (52, 4543), (71, 4693),

Gene: Gadget\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Gadget\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Gervas\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Gervas\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: GlenHope\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for GlenHope\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Halfpint\_1 Start: 1, Stop: 699, Start Num: 5

Candidate Starts for Halfpint\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541), (75, 694),

Gene: HarveySr\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for HarveySr\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Heathcliff\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Heathcliff\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Kovu\_5 Start: 3470, Stop: 4075, Start Num: 12

Candidate Starts for Kovu\_5:

(Start: 4 @3425 has 2 MA's), (Start: 8 @3452 has 2 MA's), (Start: 12 @3470 has 4 MA's), (16, 3500), (18, 3551), (23, 3602), (31, 3704), (34, 3716), (48, 3845), (58, 3923), (72, 4052), (73, 4055),

Gene: Kubulix\_14 Start: 4895, Stop: 5476, Start Num: 10

Candidate Starts for Kubulix\_14:

(Start: 10 @4895 has 12 MA's), (13, 4922), (30, 5123), (31, 5126), (33, 5132), (41, 5201), (45, 5240), (52, 5315), (71, 5465),

Gene: Laroye\_5 Start: 3276, Stop: 3899, Start Num: 8

Candidate Starts for Laroye\_5:

(Start: 8 @3276 has 2 MA's), (9, 3279), (Start: 12 @3294 has 4 MA's), (16, 3324), (18, 3375), (23, 3426), (25, 3435), (30, 3525), (33, 3534), (34, 3540), (37, 3567), (57, 3729), (59, 3750), (74, 3882),

Gene: LiSara\_5 Start: 3325, Stop: 3930, Start Num: 12

Candidate Starts for LiSara\_5:

(6, 3286), (Start: 8 @3307 has 2 MA's), (9, 3310), (Start: 12 @3325 has 4 MA's), (16, 3355), (18, 3406), (23, 3457), (25, 3466), (30, 3556), (33, 3565), (34, 3571), (37, 3598), (57, 3760), (59, 3781), (74, 3913),

Gene: Marley1013\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Marley1013\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: MellowYellow\_12 Start: 4153, Stop: 4734, Start Num: 10

Candidate Starts for MellowYellow\_12:

(Start: 10 @4153 has 12 MA's), (13, 4180), (30, 4381), (31, 4384), (33, 4390), (41, 4459), (45, 4498), (52, 4573), (71, 4723),

Gene: MmasiCarm\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for MmasiCarm\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Neos5\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Neos5\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Nozo\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Nozo\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: NyleyClemson\_12 Start: 4095, Stop: 4676, Start Num: 10

Candidate Starts for NyleyClemson\_12:

(Start: 10 @4095 has 12 MA's), (13, 4122), (30, 4323), (31, 4326), (33, 4332), (41, 4401), (45, 4440), (52, 4515), (71, 4665),

Gene: Obutu\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Obutu\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Odyssey395\_16 Start: 4894, Stop: 5475, Start Num: 10

Candidate Starts for Odyssey395\_16:

(Start: 10 @4894 has 12 MA's), (13, 4921), (30, 5122), (31, 5125), (33, 5131), (41, 5200), (45, 5239), (52, 5314), (71, 5464),

Gene: Ollypop\_12 Start: 4602, Stop: 5183, Start Num: 10

Candidate Starts for Ollypop\_12:

(Start: 10 @4602 has 12 MA's), (30, 4830), (31, 4833), (33, 4839), (41, 4908), (45, 4947), (52, 5022), (63, 5091), (69, 5163), (71, 5172),

Gene: OrangeOswald\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for OrangeOswald\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Phlyer\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Phlyer\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Pointis\_14 Start: 4895, Stop: 5476, Start Num: 10

Candidate Starts for Pointis\_14:

(Start: 10 @4895 has 12 MA's), (13, 4922), (30, 5123), (31, 5126), (33, 5132), (41, 5201), (45, 5240), (52, 5315), (71, 5465),

Gene: Pureglobe5\_16 Start: 4908, Stop: 5489, Start Num: 10

Candidate Starts for Pureglobe5\_16:

(Start: 10 @4908 has 12 MA's), (13, 4935), (30, 5136), (31, 5139), (33, 5145), (41, 5214), (45, 5253), (52, 5328), (71, 5478),

Gene: RagingRooster\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for RagingRooster\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),



Gene: Ranunculus\_10 Start: 4388, Stop: 4969, Start Num: 10

Candidate Starts for Ranunculus\_10:

(2, 4211), (Start: 10 @4388 has 12 MA's), (19, 4490), (30, 4616), (31, 4619), (45, 4733), (63, 4877), (64, 4880), (65, 4883), (70, 4955),

Gene: RazzB\_10 Start: 3923, Stop: 4504, Start Num: 10

Candidate Starts for RazzB\_10:

(Start: 10 @3923 has 12 MA's), (13, 3950), (30, 4151), (31, 4154), (33, 4160), (41, 4229), (45, 4268), (52, 4343), (71, 4493),

Gene: Rita1961\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Rita1961\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Rizwana\_10 Start: 4484, Stop: 5074, Start Num: 10

Candidate Starts for Rizwana\_10:

(Start: 10 @4484 has 12 MA's), (17, 4541), (20, 4589), (27, 4655), (35, 4739), (40, 4790), (41, 4793), (46, 4850), (54, 4913), (56, 4922), (61, 4964), (64, 4982), (69, 5054), (71, 5063),

Gene: RomaT\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for RomaT\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: RomansRevenge\_8 Start: 3035, Stop: 3610, Start Num: 10

Candidate Starts for RomansRevenge\_8:

(Start: 10 @3035 has 12 MA's), (15, 3071), (16, 3074), (17, 3089), (24, 3179), (29, 3254), (32, 3266), (33, 3269), (39, 3308), (42, 3353), (44, 3362), (53, 3443), (63, 3512), (67, 3554), (68, 3563), (69, 3590),

Gene: Salgado\_5 Start: 3284, Stop: 3907, Start Num: 8

Candidate Starts for Salgado\_5:

(Start: 8 @3284 has 2 MA's), (9, 3287), (Start: 12 @3302 has 4 MA's), (16, 3332), (18, 3383), (23, 3434), (25, 3443), (30, 3533), (33, 3542), (34, 3548), (37, 3575), (57, 3737), (59, 3758), (74, 3890),

Gene: Shrooms\_5 Start: 3310, Stop: 3960, Start Num: 4

Candidate Starts for Shrooms\_5:

(1, 3046), (Start: 4 @3310 has 2 MA's), (Start: 12 @3355 has 4 MA's), (16, 3385), (18, 3436), (22, 3484), (23, 3487), (33, 3595), (34, 3601), (62, 3826), (68, 3889),

Gene: SilentRX\_10 Start: 3301, Stop: 3894, Start Num: 10

Candidate Starts for SilentRX\_10:

(Start: 10 @3301 has 12 MA's), (25, 3454), (30, 3529), (36, 3565), (37, 3574), (40, 3607), (41, 3610), (49, 3706), (51, 3712), (55, 3736), (60, 3772), (69, 3874), (70, 3880),

Gene: SynergyX\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for SynergyX\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),

Gene: Tank\_11 Start: 4502, Stop: 5092, Start Num: 10

Candidate Starts for Tank\_11:

(Start: 10 @4502 has 12 MA's), (27, 4673), (30, 4730), (35, 4757), (38, 4778), (41, 4811), (44, 4835), (47, 4871), (61, 4982), (62, 4988), (64, 5000), (70, 5078), (71, 5081),

Gene: Waltz\_5 Start: 3398, Stop: 4048, Start Num: 4

Candidate Starts for Waltz\_5:

(Start: 4 @3398 has 2 MA's), (Start: 12 @3443 has 4 MA's), (16, 3473), (18, 3524), (22, 3572), (33, 3683), (34, 3689), (68, 3977),

Gene: Wheelbite\_5 Start: 3393, Stop: 3998, Start Num: 12

Candidate Starts for Wheelbite\_5:

(Start: 8 @3375 has 2 MA's), (9, 3378), (Start: 12 @3393 has 4 MA's), (16, 3423), (18, 3474), (25, 3534), (33, 3633), (57, 3828), (59, 3849), (74, 3981),

Gene: Wilde\_11 Start: 4430, Stop: 5020, Start Num: 10

Candidate Starts for Wilde\_11:

(Start: 10 @4430 has 12 MA's), (27, 4601), (30, 4658), (35, 4685), (38, 4706), (41, 4739), (44, 4763), (47, 4799), (61, 4910), (62, 4916), (64, 4928), (70, 5006), (71, 5009),

Gene: Yinz\_1 Start: 1, Stop: 693, Start Num: 5

Candidate Starts for Yinz\_1:

(Start: 5 @1 has 30 MA's), (7, 22), (14, 64), (16, 73), (21, 151), (23, 175), (26, 214), (28, 253), (33, 307), (34, 313), (37, 340), (50, 478), (59, 541),