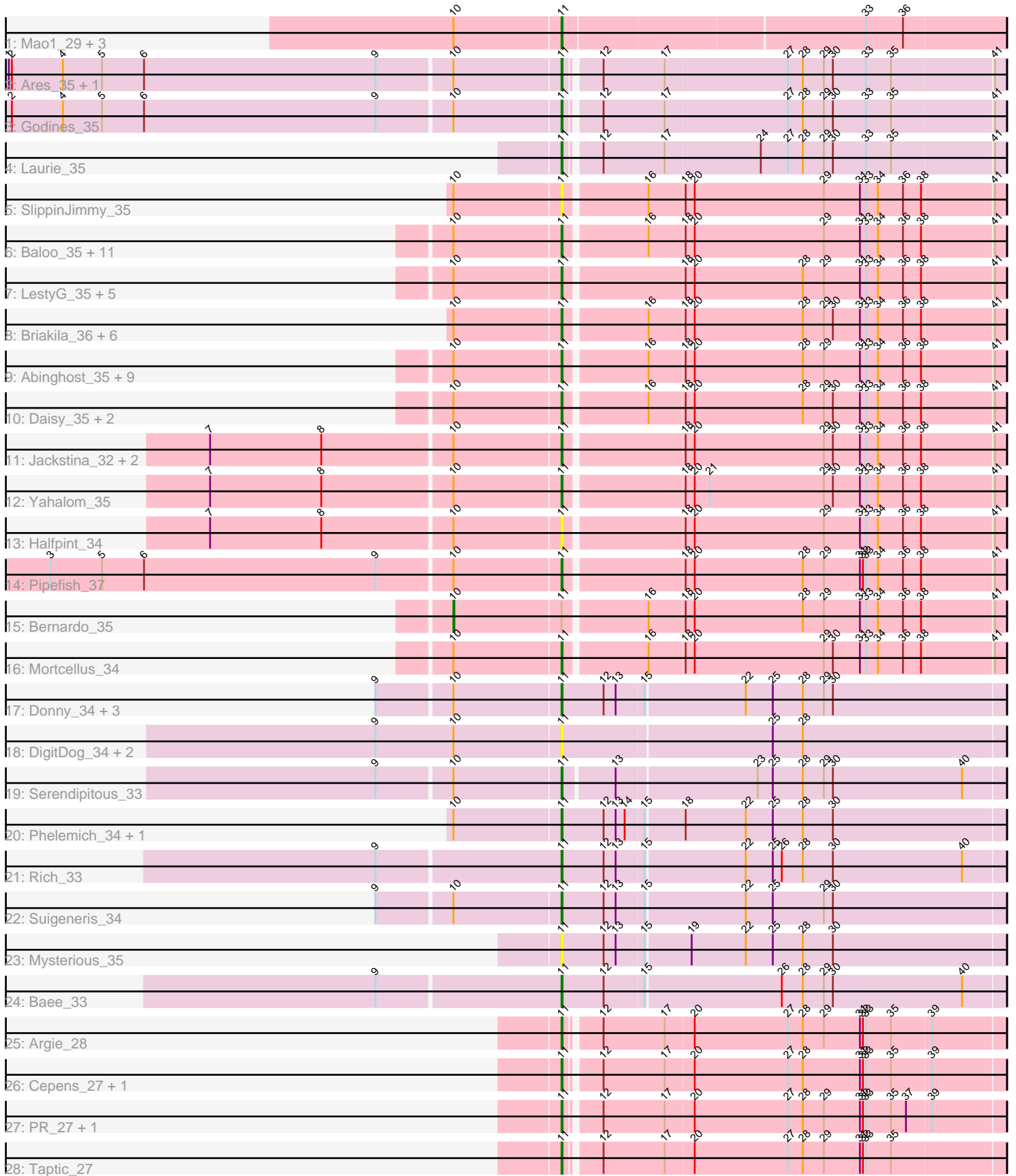


# Pham 163567



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 163567 Report

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

Pham number 163567 has 75 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Mao1\_29, Dori\_31, Sejanus\_30, Mask\_30
- Track 2 : Ares\_35, Qyrzula\_33
- Track 3 : Godines\_35
- Track 4 : Laurie\_35
- Track 5 : SlippinJimmy\_35
- Track 6 : Baloo\_35, Corofin\_35, Morty007\_35, Deenasa\_35, Nozo\_35, Audrey\_35, Neos5\_35, Heathcliff\_35, OrangeOswald\_35, Marley1013\_35, ChaChing\_35, Athena\_36
- Track 7 : LestyG\_35, Casbah\_34, Ben11\_34, Gervas\_35, Kronus\_34, Phayeta\_36
- Track 8 : Briakila\_36, HarveySr\_35, Gadjet\_36, Kamiyu\_35, Phlyer\_35, Yinz\_35, Phaedrus\_33
- Track 9 : Abinghost\_35, Philly\_34, Devonte\_35, Rita1961\_35, MmasiCarm\_35, SynergyX\_35, Chandler\_35, RagingRooster\_35, Obutu\_35, Tydolla\_35
- Track 10 : Daisy\_35, RomaT\_35, Akoma\_35
- Track 11 : Jackstina\_32, Compostia\_36, GlenHope\_36
- Track 12 : Yahalom\_35
- Track 13 : Halfpint\_34
- Track 14 : Pipefish\_37
- Track 15 : Bernardo\_35
- Track 16 : Mortcellus\_34
- Track 17 : Donny\_34, EastView9101\_34, Acadian\_34, SirJeffery\_34
- Track 18 : DigitDog\_34, Nangang\_34, StinkyVeggy\_36
- Track 19 : Serendipitous\_33
- Track 20 : Phelemich\_34, Reprobate\_34
- Track 21 : Rich\_33
- Track 22 : Suigeneris\_34
- Track 23 : Mysterious\_35
- Track 24 : Bae\_33
- Track 25 : Argie\_28
- Track 26 : Cepens\_27, Megabear\_27
- Track 27 : PR\_27, D12\_27
- Track 28 : Taptic\_27

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

The start number called the most often in the published annotations is 11, it was called in 64 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost\_35, Acadian\_34, Akoma\_35, Ares\_35, Argie\_28, Athena\_36, Audrey\_35, Bae\_33, Baloo\_35, Ben11\_34, Briakila\_36, Casbah\_34, Cepens\_27, ChaChing\_35, Chandler\_35, Compostia\_36, Corofin\_35, D12\_27, Daisy\_35, Deenasa\_35, Devonte\_35, DigitDog\_34, Donny\_34, Dori\_31, EastView9101\_34, Gadget\_36, Gervas\_35, GlenHope\_36, Godines\_35, Halfpint\_34, HarveySr\_35, Heathcliff\_35, Jackstina\_32, Kamiyu\_35, Kronus\_34, Laurie\_35, LestyG\_35, Mao1\_29, Marley1013\_35, Mask\_30, Megabear\_27, MmasiCarm\_35, Mortcellus\_34, Morty007\_35, Mysterious\_35, Nangang\_34, Neos5\_35, Nozo\_35, Obutu\_35, OrangeOswald\_35, PR\_27, Phaedrus\_33, Phayeta\_36, Phelemich\_34, Philly\_34, Phlyer\_35, Pipefish\_37, Qyrzula\_33, RagingRooster\_35, Reprobate\_34, Rich\_33, Rita1961\_35, RomaT\_35, Sejanus\_30, Serendipitous\_33, SirJeffery\_34, SlippinJimmy\_35, StinkyVeggy\_36, Suigeneris\_34, SynergyX\_35, Taptic\_27, Tydolla\_35, Yahalom\_35, Yinz\_35,

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

- Bernardo\_35,

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

- 

### Summary by start number:

Start 10:

- Found in 65 of 75 ( 86.7% ) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Bernardo\_35 (B3),

Start 11:

- Found in 75 of 75 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 64 of 65
- Called 98.7% of time when present
- Phage (with cluster) where this start called: Abinghost\_35 (B3), Acadian\_34 (B5), Akoma\_35 (B3), Ares\_35 (B2), Argie\_28 (W), Athena\_36 (B3), Audrey\_35 (B3), Bae\_33 (B5), Baloo\_35 (B3), Ben11\_34 (B3), Briakila\_36 (B3), Casbah\_34 (B3), Cepens\_27 (W), ChaChing\_35 (B3), Chandler\_35 (B3), Compostia\_36 (B3), Corofin\_35 (B3), D12\_27 (W), Daisy\_35 (B3), Deenasa\_35 (B3), Devonte\_35 (B3), DigitDog\_34 (B5), Donny\_34 (B5), Dori\_31 (AD), EastView9101\_34 (B5), Gadget\_36 (B3), Gervas\_35 (B3), GlenHope\_36 (B3), Godines\_35 (B2), Halfpint\_34 (B3), HarveySr\_35 (B3), Heathcliff\_35 (B3), Jackstina\_32 (B3), Kamiyu\_35 (B3), Kronus\_34 (B3), Laurie\_35 (B2), LestyG\_35 (B3), Mao1\_29 (AD), Marley1013\_35 (B3), Mask\_30 (AD), Megabear\_27 (W), MmasiCarm\_35 (B3), Mortcellus\_34 (B3), Morty007\_35 (B3), Mysterious\_35 (B5), Nangang\_34 (B5), Neos5\_35 (B3), Nozo\_35 (B3), Obutu\_35 (B3), OrangeOswald\_35 (B3), PR\_27 (W), Phaedrus\_33 (B3), Phayeta\_36 (B3), Phelemich\_34 (B5), Philly\_34 (B3), Phlyer\_35 (B3), Pipefish\_37 (B3), Qyrzula\_33 (B2), RagingRooster\_35 (B3), Reprobate\_34 (B5), Rich\_33 (B5), Rita1961\_35 (B3), RomaT\_35 (B3), Sejanus\_30 (AD), Serendipitous\_33 (B5), SirJeffery\_34 (B5), SlippinJimmy\_35 (B3), StinkyVeggy\_36 (B5), Suigeneris\_34 (B5),

SynergyX\_35 (B3), Taptic\_27 (W), Tydolla\_35 (B3), Yahalom\_35 (B3), Yinz\_35 (B3),

### **Summary by clusters:**

There are 5 clusters represented in this pham: B5, B2, AD, W, B3,

Info for manual annotations of cluster AD:

- Start number 11 was manually annotated 3 times for cluster AD.

Info for manual annotations of cluster B2:

- Start number 11 was manually annotated 4 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 10 was manually annotated 1 time for cluster B3.
- Start number 11 was manually annotated 43 times for cluster B3.

Info for manual annotations of cluster B5:

- Start number 11 was manually annotated 8 times for cluster B5.

Info for manual annotations of cluster W:

- Start number 11 was manually annotated 6 times for cluster W.

### **Gene Information:**

Gene: Abinghost\_35 Start: 33840, Stop: 34265, Start Num: 11

Candidate Starts for Abinghost\_35:

(Start: 10 @33735 has 1 MA's), (Start: 11 @33840 has 64 MA's), (16, 33918), (18, 33951), (20, 33960), (28, 34068), (29, 34089), (31, 34125), (33, 34131), (34, 34143), (36, 34167), (38, 34185), (41, 34254),

Gene: Acadian\_34 Start: 34513, Stop: 34947, Start Num: 11

Candidate Starts for Acadian\_34:

(9, 34336), (Start: 10 @34408 has 1 MA's), (Start: 11 @34513 has 64 MA's), (12, 34555), (13, 34567), (15, 34594), (22, 34690), (25, 34717), (28, 34747), (29, 34768), (30, 34777),

Gene: Akoma\_35 Start: 33844, Stop: 34269, Start Num: 11

Candidate Starts for Akoma\_35:

(Start: 10 @33739 has 1 MA's), (Start: 11 @33844 has 64 MA's), (16, 33922), (18, 33955), (20, 33964), (28, 34072), (29, 34093), (30, 34102), (31, 34129), (33, 34135), (34, 34147), (36, 34171), (38, 34189), (41, 34258),

Gene: Ares\_35 Start: 34315, Stop: 34737, Start Num: 11

Candidate Starts for Ares\_35:

(1, 33772), (2, 33775), (4, 33826), (5, 33865), (6, 33907), (9, 34138), (Start: 10 @34210 has 1 MA's), (Start: 11 @34315 has 64 MA's), (12, 34345), (17, 34405), (27, 34525), (28, 34540), (29, 34561), (30, 34570), (33, 34603), (35, 34627), (41, 34726),

Gene: Argie\_28 Start: 31290, Stop: 31712, Start Num: 11

Candidate Starts for Argie\_28:

(Start: 11 @31290 has 64 MA's), (12, 31320), (17, 31380), (20, 31407), (27, 31500), (28, 31515), (29, 31536), (31, 31572), (32, 31575), (33, 31578), (35, 31602), (39, 31641),

Gene: Athena\_36 Start: 34591, Stop: 35016, Start Num: 11

Candidate Starts for Athena\_36:

(Start: 10 @34486 has 1 MA's), (Start: 11 @34591 has 64 MA's), (16, 34669), (18, 34702), (20, 34711), (29, 34840), (31, 34876), (33, 34882), (34, 34894), (36, 34918), (38, 34936), (41, 35005),

Gene: Audrey\_35 Start: 33840, Stop: 34265, Start Num: 11

Candidate Starts for Audrey\_35:

(Start: 10 @33735 has 1 MA's), (Start: 11 @33840 has 64 MA's), (16, 33918), (18, 33951), (20, 33960), (29, 34089), (31, 34125), (33, 34131), (34, 34143), (36, 34167), (38, 34185), (41, 34254),

Gene: Bae\_33 Start: 34330, Stop: 34764, Start Num: 11

Candidate Starts for Bae\_33:

(9, 34150), (Start: 11 @34330 has 64 MA's), (12, 34372), (15, 34411), (26, 34543), (28, 34564), (29, 34585), (30, 34594), (40, 34723),

Gene: Baloo\_35 Start: 33843, Stop: 34268, Start Num: 11

Candidate Starts for Baloo\_35:

(Start: 10 @33738 has 1 MA's), (Start: 11 @33843 has 64 MA's), (16, 33921), (18, 33954), (20, 33963), (29, 34092), (31, 34128), (33, 34134), (34, 34146), (36, 34170), (38, 34188), (41, 34257),

Gene: Ben11\_34 Start: 33662, Stop: 34087, Start Num: 11

Candidate Starts for Ben11\_34:

(Start: 10 @33557 has 1 MA's), (Start: 11 @33662 has 64 MA's), (18, 33773), (20, 33782), (28, 33890), (29, 33911), (31, 33947), (33, 33953), (34, 33965), (36, 33989), (38, 34007), (41, 34076),

Gene: Bernardo\_35 Start: 33825, Stop: 34355, Start Num: 10

Candidate Starts for Bernardo\_35:

(Start: 10 @33825 has 1 MA's), (Start: 11 @33930 has 64 MA's), (16, 34008), (18, 34041), (20, 34050), (28, 34158), (29, 34179), (31, 34215), (33, 34221), (34, 34233), (36, 34257), (38, 34275), (41, 34344),

Gene: Briakila\_36 Start: 34610, Stop: 35035, Start Num: 11

Candidate Starts for Briakila\_36:

(Start: 10 @34505 has 1 MA's), (Start: 11 @34610 has 64 MA's), (16, 34688), (18, 34721), (20, 34730), (28, 34838), (29, 34859), (30, 34868), (31, 34895), (33, 34901), (34, 34913), (36, 34937), (38, 34955), (41, 35024),

Gene: Casbah\_34 Start: 33692, Stop: 34117, Start Num: 11

Candidate Starts for Casbah\_34:

(Start: 10 @33587 has 1 MA's), (Start: 11 @33692 has 64 MA's), (18, 33803), (20, 33812), (28, 33920), (29, 33941), (31, 33977), (33, 33983), (34, 33995), (36, 34019), (38, 34037), (41, 34106),

Gene: Cepens\_27 Start: 31005, Stop: 31427, Start Num: 11

Candidate Starts for Cepens\_27:

(Start: 11 @31005 has 64 MA's), (12, 31035), (17, 31095), (20, 31122), (27, 31215), (28, 31230), (31, 31287), (32, 31290), (33, 31293), (35, 31317), (39, 31356),

Gene: ChaChing\_35 Start: 33855, Stop: 34280, Start Num: 11

Candidate Starts for ChaChing\_35:

(Start: 10 @33750 has 1 MA's), (Start: 11 @33855 has 64 MA's), (16, 33933), (18, 33966), (20, 33975), (29, 34104), (31, 34140), (33, 34146), (34, 34158), (36, 34182), (38, 34200), (41, 34269),

Gene: Chandler\_35 Start: 34623, Stop: 35048, Start Num: 11

Candidate Starts for Chandler\_35:

(Start: 10 @34518 has 1 MA's), (Start: 11 @34623 has 64 MA's), (16, 34701), (18, 34734), (20, 34743), (28, 34851), (29, 34872), (31, 34908), (33, 34914), (34, 34926), (36, 34950), (38, 34968), (41, 35037),

Gene: Compostia\_36 Start: 34271, Stop: 34696, Start Num: 11

Candidate Starts for Compostia\_36:

(7, 33929), (8, 34040), (Start: 10 @34166 has 1 MA's), (Start: 11 @34271 has 64 MA's), (18, 34382), (20, 34391), (29, 34520), (30, 34529), (31, 34556), (33, 34562), (34, 34574), (36, 34598), (38, 34616), (41, 34685),

Gene: Corofin\_35 Start: 33866, Stop: 34291, Start Num: 11

Candidate Starts for Corofin\_35:

(Start: 10 @33761 has 1 MA's), (Start: 11 @33866 has 64 MA's), (16, 33944), (18, 33977), (20, 33986), (29, 34115), (31, 34151), (33, 34157), (34, 34169), (36, 34193), (38, 34211), (41, 34280),

Gene: D12\_27 Start: 31575, Stop: 31997, Start Num: 11

Candidate Starts for D12\_27:

(Start: 11 @31575 has 64 MA's), (12, 31605), (17, 31665), (20, 31692), (27, 31785), (28, 31800), (29, 31821), (31, 31857), (32, 31860), (33, 31863), (35, 31887), (37, 31902), (39, 31926),

Gene: Daisy\_35 Start: 33867, Stop: 34292, Start Num: 11

Candidate Starts for Daisy\_35:

(Start: 10 @33762 has 1 MA's), (Start: 11 @33867 has 64 MA's), (16, 33945), (18, 33978), (20, 33987), (28, 34095), (29, 34116), (30, 34125), (31, 34152), (33, 34158), (34, 34170), (36, 34194), (38, 34212), (41, 34281),

Gene: Deenasa\_35 Start: 34606, Stop: 35031, Start Num: 11

Candidate Starts for Deenasa\_35:

(Start: 10 @34501 has 1 MA's), (Start: 11 @34606 has 64 MA's), (16, 34684), (18, 34717), (20, 34726), (29, 34855), (31, 34891), (33, 34897), (34, 34909), (36, 34933), (38, 34951), (41, 35020),

Gene: Devonte\_35 Start: 33831, Stop: 34256, Start Num: 11

Candidate Starts for Devonte\_35:

(Start: 10 @33726 has 1 MA's), (Start: 11 @33831 has 64 MA's), (16, 33909), (18, 33942), (20, 33951), (28, 34059), (29, 34080), (31, 34116), (33, 34122), (34, 34134), (36, 34158), (38, 34176), (41, 34245),

Gene: DigitDog\_34 Start: 34112, Stop: 34546, Start Num: 11

Candidate Starts for DigitDog\_34:

(9, 33929), (Start: 10 @34007 has 1 MA's), (Start: 11 @34112 has 64 MA's), (25, 34316), (28, 34346),

Gene: Donny\_34 Start: 34518, Stop: 34952, Start Num: 11

Candidate Starts for Donny\_34:

(9, 34341), (Start: 10 @34413 has 1 MA's), (Start: 11 @34518 has 64 MA's), (12, 34560), (13, 34572), (15, 34599), (22, 34695), (25, 34722), (28, 34752), (29, 34773), (30, 34782),

Gene: Dori\_31 Start: 30423, Stop: 30851, Start Num: 11

Candidate Starts for Dori\_31:

(Start: 10 @30318 has 1 MA's), (Start: 11 @30423 has 64 MA's), (33, 30714), (36, 30750),

Gene: EastView9101\_34 Start: 34168, Stop: 34602, Start Num: 11

Candidate Starts for EastView9101\_34:

(9, 33991), (Start: 10 @34063 has 1 MA's), (Start: 11 @34168 has 64 MA's), (12, 34210), (13, 34222), (15, 34249), (22, 34345), (25, 34372), (28, 34402), (29, 34423), (30, 34432),

Gene: Gadget\_36 Start: 33854, Stop: 34279, Start Num: 11

Candidate Starts for Gadget\_36:

(Start: 10 @33749 has 1 MA's), (Start: 11 @33854 has 64 MA's), (16, 33932), (18, 33965), (20, 33974), (28, 34082), (29, 34103), (30, 34112), (31, 34139), (33, 34145), (34, 34157), (36, 34181), (38, 34199), (41, 34268),

Gene: Gervas\_35 Start: 33821, Stop: 34246, Start Num: 11

Candidate Starts for Gervas\_35:

(Start: 10 @33716 has 1 MA's), (Start: 11 @33821 has 64 MA's), (18, 33932), (20, 33941), (28, 34049), (29, 34070), (31, 34106), (33, 34112), (34, 34124), (36, 34148), (38, 34166), (41, 34235),

Gene: GlenHope\_36 Start: 33834, Stop: 34259, Start Num: 11

Candidate Starts for GlenHope\_36:

(7, 33492), (8, 33603), (Start: 10 @33729 has 1 MA's), (Start: 11 @33834 has 64 MA's), (18, 33945), (20, 33954), (29, 34083), (30, 34092), (31, 34119), (33, 34125), (34, 34137), (36, 34161), (38, 34179), (41, 34248),

Gene: Godines\_35 Start: 34315, Stop: 34737, Start Num: 11

Candidate Starts for Godines\_35:

(2, 33775), (4, 33826), (5, 33865), (6, 33907), (9, 34138), (Start: 10 @34210 has 1 MA's), (Start: 11 @34315 has 64 MA's), (12, 34345), (17, 34405), (27, 34525), (28, 34540), (29, 34561), (30, 34570), (33, 34603), (35, 34627), (41, 34726),

Gene: Halfpint\_34 Start: 33660, Stop: 34085, Start Num: 11

Candidate Starts for Halfpint\_34:

(7, 33318), (8, 33429), (Start: 10 @33555 has 1 MA's), (Start: 11 @33660 has 64 MA's), (18, 33771), (20, 33780), (29, 33909), (31, 33945), (33, 33951), (34, 33963), (36, 33987), (38, 34005), (41, 34074),

Gene: HarveySr\_35 Start: 33827, Stop: 34252, Start Num: 11

Candidate Starts for HarveySr\_35:

(Start: 10 @33722 has 1 MA's), (Start: 11 @33827 has 64 MA's), (16, 33905), (18, 33938), (20, 33947), (28, 34055), (29, 34076), (30, 34085), (31, 34112), (33, 34118), (34, 34130), (36, 34154), (38, 34172), (41, 34241),

Gene: Heathcliff\_35 Start: 33805, Stop: 34230, Start Num: 11

Candidate Starts for Heathcliff\_35:

(Start: 10 @33700 has 1 MA's), (Start: 11 @33805 has 64 MA's), (16, 33883), (18, 33916), (20, 33925), (29, 34054), (31, 34090), (33, 34096), (34, 34108), (36, 34132), (38, 34150), (41, 34219),

Gene: Jackstina\_32 Start: 33764, Stop: 34189, Start Num: 11

Candidate Starts for Jackstina\_32:

(7, 33422), (8, 33533), (Start: 10 @33659 has 1 MA's), (Start: 11 @33764 has 64 MA's), (18, 33875), (20, 33884), (29, 34013), (30, 34022), (31, 34049), (33, 34055), (34, 34067), (36, 34091), (38, 34109), (41, 34178),

Gene: Kamiyu\_35 Start: 33813, Stop: 34238, Start Num: 11

Candidate Starts for Kamiyu\_35:

(Start: 10 @33708 has 1 MA's), (Start: 11 @33813 has 64 MA's), (16, 33891), (18, 33924), (20, 33933), (28, 34041), (29, 34062), (30, 34071), (31, 34098), (33, 34104), (34, 34116), (36, 34140), (38,

34158), (41, 34227),

Gene: Kronus\_34 Start: 34423, Stop: 34848, Start Num: 11

Candidate Starts for Kronus\_34:

(Start: 10 @34318 has 1 MA's), (Start: 11 @34423 has 64 MA's), (18, 34534), (20, 34543), (28, 34651), (29, 34672), (31, 34708), (33, 34714), (34, 34726), (36, 34750), (38, 34768), (41, 34837),

Gene: Laurie\_35 Start: 33756, Stop: 34178, Start Num: 11

Candidate Starts for Laurie\_35:

(Start: 11 @33756 has 64 MA's), (12, 33786), (17, 33846), (24, 33939), (27, 33966), (28, 33981), (29, 34002), (30, 34011), (33, 34044), (35, 34068), (41, 34167),

Gene: LestyG\_35 Start: 33844, Stop: 34269, Start Num: 11

Candidate Starts for LestyG\_35:

(Start: 10 @33739 has 1 MA's), (Start: 11 @33844 has 64 MA's), (18, 33955), (20, 33964), (28, 34072), (29, 34093), (31, 34129), (33, 34135), (34, 34147), (36, 34171), (38, 34189), (41, 34258),

Gene: Mao1\_29 Start: 30339, Stop: 30767, Start Num: 11

Candidate Starts for Mao1\_29:

(Start: 10 @30234 has 1 MA's), (Start: 11 @30339 has 64 MA's), (33, 30630), (36, 30666),

Gene: Marley1013\_35 Start: 34622, Stop: 35047, Start Num: 11

Candidate Starts for Marley1013\_35:

(Start: 10 @34517 has 1 MA's), (Start: 11 @34622 has 64 MA's), (16, 34700), (18, 34733), (20, 34742), (29, 34871), (31, 34907), (33, 34913), (34, 34925), (36, 34949), (38, 34967), (41, 35036),

Gene: Mask\_30 Start: 30332, Stop: 30760, Start Num: 11

Candidate Starts for Mask\_30:

(Start: 10 @30227 has 1 MA's), (Start: 11 @30332 has 64 MA's), (33, 30623), (36, 30659),

Gene: Megabear\_27 Start: 30948, Stop: 31370, Start Num: 11

Candidate Starts for Megabear\_27:

(Start: 11 @30948 has 64 MA's), (12, 30978), (17, 31038), (20, 31065), (27, 31158), (28, 31173), (31, 31230), (32, 31233), (33, 31236), (35, 31260), (39, 31299),

Gene: MmasiCarm\_35 Start: 33826, Stop: 34251, Start Num: 11

Candidate Starts for MmasiCarm\_35:

(Start: 10 @33721 has 1 MA's), (Start: 11 @33826 has 64 MA's), (16, 33904), (18, 33937), (20, 33946), (28, 34054), (29, 34075), (31, 34111), (33, 34117), (34, 34129), (36, 34153), (38, 34171), (41, 34240),

Gene: Mortcellus\_34 Start: 34478, Stop: 34903, Start Num: 11

Candidate Starts for Mortcellus\_34:

(Start: 10 @34373 has 1 MA's), (Start: 11 @34478 has 64 MA's), (16, 34556), (18, 34589), (20, 34598), (29, 34727), (30, 34736), (31, 34763), (33, 34769), (34, 34781), (36, 34805), (38, 34823), (41, 34892),

Gene: Morty007\_35 Start: 34622, Stop: 35047, Start Num: 11

Candidate Starts for Morty007\_35:

(Start: 10 @34517 has 1 MA's), (Start: 11 @34622 has 64 MA's), (16, 34700), (18, 34733), (20, 34742), (29, 34871), (31, 34907), (33, 34913), (34, 34925), (36, 34949), (38, 34967), (41, 35036),

Gene: Mysterious\_35 Start: 34790, Stop: 35224, Start Num: 11



Candidate Starts for Mysterious\_35:

(Start: 11 @34790 has 64 MA's), (12, 34832), (13, 34844), (15, 34871), (19, 34913), (22, 34967), (25, 34994), (28, 35024), (30, 35054),

Gene: Nangang\_34 Start: 34477, Stop: 34911, Start Num: 11

Candidate Starts for Nangang\_34:

(9, 34294), (Start: 10 @34372 has 1 MA's), (Start: 11 @34477 has 64 MA's), (25, 34681), (28, 34711),

Gene: Neos5\_35 Start: 34641, Stop: 35066, Start Num: 11

Candidate Starts for Neos5\_35:

(Start: 10 @34536 has 1 MA's), (Start: 11 @34641 has 64 MA's), (16, 34719), (18, 34752), (20, 34761), (29, 34890), (31, 34926), (33, 34932), (34, 34944), (36, 34968), (38, 34986), (41, 35055),

Gene: Nozo\_35 Start: 34602, Stop: 35027, Start Num: 11

Candidate Starts for Nozo\_35:

(Start: 10 @34497 has 1 MA's), (Start: 11 @34602 has 64 MA's), (16, 34680), (18, 34713), (20, 34722), (29, 34851), (31, 34887), (33, 34893), (34, 34905), (36, 34929), (38, 34947), (41, 35016),

Gene: Obutu\_35 Start: 33826, Stop: 34251, Start Num: 11

Candidate Starts for Obutu\_35:

(Start: 10 @33721 has 1 MA's), (Start: 11 @33826 has 64 MA's), (16, 33904), (18, 33937), (20, 33946), (28, 34054), (29, 34075), (31, 34111), (33, 34117), (34, 34129), (36, 34153), (38, 34171), (41, 34240),

Gene: OrangeOswald\_35 Start: 33843, Stop: 34268, Start Num: 11

Candidate Starts for OrangeOswald\_35:

(Start: 10 @33738 has 1 MA's), (Start: 11 @33843 has 64 MA's), (16, 33921), (18, 33954), (20, 33963), (29, 34092), (31, 34128), (33, 34134), (34, 34146), (36, 34170), (38, 34188), (41, 34257),

Gene: PR\_27 Start: 31552, Stop: 31974, Start Num: 11

Candidate Starts for PR\_27:

(Start: 11 @31552 has 64 MA's), (12, 31582), (17, 31642), (20, 31669), (27, 31762), (28, 31777), (29, 31798), (31, 31834), (32, 31837), (33, 31840), (35, 31864), (37, 31879), (39, 31903),

Gene: Phaedrus\_33 Start: 33763, Stop: 34188, Start Num: 11

Candidate Starts for Phaedrus\_33:

(Start: 10 @33658 has 1 MA's), (Start: 11 @33763 has 64 MA's), (16, 33841), (18, 33874), (20, 33883), (28, 33991), (29, 34012), (30, 34021), (31, 34048), (33, 34054), (34, 34066), (36, 34090), (38, 34108), (41, 34177),

Gene: Phayeta\_36 Start: 33708, Stop: 34133, Start Num: 11

Candidate Starts for Phayeta\_36:

(Start: 10 @33603 has 1 MA's), (Start: 11 @33708 has 64 MA's), (18, 33819), (20, 33828), (28, 33936), (29, 33957), (31, 33993), (33, 33999), (34, 34011), (36, 34035), (38, 34053), (41, 34122),

Gene: Phelemich\_34 Start: 34789, Stop: 35223, Start Num: 11

Candidate Starts for Phelemich\_34:

(Start: 10 @34684 has 1 MA's), (Start: 11 @34789 has 64 MA's), (12, 34831), (13, 34843), (14, 34852), (15, 34870), (18, 34906), (22, 34966), (25, 34993), (28, 35023), (30, 35053),

Gene: Philly\_34 Start: 33694, Stop: 34119, Start Num: 11

Candidate Starts for Philly\_34:

(Start: 10 @33589 has 1 MA's), (Start: 11 @33694 has 64 MA's), (16, 33772), (18, 33805), (20, 33814), (28, 33922), (29, 33943), (31, 33979), (33, 33985), (34, 33997), (36, 34021), (38, 34039), (41, 34108),

Gene: Phlyer\_35 Start: 34582, Stop: 35007, Start Num: 11

Candidate Starts for Phlyer\_35:

(Start: 10 @34477 has 1 MA's), (Start: 11 @34582 has 64 MA's), (16, 34660), (18, 34693), (20, 34702), (28, 34810), (29, 34831), (30, 34840), (31, 34867), (33, 34873), (34, 34885), (36, 34909), (38, 34927), (41, 34996),

Gene: Pipefish\_37 Start: 35235, Stop: 35660, Start Num: 11

Candidate Starts for Pipefish\_37:

(3, 34734), (5, 34785), (6, 34827), (9, 35058), (Start: 10 @35130 has 1 MA's), (Start: 11 @35235 has 64 MA's), (18, 35346), (20, 35355), (28, 35463), (29, 35484), (31, 35520), (32, 35523), (33, 35526), (34, 35538), (36, 35562), (38, 35580), (41, 35649),

Gene: Qyrzula\_33 Start: 34400, Stop: 34822, Start Num: 11

Candidate Starts for Qyrzula\_33:

(1, 33857), (2, 33860), (4, 33911), (5, 33950), (6, 33992), (9, 34223), (Start: 10 @34295 has 1 MA's), (Start: 11 @34400 has 64 MA's), (12, 34430), (17, 34490), (27, 34610), (28, 34625), (29, 34646), (30, 34655), (33, 34688), (35, 34712), (41, 34811),

Gene: RagingRooster\_35 Start: 33844, Stop: 34269, Start Num: 11

Candidate Starts for RagingRooster\_35:

(Start: 10 @33739 has 1 MA's), (Start: 11 @33844 has 64 MA's), (16, 33922), (18, 33955), (20, 33964), (28, 34072), (29, 34093), (31, 34129), (33, 34135), (34, 34147), (36, 34171), (38, 34189), (41, 34258),

Gene: Reprobate\_34 Start: 34794, Stop: 35228, Start Num: 11

Candidate Starts for Reprobate\_34:

(Start: 10 @34689 has 1 MA's), (Start: 11 @34794 has 64 MA's), (12, 34836), (13, 34848), (14, 34857), (15, 34875), (18, 34911), (22, 34971), (25, 34998), (28, 35028), (30, 35058),

Gene: Rich\_33 Start: 34300, Stop: 34734, Start Num: 11

Candidate Starts for Rich\_33:

(9, 34120), (Start: 11 @34300 has 64 MA's), (12, 34342), (13, 34354), (15, 34381), (22, 34477), (25, 34504), (26, 34513), (28, 34534), (30, 34564), (40, 34693),

Gene: Rita1961\_35 Start: 33827, Stop: 34252, Start Num: 11

Candidate Starts for Rita1961\_35:

(Start: 10 @33722 has 1 MA's), (Start: 11 @33827 has 64 MA's), (16, 33905), (18, 33938), (20, 33947), (28, 34055), (29, 34076), (31, 34112), (33, 34118), (34, 34130), (36, 34154), (38, 34172), (41, 34241),

Gene: RomaT\_35 Start: 34617, Stop: 35042, Start Num: 11

Candidate Starts for RomaT\_35:

(Start: 10 @34512 has 1 MA's), (Start: 11 @34617 has 64 MA's), (16, 34695), (18, 34728), (20, 34737), (28, 34845), (29, 34866), (30, 34875), (31, 34902), (33, 34908), (34, 34920), (36, 34944), (38, 34962), (41, 35031),

Gene: Sejanus\_30 Start: 31273, Stop: 31701, Start Num: 11

Candidate Starts for Sejanus\_30:

(Start: 10 @31168 has 1 MA's), (Start: 11 @31273 has 64 MA's), (33, 31564), (36, 31600),

Gene: Serendipitous\_33 Start: 34367, Stop: 34795, Start Num: 11

Candidate Starts for Serendipitous\_33:

(9, 34190), (Start: 10 @34262 has 1 MA's), (Start: 11 @34367 has 64 MA's), (13, 34415), (23, 34550), (25, 34565), (28, 34595), (29, 34616), (30, 34625), (40, 34754),

Gene: SirJeffery\_34 Start: 34515, Stop: 34949, Start Num: 11

Candidate Starts for SirJeffery\_34:

(9, 34338), (Start: 10 @34410 has 1 MA's), (Start: 11 @34515 has 64 MA's), (12, 34557), (13, 34569), (15, 34596), (22, 34692), (25, 34719), (28, 34749), (29, 34770), (30, 34779),

Gene: SlippinJimmy\_35 Start: 34609, Stop: 35034, Start Num: 11

Candidate Starts for SlippinJimmy\_35:

(Start: 10 @34504 has 1 MA's), (Start: 11 @34609 has 64 MA's), (16, 34687), (18, 34720), (20, 34729), (29, 34858), (31, 34894), (33, 34900), (34, 34912), (36, 34936), (38, 34954), (41, 35023),

Gene: StinkyVeggy\_36 Start: 34667, Stop: 35101, Start Num: 11

Candidate Starts for StinkyVeggy\_36:

(9, 34484), (Start: 10 @34562 has 1 MA's), (Start: 11 @34667 has 64 MA's), (25, 34871), (28, 34901),

Gene: Suigeneris\_34 Start: 34518, Stop: 34952, Start Num: 11

Candidate Starts for Suigeneris\_34:

(9, 34341), (Start: 10 @34413 has 1 MA's), (Start: 11 @34518 has 64 MA's), (12, 34560), (13, 34572), (15, 34599), (22, 34695), (25, 34722), (29, 34773), (30, 34782),

Gene: SynergyX\_35 Start: 33844, Stop: 34269, Start Num: 11

Candidate Starts for SynergyX\_35:

(Start: 10 @33739 has 1 MA's), (Start: 11 @33844 has 64 MA's), (16, 33922), (18, 33955), (20, 33964), (28, 34072), (29, 34093), (31, 34129), (33, 34135), (34, 34147), (36, 34171), (38, 34189), (41, 34258),

Gene: Taptic\_27 Start: 30948, Stop: 31370, Start Num: 11

Candidate Starts for Taptic\_27:

(Start: 11 @30948 has 64 MA's), (12, 30978), (17, 31038), (20, 31065), (27, 31158), (28, 31173), (29, 31194), (31, 31230), (32, 31233), (33, 31236), (35, 31260),

Gene: Tydolla\_35 Start: 34578, Stop: 35003, Start Num: 11

Candidate Starts for Tydolla\_35:

(Start: 10 @34473 has 1 MA's), (Start: 11 @34578 has 64 MA's), (16, 34656), (18, 34689), (20, 34698), (28, 34806), (29, 34827), (31, 34863), (33, 34869), (34, 34881), (36, 34905), (38, 34923), (41, 34992),

Gene: Yahalom\_35 Start: 33854, Stop: 34279, Start Num: 11

Candidate Starts for Yahalom\_35:

(7, 33512), (8, 33623), (Start: 10 @33749 has 1 MA's), (Start: 11 @33854 has 64 MA's), (18, 33965), (20, 33974), (21, 33989), (29, 34103), (30, 34112), (31, 34139), (33, 34145), (34, 34157), (36, 34181), (38, 34199), (41, 34268),

Gene: Yinz\_35 Start: 33880, Stop: 34305, Start Num: 11

Candidate Starts for Yinz\_35:

(Start: 10 @33775 has 1 MA's), (Start: 11 @33880 has 64 MA's), (16, 33958), (18, 33991), (20, 34000), (28, 34108), (29, 34129), (30, 34138), (31, 34165), (33, 34171), (34, 34183), (36, 34207), (38, 34225), (41, 34294),

