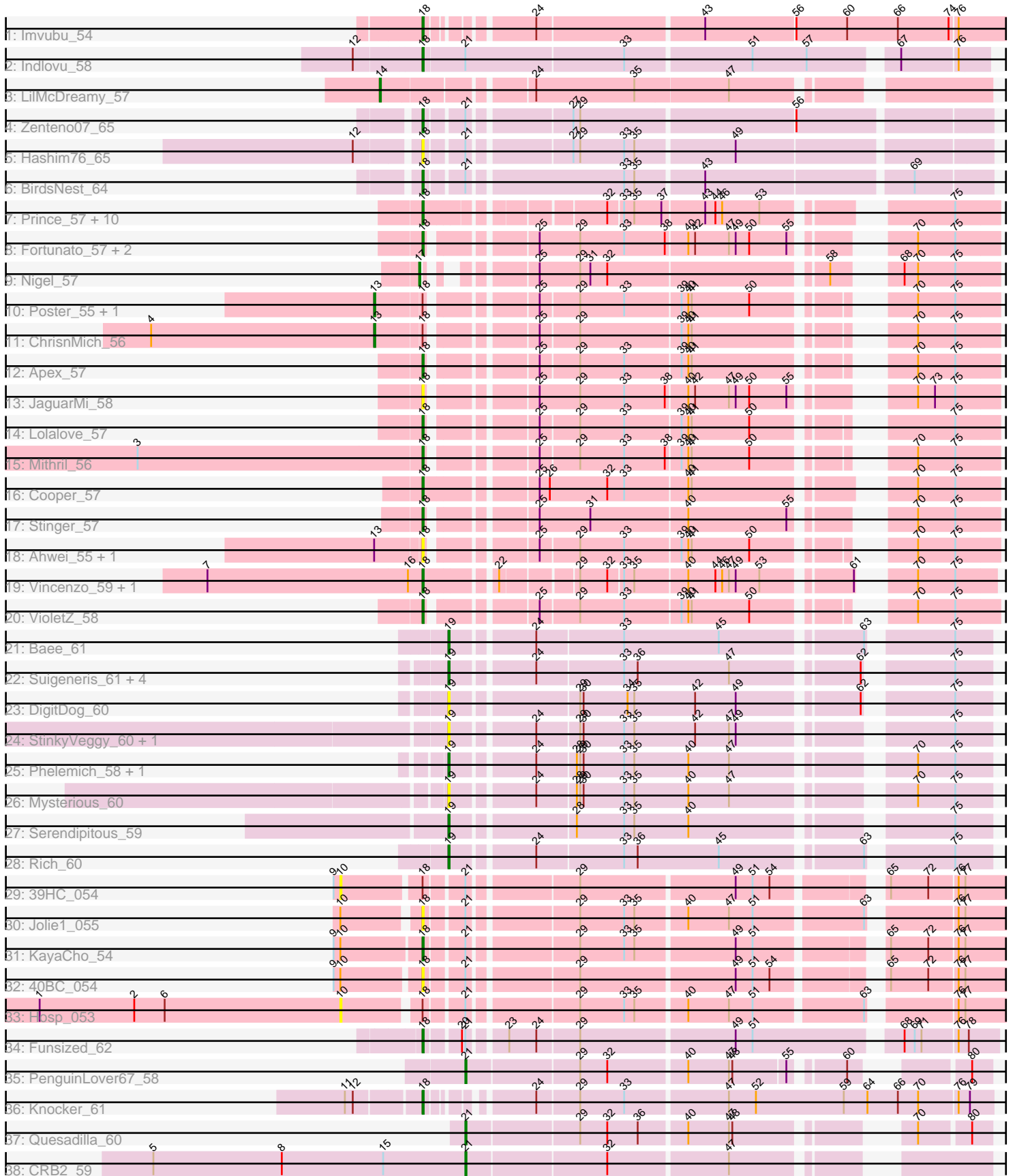


Pham 166744



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 166744 Report

This analysis was run 07/09/24 on database version 566.

Pham number 166744 has 59 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Imvubu\_54
- Track 2 : Indlovu\_58
- Track 3 : LilMcDreamy\_57
- Track 4 : Zenteno07\_65
- Track 5 : Hashim76\_65
- Track 6 : BirdsNest\_64
- Track 7 : Prince\_57, Zemanar\_57, Heath\_55, BobbyK\_57, Hangman\_56, Austelle\_57, BrownCNA\_58, Waleliano\_56, Frederick\_56, Hydro\_56, Mudslide\_56
- Track 8 : Fortunato\_57, Magpie\_55, RawrgerThat\_57
- Track 9 : Nigel\_57
- Track 10 : Poster\_55, JAMaL\_56
- Track 11 : ChrisnMich\_56
- Track 12 : Apex\_57
- Track 13 : JaguarMi\_58
- Track 14 : Lolalove\_57
- Track 15 : Mithril\_56
- Track 16 : Cooper\_57
- Track 17 : Stinger\_57
- Track 18 : Ahwei\_55, Nanao\_55
- Track 19 : Vincenzo\_59, AlanGrant\_60
- Track 20 : VioletZ\_58
- Track 21 : Bae\_61
- Track 22 : Suigeneris\_61, EastView9101\_61, Donny\_61, SirJeffery\_59, Acadian\_60
- Track 23 : DigitDog\_60
- Track 24 : StinkyVeggy\_60, Nangang\_60
- Track 25 : Phelemich\_58, Reprobate\_59
- Track 26 : Mysterious\_60
- Track 27 : Serendipitous\_59
- Track 28 : Rich\_60
- Track 29 : 39HC\_054
- Track 30 : Jolie1\_055
- Track 31 : KayaCho\_54
- Track 32 : 40BC\_054
- Track 33 : Hosp\_053
- Track 34 : Funsized\_62
- Track 35 : PenguinLover67\_58
- Track 36 : Knocker\_61

- Track 37 : Quesadilla\_60
- Track 38 : CRB2\_59

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

The start number called the most often in the published annotations is 18, it was called in 27 of the 42 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 40BC\_054, Ahwei\_55, AlanGrant\_60, Apex\_57, Austelle\_57, BirdsNest\_64, BobbyK\_57, BrownCNA\_58, Cooper\_57, Fortunato\_57, Frederick\_56, Funsized\_62, Hangman\_56, Hashim76\_65, Heath\_55, Hydro\_56, Imvubu\_54, Indlovu\_58, JaguarMi\_58, Jolie1\_055, KayaCho\_54, Knocker\_61, Lolalove\_57, Magpie\_55, Mithril\_56, Mudslide\_56, Nanao\_55, Prince\_57, RawrgerThat\_57, Stinger\_57, Vincenzo\_59, VioletZ\_58, Waleliano\_56, Zemanar\_57, Zenteno07\_65,

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

- 39HC\_054, ChrisnMich\_56, Hosp\_053, JAMaL\_56, Poster\_55,

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

- Acadian\_60, Bae\_61, CRB2\_59, DigitDog\_60, Donny\_61, EastView9101\_61, LilMcDreamy\_57, Mysterious\_60, Nangang\_60, Nigel\_57, PenguinLover67\_58, Phelemich\_58, Quesadilla\_60, Reprobate\_59, Rich\_60, Serendipitous\_59, SirJeffery\_59, StinkyVeggy\_60, Suigeneris\_61,

**Summary by start number:**

Start 10:

- Found in 5 of 59 ( 8.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 40.0% of time when present
- Phage (with cluster) where this start called: 39HC\_054 (B6), Hosp\_053 (B6),

Start 13:

- Found in 5 of 59 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 2 of 42
- Called 60.0% of time when present
- Phage (with cluster) where this start called: ChrisnMich\_56 (B4), JAMaL\_56 (B4), Poster\_55 (B4),

Start 14:

- Found in 1 of 59 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilMcDreamy\_57 (B12),

Start 17:

- Found in 1 of 59 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Nigel\_57 (B4),

Start 18:

- Found in 40 of 59 ( 67.8% ) of genes in pham
- Manual Annotations of this start: 27 of 42
- Called 87.5% of time when present
- Phage (with cluster) where this start called: 40BC\_054 (B6), Ahwei\_55 (B4), AlanGrant\_60 (B4), Apex\_57 (B4), Austelle\_57 (B4), BirdsNest\_64 (B13), BobbyK\_57 (B4), BrownCNA\_58 (B4), Cooper\_57 (B4), Fortunato\_57 (B4), Frederick\_56 (B4), Funsized\_62 (B9), Hangman\_56 (B4), Hashim76\_65 (B13), Heath\_55 (B4), Hydro\_56 (B4), Imvubu\_54 (B10), Indlovu\_58 (B11), JaguarMi\_58 (B4), Jolie1\_055 (B6), KayaCho\_54 (B6), Knocker\_61 (B9), Lolalove\_57 (B4), Magpie\_55 (B4), Mithril\_56 (B4), Mudslide\_56 (B4), Nanao\_55 (B4), Prince\_57 (B4), RawrgerThat\_57 (B4), Stinger\_57 (B4), Vincenzo\_59 (B4), VioletZ\_58 (B4), Waleliano\_56 (B4), Zemanar\_57 (B4), Zenteno07\_65 (B13),

Start 19:

- Found in 14 of 59 ( 23.7% ) of genes in pham
- Manual Annotations of this start: 8 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acadian\_60 (B5), Bae\_61 (B5), DigitDog\_60 (B5), Donny\_61 (B5), EastView9101\_61 (B5), Mysterious\_60 (B5), Nangang\_60 (B5), Phelemich\_58 (B5), Reprobate\_59 (B5), Rich\_60 (B5), Serendipitous\_59 (B5), SirJeffery\_59 (B5), StinkyVeggy\_60 (B5), Suigeneris\_61 (B5),

Start 21:

- Found in 13 of 59 ( 22.0% ) of genes in pham
- Manual Annotations of this start: 3 of 42
- Called 23.1% of time when present
- Phage (with cluster) where this start called: CRB2\_59 (B9), PenguinLover67\_58 (B9), Quesadilla\_60 (B9),

### **Summary by clusters:**

There are 8 clusters represented in this pham: B4, B5, B6, B12, B13, B10, B11, B9,

Info for manual annotations of cluster B10:

- Start number 18 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:

- Start number 18 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 14 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B13:

- Start number 18 was manually annotated 2 times for cluster B13.

Info for manual annotations of cluster B4:

- Start number 13 was manually annotated 2 times for cluster B4.
- Start number 17 was manually annotated 1 time for cluster B4.
- Start number 18 was manually annotated 20 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 19 was manually annotated 8 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 18 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B9:

- Start number 18 was manually annotated 2 times for cluster B9.
- Start number 21 was manually annotated 3 times for cluster B9.

### **Gene Information:**

Gene: 39HC\_054 Start: 53638, Stop: 53117, Start Num: 10

Candidate Starts for 39HC\_054:

(9, 53644), (10, 53638), (Start: 18 @53572 has 27 MA's), (Start: 21 @53542 has 3 MA's), (29, 53455), (49, 53323), (51, 53308), (54, 53293), (65, 53215), (72, 53182), (76, 53158), (77, 53152),

Gene: 40BC\_054 Start: 53572, Stop: 53117, Start Num: 18

Candidate Starts for 40BC\_054:

(9, 53644), (10, 53638), (Start: 18 @53572 has 27 MA's), (Start: 21 @53542 has 3 MA's), (29, 53455), (49, 53323), (51, 53308), (54, 53293), (65, 53215), (72, 53182), (76, 53158), (77, 53152),

Gene: Acadian\_60 Start: 55536, Stop: 55105, Start Num: 19

Candidate Starts for Acadian\_60:

(Start: 19 @55536 has 8 MA's), (24, 55470), (33, 55395), (36, 55383), (47, 55302), (62, 55200), (75, 55137),

Gene: Ahwei\_55 Start: 54713, Stop: 54285, Start Num: 18

Candidate Starts for Ahwei\_55:

(Start: 13 @54752 has 2 MA's), (Start: 18 @54713 has 27 MA's), (25, 54635), (29, 54602), (33, 54563), (39, 54515), (40, 54509), (41, 54506), (50, 54455), (70, 54356), (75, 54323),

Gene: AlanGrant\_60 Start: 56832, Stop: 56401, Start Num: 18

Candidate Starts for AlanGrant\_60:

(7, 57021), (16, 56844), (Start: 18 @56832 has 27 MA's), (22, 56778), (29, 56718), (32, 56694), (33, 56682), (35, 56673), (40, 56628), (44, 56604), (46, 56598), (47, 56592), (49, 56586), (53, 56565), (61, 56496), (70, 56469), (75, 56436),

Gene: Apex\_57 Start: 55933, Stop: 55505, Start Num: 18

Candidate Starts for Apex\_57:

(Start: 18 @55933 has 27 MA's), (25, 55855), (29, 55822), (33, 55783), (39, 55735), (40, 55729), (41, 55726), (70, 55576), (75, 55543),

Gene: Austelle\_57 Start: 56389, Stop: 55958, Start Num: 18

Candidate Starts for Austelle\_57:

(Start: 18 @56389 has 27 MA's), (32, 56254), (33, 56242), (35, 56233), (37, 56209), (43, 56173), (44, 56164), (46, 56158), (53, 56125), (75, 55996),

Gene: Bae\_61 Start: 56597, Stop: 56163, Start Num: 19

Candidate Starts for Bae\_61:

(Start: 19 @56597 has 8 MA's), (24, 56531), (33, 56456), (45, 56372), (63, 56258), (75, 56195),

Gene: BirdsNest\_64 Start: 55434, Stop: 54970, Start Num: 18

Candidate Starts for BirdsNest\_64:

(Start: 18 @55434 has 27 MA's), (Start: 21 @55404 has 3 MA's), (33, 55275), (35, 55266), (43, 55209), (69, 55035),

Gene: BobbyK\_57 Start: 55699, Stop: 55268, Start Num: 18

Candidate Starts for BobbyK\_57:

(Start: 18 @55699 has 27 MA's), (32, 55564), (33, 55552), (35, 55543), (37, 55519), (43, 55483), (44, 55474), (46, 55468), (53, 55435), (75, 55306),

Gene: BrownCNA\_58 Start: 56056, Stop: 55625, Start Num: 18

Candidate Starts for BrownCNA\_58:

(Start: 18 @56056 has 27 MA's), (32, 55921), (33, 55909), (35, 55900), (37, 55876), (43, 55840), (44, 55831), (46, 55825), (53, 55792), (75, 55663),

Gene: CRB2\_59 Start: 56619, Stop: 56215, Start Num: 21

Candidate Starts for CRB2\_59:

(5, 56895), (8, 56781), (15, 56691), (Start: 21 @56619 has 3 MA's), (32, 56499), (47, 56397),

Gene: ChrisnMich\_56 Start: 54764, Stop: 54297, Start Num: 13

Candidate Starts for ChrisnMich\_56:

(4, 54962), (Start: 13 @54764 has 2 MA's), (Start: 18 @54725 has 27 MA's), (25, 54647), (29, 54614), (39, 54527), (40, 54521), (41, 54518), (70, 54368), (75, 54335),

Gene: Cooper\_57 Start: 54888, Stop: 54442, Start Num: 18

Candidate Starts for Cooper\_57:

(Start: 18 @54888 has 27 MA's), (25, 54801), (26, 54792), (32, 54741), (33, 54726), (40, 54672), (41, 54669), (70, 54513), (75, 54480),

Gene: DigitDog\_60 Start: 55479, Stop: 55048, Start Num: 19

Candidate Starts for DigitDog\_60:

(Start: 19 @55479 has 8 MA's), (29, 55377), (30, 55374), (34, 55335), (35, 55329), (42, 55275), (49, 55239), (62, 55143), (75, 55080),

Gene: Donny\_61 Start: 55582, Stop: 55151, Start Num: 19

Candidate Starts for Donny\_61:

(Start: 19 @55582 has 8 MA's), (24, 55516), (33, 55441), (36, 55429), (47, 55348), (62, 55246), (75, 55183),

Gene: EastView9101\_61 Start: 55391, Stop: 54960, Start Num: 19

Candidate Starts for EastView9101\_61:

(Start: 19 @55391 has 8 MA's), (24, 55325), (33, 55250), (36, 55238), (47, 55157), (62, 55055), (75, 54992),

Gene: Fortunato\_57 Start: 55748, Stop: 55314, Start Num: 18

Candidate Starts for Fortunato\_57:

(Start: 18 @55748 has 27 MA's), (25, 55670), (29, 55634), (33, 55595), (38, 55559), (40, 55541), (42, 55535), (47, 55505), (49, 55499), (50, 55487), (55, 55454), (70, 55385), (75, 55352),

Gene: Frederick\_56 Start: 55642, Stop: 55211, Start Num: 18

Candidate Starts for Frederick\_56:

(Start: 18 @55642 has 27 MA's), (32, 55507), (33, 55495), (35, 55486), (37, 55462), (43, 55426), (44, 55417), (46, 55411), (53, 55378), (75, 55249),

Gene: Funsized\_62 Start: 57679, Stop: 57218, Start Num: 18

Candidate Starts for Funsized\_62:

(Start: 18 @57679 has 27 MA's), (20, 57652), (Start: 21 @57649 has 3 MA's), (23, 57622), (24, 57598), (29, 57562), (49, 57430), (51, 57415), (68, 57298), (69, 57289), (71, 57283), (76, 57253), (78, 57244),

Gene: Hangman\_56 Start: 55799, Stop: 55368, Start Num: 18

Candidate Starts for Hangman\_56:

(Start: 18 @55799 has 27 MA's), (32, 55664), (33, 55652), (35, 55643), (37, 55619), (43, 55583), (44, 55574), (46, 55568), (53, 55535), (75, 55406),

Gene: Hashim76\_65 Start: 55719, Stop: 55258, Start Num: 18

Candidate Starts for Hashim76\_65:

(12, 55770), (Start: 18 @55719 has 27 MA's), (Start: 21 @55689 has 3 MA's), (27, 55608), (29, 55602), (33, 55563), (35, 55554), (49, 55470),

Gene: Heath\_55 Start: 55425, Stop: 54994, Start Num: 18

Candidate Starts for Heath\_55:

(Start: 18 @55425 has 27 MA's), (32, 55290), (33, 55278), (35, 55269), (37, 55245), (43, 55209), (44, 55200), (46, 55194), (53, 55161), (75, 55032),

Gene: Hosp\_053 Start: 52031, Stop: 51510, Start Num: 10

Candidate Starts for Hosp\_053:

(1, 52298), (2, 52214), (6, 52187), (10, 52031), (Start: 18 @51968 has 27 MA's), (Start: 21 @51938 has 3 MA's), (29, 51851), (33, 51812), (35, 51803), (40, 51761), (47, 51725), (51, 51704), (63, 51614), (76, 51551), (77, 51545),

Gene: Hydro\_56 Start: 55776, Stop: 55345, Start Num: 18

Candidate Starts for Hydro\_56:

(Start: 18 @55776 has 27 MA's), (32, 55641), (33, 55629), (35, 55620), (37, 55596), (43, 55560), (44, 55551), (46, 55545), (53, 55512), (75, 55383),

Gene: Imvubu\_54 Start: 53064, Stop: 52585, Start Num: 18

Candidate Starts for Imvubu\_54:

(Start: 18 @53064 has 27 MA's), (24, 52989), (43, 52848), (56, 52770), (60, 52725), (66, 52680), (74, 52635), (76, 52629),

Gene: Indlovu\_58 Start: 55544, Stop: 55074, Start Num: 18

Candidate Starts for Indlovu\_58:

(12, 55601), (Start: 18 @55544 has 27 MA's), (Start: 21 @55508 has 3 MA's), (33, 55370), (51, 55262), (57, 55214), (67, 55148), (76, 55100),

Gene: JAMaL\_56 Start: 55857, Stop: 55390, Start Num: 13

Candidate Starts for JAMaL\_56:

(Start: 13 @55857 has 2 MA's), (Start: 18 @55818 has 27 MA's), (25, 55740), (29, 55707), (33, 55668), (39, 55620), (40, 55614), (41, 55611), (50, 55560), (70, 55461), (75, 55428),

Gene: JaguarMi\_58 Start: 56843, Stop: 56409, Start Num: 18

Candidate Starts for JaguarMi\_58:

(Start: 18 @56843 has 27 MA's), (25, 56765), (29, 56729), (33, 56690), (38, 56654), (40, 56636), (42, 56630), (47, 56600), (49, 56594), (50, 56582), (55, 56549), (70, 56480), (73, 56465), (75, 56447),

Gene: Jolie1\_055 Start: 53868, Stop: 53410, Start Num: 18

Candidate Starts for Jolie1\_055:

(10, 53931), (Start: 18 @53868 has 27 MA's), (Start: 21 @53838 has 3 MA's), (29, 53751), (33, 53712), (35, 53703), (40, 53661), (47, 53625), (51, 53604), (63, 53514), (76, 53451), (77, 53445),

Gene: KayaCho\_54 Start: 53811, Stop: 53356, Start Num: 18

Candidate Starts for KayaCho\_54:

(9, 53886), (10, 53880), (Start: 18 @53811 has 27 MA's), (Start: 21 @53781 has 3 MA's), (29, 53694), (33, 53655), (35, 53646), (49, 53562), (51, 53547), (65, 53454), (72, 53421), (76, 53397), (77, 53391),

Gene: Kocker\_61 Start: 57083, Stop: 56619, Start Num: 18

Candidate Starts for Kocker\_61:

(11, 57143), (12, 57137), (Start: 18 @57083 has 27 MA's), (24, 57011), (29, 56975), (33, 56936), (47, 56849), (52, 56825), (59, 56747), (64, 56726), (66, 56699), (70, 56681), (76, 56648), (79, 56639),

Gene: LilMcDreamy\_57 Start: 54942, Stop: 54460, Start Num: 14

Candidate Starts for LilMcDreamy\_57:

(Start: 14 @54942 has 1 MA's), (24, 54825), (35, 54738), (47, 54657),

Gene: Lolalove\_57 Start: 55756, Stop: 55328, Start Num: 18

Candidate Starts for Lolalove\_57:

(Start: 18 @55756 has 27 MA's), (25, 55678), (29, 55645), (33, 55606), (39, 55558), (40, 55552), (41, 55549), (50, 55498), (75, 55366),

Gene: Magpie\_55 Start: 55681, Stop: 55247, Start Num: 18

Candidate Starts for Magpie\_55:

(Start: 18 @55681 has 27 MA's), (25, 55603), (29, 55567), (33, 55528), (38, 55492), (40, 55474), (42, 55468), (47, 55438), (49, 55432), (50, 55420), (55, 55387), (70, 55318), (75, 55285),

Gene: Mithril\_56 Start: 55751, Stop: 55323, Start Num: 18

Candidate Starts for Mithril\_56:

(3, 56000), (Start: 18 @55751 has 27 MA's), (25, 55673), (29, 55640), (33, 55601), (38, 55565), (39, 55553), (40, 55547), (41, 55544), (50, 55493), (70, 55394), (75, 55361),

Gene: Mudslide\_56 Start: 56021, Stop: 55590, Start Num: 18

Candidate Starts for Mudslide\_56:

(Start: 18 @56021 has 27 MA's), (32, 55886), (33, 55874), (35, 55865), (37, 55841), (43, 55805), (44, 55796), (46, 55790), (53, 55757), (75, 55628),

Gene: Mysterious\_60 Start: 55658, Stop: 55227, Start Num: 19

Candidate Starts for Mysterious\_60:

(Start: 19 @55658 has 8 MA's), (24, 55592), (28, 55559), (29, 55556), (30, 55553), (33, 55517), (35, 55508), (40, 55460), (47, 55424), (70, 55292), (75, 55259),

Gene: Nanao\_55 Start: 54716, Stop: 54288, Start Num: 18

Candidate Starts for Nanao\_55:

(Start: 13 @54755 has 2 MA's), (Start: 18 @54716 has 27 MA's), (25, 54638), (29, 54605), (33, 54566), (39, 54518), (40, 54512), (41, 54509), (50, 54458), (70, 54359), (75, 54326),

Gene: Nangang\_60 Start: 55837, Stop: 55406, Start Num: 19



Candidate Starts for Nangang\_60:

(Start: 19 @55837 has 8 MA's), (24, 55771), (29, 55735), (30, 55732), (33, 55696), (35, 55687), (42, 55633), (47, 55603), (49, 55597), (75, 55438),

Gene: Nigel\_57 Start: 55086, Stop: 54667, Start Num: 17

Candidate Starts for Nigel\_57:

(Start: 17 @55086 has 1 MA's), (25, 55023), (29, 54987), (31, 54978), (32, 54963), (58, 54783), (68, 54750), (70, 54738), (75, 54705),

Gene: PenguinLover67\_58 Start: 55676, Stop: 55281, Start Num: 21

Candidate Starts for PenguinLover67\_58:

(Start: 21 @55676 has 3 MA's), (29, 55580), (32, 55556), (40, 55490), (47, 55454), (48, 55451), (55, 55406), (60, 55367), (80, 55298),

Gene: Phelemich\_58 Start: 55654, Stop: 55223, Start Num: 19

Candidate Starts for Phelemich\_58:

(Start: 19 @55654 has 8 MA's), (24, 55588), (28, 55555), (29, 55552), (30, 55549), (33, 55513), (35, 55504), (40, 55456), (47, 55420), (70, 55288), (75, 55255),

Gene: Poster\_55 Start: 54756, Stop: 54289, Start Num: 13

Candidate Starts for Poster\_55:

(Start: 13 @54756 has 2 MA's), (Start: 18 @54717 has 27 MA's), (25, 54639), (29, 54606), (33, 54567), (39, 54519), (40, 54513), (41, 54510), (50, 54459), (70, 54360), (75, 54327),

Gene: Prince\_57 Start: 55934, Stop: 55503, Start Num: 18

Candidate Starts for Prince\_57:

(Start: 18 @55934 has 27 MA's), (32, 55799), (33, 55787), (35, 55778), (37, 55754), (43, 55718), (44, 55709), (46, 55703), (53, 55670), (75, 55541),

Gene: Quesadilla\_60 Start: 55946, Stop: 55548, Start Num: 21

Candidate Starts for Quesadilla\_60:

(Start: 21 @55946 has 3 MA's), (29, 55850), (32, 55826), (36, 55799), (40, 55760), (47, 55724), (48, 55721), (70, 55607), (80, 55565),

Gene: RawrgerThat\_57 Start: 55774, Stop: 55343, Start Num: 18

Candidate Starts for RawrgerThat\_57:

(Start: 18 @55774 has 27 MA's), (25, 55696), (29, 55660), (33, 55621), (38, 55588), (40, 55570), (42, 55564), (47, 55534), (49, 55528), (50, 55516), (55, 55483), (70, 55414), (75, 55381),

Gene: Reprobate\_59 Start: 55659, Stop: 55228, Start Num: 19

Candidate Starts for Reprobate\_59:

(Start: 19 @55659 has 8 MA's), (24, 55593), (28, 55560), (29, 55557), (30, 55554), (33, 55518), (35, 55509), (40, 55461), (47, 55425), (70, 55293), (75, 55260),

Gene: Rich\_60 Start: 56869, Stop: 56435, Start Num: 19

Candidate Starts for Rich\_60:

(Start: 19 @56869 has 8 MA's), (24, 56803), (33, 56728), (36, 56716), (45, 56644), (63, 56530), (75, 56467),

Gene: Serendipitous\_59 Start: 55249, Stop: 54818, Start Num: 19

Candidate Starts for Serendipitous\_59:

(Start: 19 @55249 has 8 MA's), (28, 55150), (33, 55108), (35, 55099), (40, 55051), (75, 54850),

Gene: SirJeffery\_59 Start: 55613, Stop: 55182, Start Num: 19

Candidate Starts for SirJeffery\_59:

(Start: 19 @55613 has 8 MA's), (24, 55547), (33, 55472), (36, 55460), (47, 55379), (62, 55277), (75, 55214),

Gene: Stinger\_57 Start: 54647, Stop: 54213, Start Num: 18

Candidate Starts for Stinger\_57:

(Start: 18 @54647 has 27 MA's), (25, 54569), (31, 54524), (40, 54440), (55, 54353), (70, 54284), (75, 54251),

Gene: StinkyVeggy\_60 Start: 55658, Stop: 55227, Start Num: 19

Candidate Starts for StinkyVeggy\_60:

(Start: 19 @55658 has 8 MA's), (24, 55592), (29, 55556), (30, 55553), (33, 55517), (35, 55508), (42, 55454), (47, 55424), (49, 55418), (75, 55259),

Gene: Suigeneris\_61 Start: 55734, Stop: 55303, Start Num: 19

Candidate Starts for Suigeneris\_61:

(Start: 19 @55734 has 8 MA's), (24, 55668), (33, 55593), (36, 55581), (47, 55500), (62, 55398), (75, 55335),

Gene: Vincenzo\_59 Start: 56862, Stop: 56431, Start Num: 18

Candidate Starts for Vincenzo\_59:

(7, 57051), (16, 56874), (Start: 18 @56862 has 27 MA's), (22, 56808), (29, 56748), (32, 56724), (33, 56712), (35, 56703), (40, 56658), (44, 56634), (46, 56628), (47, 56622), (49, 56616), (53, 56595), (61, 56526), (70, 56499), (75, 56466),

Gene: VioletZ\_58 Start: 55847, Stop: 55419, Start Num: 18

Candidate Starts for VioletZ\_58:

(Start: 18 @55847 has 27 MA's), (25, 55769), (29, 55736), (33, 55697), (39, 55649), (40, 55643), (41, 55640), (50, 55589), (70, 55490), (75, 55457),

Gene: Waleliano\_56 Start: 55788, Stop: 55357, Start Num: 18

Candidate Starts for Waleliano\_56:

(Start: 18 @55788 has 27 MA's), (32, 55653), (33, 55641), (35, 55632), (37, 55608), (43, 55572), (44, 55563), (46, 55557), (53, 55524), (75, 55395),

Gene: Zemanar\_57 Start: 55620, Stop: 55189, Start Num: 18

Candidate Starts for Zemanar\_57:

(Start: 18 @55620 has 27 MA's), (32, 55485), (33, 55473), (35, 55464), (37, 55440), (43, 55404), (44, 55395), (46, 55389), (53, 55356), (75, 55227),

Gene: Zenteno07\_65 Start: 55334, Stop: 54873, Start Num: 18

Candidate Starts for Zenteno07\_65:

(Start: 18 @55334 has 27 MA's), (Start: 21 @55304 has 3 MA's), (27, 55223), (29, 55217), (56, 55034),