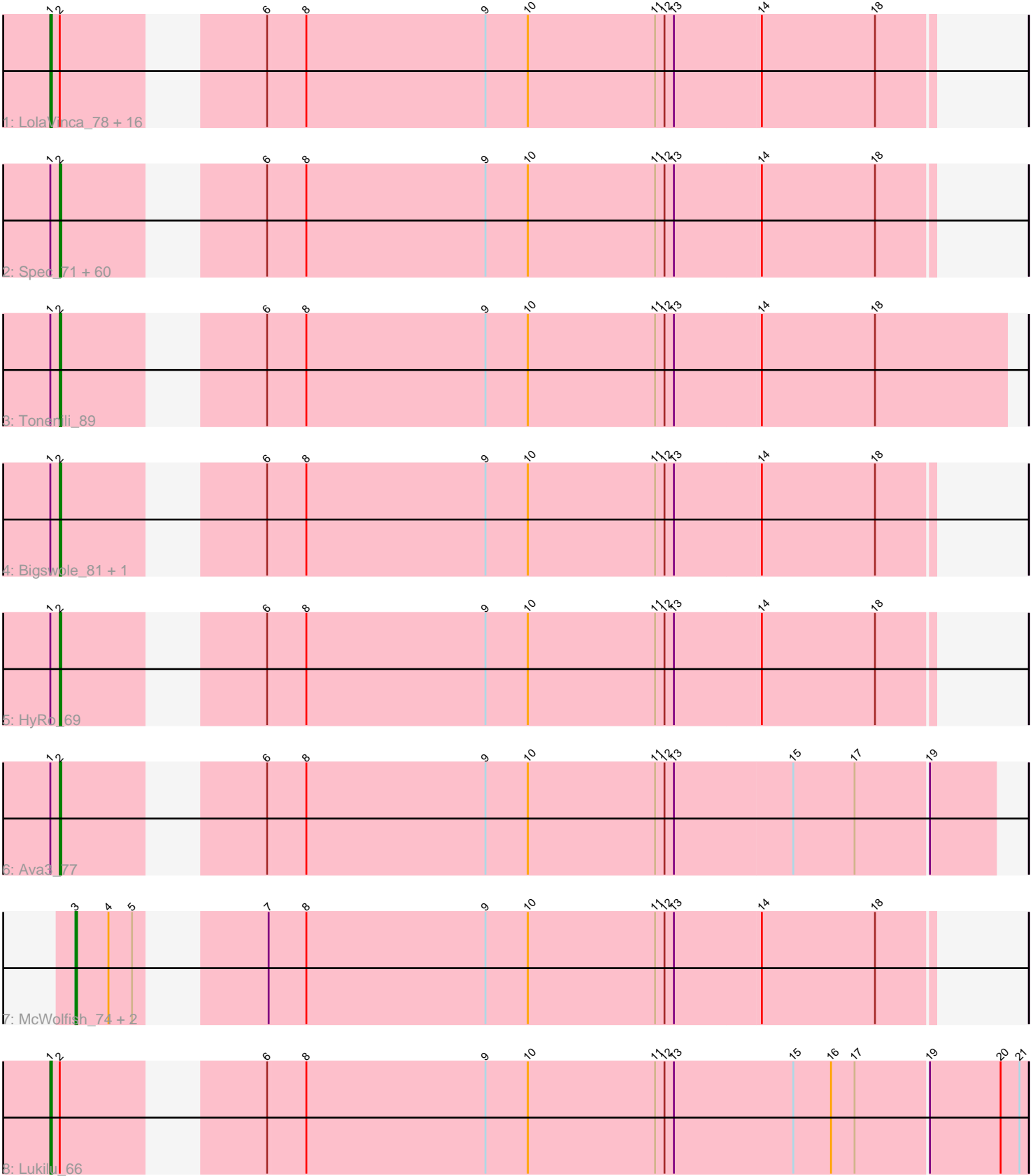


Pham 85352



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 85352 Report

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

Pham number 85352 has 87 members, 10 are drafts.

Phages represented in each track:

- Track 1 : LolaVinca\_78, ParkTD\_77, Erdmann\_76, StephanieG\_76, Wally\_74, Gizmo\_80, BananaFence\_75, IkeLoa\_70, Yucca\_75, Zeenon\_77, MikeLiesIn\_76, Shrimp\_76, Pier\_80, NedWong\_77, Zalkecks\_77, Spud\_75, Daffodil\_80
- Track 2 : Spec\_71, Ronan\_69, Shaqnato\_68, LinStu\_75, BigCity\_83, Concombre\_83, NuevoMundo\_82, NoodleTree\_79, Bipolarisk\_75, Kamryn\_76, Colt\_66, FrayBell\_82, Nidhogg\_76, Breeniome\_76, BadAgartude\_73, DrPhinkDaddy\_75, Sebata\_76, Willis\_77, RoMag\_71, Shelob\_78, Nappy\_77, ZygoTaiga\_75, JayJay\_78, Megamind\_75, Teardrop\_76, LRRHood\_70, Delylah\_79, Issimir\_74, MoMoMixon\_76, Maby2021\_76, Caravan\_72, Napoleon13\_72, Ewok\_77, Mikro\_74, YemiJoy2021\_77, Lee7\_74, Naval22\_81, Tortoise16\_74, Pleione\_78, InterFolia\_85, Specks\_82, Bonray\_76, EmToTheThree\_79, Loanshark\_76, Jessibeth14\_75, Izajani\_76, Dandelion\_82, LordLeafolot\_80, Rizal\_73, Dietrick\_69, Tyke\_78, Phox\_72, EggyFarm\_83, SrishMeg2525\_75, Grasshills\_83, FoxtrotP1\_76, TinyTim\_76, I3\_80, Delilah\_76, StubbySaigey\_77, Norm\_77
- Track 3 : Tonenili\_89
- Track 4 : Bigswole\_81, Mangeria\_76
- Track 5 : HyRo\_69
- Track 6 : Ava3\_77
- Track 7 : McWolfish\_74, PurduePete\_76, Khaleesi\_75
- Track 8 : Lukilu\_66

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

The start number called the most often in the published annotations is 2, it was called in 56 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ava3\_77, BadAgartude\_73, BigCity\_83, Bigswole\_81, Bipolarisk\_75, Bonray\_76, Breeniome\_76, Caravan\_72, Colt\_66, Concombre\_83, Dandelion\_82, Delilah\_76, Delylah\_79, Dietrick\_69, DrPhinkDaddy\_75, EggyFarm\_83, EmToTheThree\_79, Ewok\_77, FoxtrotP1\_76, FrayBell\_82, Grasshills\_83, HyRo\_69, I3\_80, InterFolia\_85, Issimir\_74, Izajani\_76, JayJay\_78, Jessibeth14\_75, Kamryn\_76, LRRHood\_70, Lee7\_74, LinStu\_75, Loanshark\_76, LordLeafolot\_80, Maby2021\_76, Mangeria\_76, Megamind\_75, Mikro\_74, MoMoMixon\_76, Napoleon13\_72, Nappy\_77, Naval22\_81,

Nidhogg\_76, NoodleTree\_79, Norm\_77, NuevoMundo\_82, Phox\_72, Pleione\_78, Rizal\_73, RoMag\_71, Ronan\_69, Sebata\_76, Shaqnato\_68, Shelob\_78, Spec\_71, Specks\_82, SrishMeg2525\_75, StubbySaigey\_77, Teardrop\_76, TinyTim\_76, Tonenili\_89, Tortoise16\_74, Tyke\_78, Willis\_77, YemiJoy2021\_77, ZygoTaiga\_75,

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

- BananaFence\_75, Daffodil\_80, Erdmann\_76, Gizmo\_80, IkeLoa\_70, LolaVinca\_78, Lukilu\_66, MikeLiesIn\_76, NedWong\_77, ParkTD\_77, Pier\_80, Shrimp\_76, Spud\_75, StephanieG\_76, Wally\_74, Yucca\_75, Zalkecks\_77, Zeenon\_77,

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

- Khaleesi\_75, McWolfish\_74, PurduePete\_76,

### Summary by start number:

Start 1:

- Found in 84 of 87 ( 96.6% ) of genes in pham
- Manual Annotations of this start: 18 of 77
- Called 21.4% of time when present
- Phage (with cluster) where this start called: BananaFence\_75 (C1), Daffodil\_80 (C1), Erdmann\_76 (C1), Gizmo\_80 (C1), IkeLoa\_70 (C1), LolaVinca\_78 (C1), Lukilu\_66 (C1), MikeLiesIn\_76 (C1), NedWong\_77 (C1), ParkTD\_77 (C1), Pier\_80 (C1), Shrimp\_76 (C1), Spud\_75 (C1), StephanieG\_76 (C1), Wally\_74 (C1), Yucca\_75 (C1), Zalkecks\_77 (C1), Zeenon\_77 (C1),

Start 2:

- Found in 84 of 87 ( 96.6% ) of genes in pham
- Manual Annotations of this start: 56 of 77
- Called 78.6% of time when present
- Phage (with cluster) where this start called: Ava3\_77 (C1), BadAgartude\_73 (C1), BigCity\_83 (C1), Bigswole\_81 (C1), Bipolarisk\_75 (C1), Bonray\_76 (C1), Breeniome\_76 (C1), Caravan\_72 (C1), Colt\_66 (C1), Concombre\_83 (C1), Dandelion\_82 (C1), Delilah\_76 (C1), Delylah\_79 (C1), Dietrick\_69 (C1), DrPhinkDaddy\_75 (C1), EggyFarm\_83 (C1), EmToTheThree\_79 (C1), Ewok\_77 (C1), FoxtrotP1\_76 (C1), FrayBell\_82 (C1), Grasshills\_83 (C1), HyRo\_69 (C1), I3\_80 (C1), InterFolia\_85 (C1), Issimir\_74 (C1), Izajani\_76 (C1), JayJay\_78 (C1), Jessibeth14\_75 (C1), Kamryn\_76 (C1), LRRHood\_70 (C1), Lee7\_74 (C1), LinStu\_75 (C1), Loanshark\_76 (C1), LordLeafolot\_80 (C1), Maby2021\_76 (C1), Mangeria\_76 (C1), Megamind\_75 (C1), Mikro\_74 (C1), MoMoMixon\_76 (C1), Napoleon13\_72 (C1), Nappy\_77 (C1), Naval22\_81 (C1), Nidhogg\_76 (C1), NoodleTree\_79 (C1), Norm\_77 (C1), NuevoMundo\_82 (C1), Phox\_72 (C1), Pleione\_78 (C1), Rizal\_73 (C1), RoMag\_71 (C1), Ronan\_69 (C1), Sebata\_76 (C1), Shaqnato\_68 (C1), Shelob\_78 (C1), Spec\_71 (C1), Specks\_82 (C1), SrishMeg2525\_75 (C1), StubbySaigey\_77 (C1), Teardrop\_76 (C1), TinyTim\_76 (C1), Tonenili\_89 (C1), Tortoise16\_74 (C1), Tyke\_78 (C1), Willis\_77 (C1), YemiJoy2021\_77 (C1), ZygoTaiga\_75 (C1),

Start 3:

- Found in 3 of 87 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 3 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Khaleesi\_75 (C1), McWolfish\_74 (C1), PurduePete\_76 (C1),

## Summary by clusters:

There is one cluster represented in this pham: C1

Info for manual annotations of cluster C1:

- Start number 1 was manually annotated 18 times for cluster C1.
- Start number 2 was manually annotated 56 times for cluster C1.
- Start number 3 was manually annotated 3 times for cluster C1.

### **Gene Information:**

Gene: Ava3\_77 Start: 26955, Stop: 27509, Start Num: 2

Candidate Starts for Ava3\_77:

(Start: 1 @26949 has 18 MA's), (Start: 2 @26955 has 56 MA's), (6, 27051), (8, 27075), (9, 27189), (10, 27216), (11, 27297), (12, 27303), (13, 27309), (15, 27384), (17, 27423), (19, 27468),

Gene: BadAgartude\_73 Start: 26845, Stop: 27360, Start Num: 2

Candidate Starts for BadAgartude\_73:

(Start: 1 @26839 has 18 MA's), (Start: 2 @26845 has 56 MA's), (6, 26941), (8, 26965), (9, 27079), (10, 27106), (11, 27187), (12, 27193), (13, 27199), (14, 27253), (18, 27325),

Gene: BananaFence\_75 Start: 26320, Stop: 26841, Start Num: 1

Candidate Starts for BananaFence\_75:

(Start: 1 @26320 has 18 MA's), (Start: 2 @26326 has 56 MA's), (6, 26422), (8, 26446), (9, 26560), (10, 26587), (11, 26668), (12, 26674), (13, 26680), (14, 26734), (18, 26806),

Gene: BigCity\_83 Start: 28983, Stop: 29498, Start Num: 2

Candidate Starts for BigCity\_83:

(Start: 1 @28977 has 18 MA's), (Start: 2 @28983 has 56 MA's), (6, 29079), (8, 29103), (9, 29217), (10, 29244), (11, 29325), (12, 29331), (13, 29337), (14, 29391), (18, 29463),

Gene: Bigswole\_81 Start: 28572, Stop: 29087, Start Num: 2

Candidate Starts for Bigswole\_81:

(Start: 1 @28566 has 18 MA's), (Start: 2 @28572 has 56 MA's), (6, 28668), (8, 28692), (9, 28806), (10, 28833), (11, 28914), (12, 28920), (13, 28926), (14, 28980), (18, 29052),

Gene: Bipolarisk\_75 Start: 26608, Stop: 27123, Start Num: 2

Candidate Starts for Bipolarisk\_75:

(Start: 1 @26602 has 18 MA's), (Start: 2 @26608 has 56 MA's), (6, 26704), (8, 26728), (9, 26842), (10, 26869), (11, 26950), (12, 26956), (13, 26962), (14, 27016), (18, 27088),

Gene: Bonray\_76 Start: 26888, Stop: 27403, Start Num: 2

Candidate Starts for Bonray\_76:

(Start: 1 @26882 has 18 MA's), (Start: 2 @26888 has 56 MA's), (6, 26984), (8, 27008), (9, 27122), (10, 27149), (11, 27230), (12, 27236), (13, 27242), (14, 27296), (18, 27368),

Gene: Breeniome\_76 Start: 25631, Stop: 26146, Start Num: 2

Candidate Starts for Breeniome\_76:

(Start: 1 @25625 has 18 MA's), (Start: 2 @25631 has 56 MA's), (6, 25727), (8, 25751), (9, 25865), (10, 25892), (11, 25973), (12, 25979), (13, 25985), (14, 26039), (18, 26111),

Gene: Caravan\_72 Start: 25956, Stop: 26486, Start Num: 2

Candidate Starts for Caravan\_72:

(Start: 1 @25950 has 18 MA's), (Start: 2 @25956 has 56 MA's), (6, 26067), (8, 26091), (9, 26205), (10, 26232), (11, 26313), (12, 26319), (13, 26325), (14, 26379), (18, 26451),

Gene: Colt\_66 Start: 24153, Stop: 24668, Start Num: 2

Candidate Starts for Colt\_66:

(Start: 1 @24147 has 18 MA's), (Start: 2 @24153 has 56 MA's), (6, 24249), (8, 24273), (9, 24387), (10, 24414), (11, 24495), (12, 24501), (13, 24507), (14, 24561), (18, 24633),

Gene: Concombre\_83 Start: 29225, Stop: 29776, Start Num: 2

Candidate Starts for Concombre\_83:

(Start: 1 @29219 has 18 MA's), (Start: 2 @29225 has 56 MA's), (6, 29357), (8, 29381), (9, 29495), (10, 29522), (11, 29603), (12, 29609), (13, 29615), (14, 29669), (18, 29741),

Gene: Daffodil\_80 Start: 26890, Stop: 27411, Start Num: 1

Candidate Starts for Daffodil\_80:

(Start: 1 @26890 has 18 MA's), (Start: 2 @26896 has 56 MA's), (6, 26992), (8, 27016), (9, 27130), (10, 27157), (11, 27238), (12, 27244), (13, 27250), (14, 27304), (18, 27376),

Gene: Dandelion\_82 Start: 28977, Stop: 29492, Start Num: 2

Candidate Starts for Dandelion\_82:

(Start: 1 @28971 has 18 MA's), (Start: 2 @28977 has 56 MA's), (6, 29073), (8, 29097), (9, 29211), (10, 29238), (11, 29319), (12, 29325), (13, 29331), (14, 29385), (18, 29457),

Gene: Delilah\_76 Start: 26897, Stop: 27412, Start Num: 2

Candidate Starts for Delilah\_76:

(Start: 1 @26891 has 18 MA's), (Start: 2 @26897 has 56 MA's), (6, 26993), (8, 27017), (9, 27131), (10, 27158), (11, 27239), (12, 27245), (13, 27251), (14, 27305), (18, 27377),

Gene: Delylah\_79 Start: 26675, Stop: 27205, Start Num: 2

Candidate Starts for Delylah\_79:

(Start: 1 @26669 has 18 MA's), (Start: 2 @26675 has 56 MA's), (6, 26786), (8, 26810), (9, 26924), (10, 26951), (11, 27032), (12, 27038), (13, 27044), (14, 27098), (18, 27170),

Gene: Dietrick\_69 Start: 25015, Stop: 25530, Start Num: 2

Candidate Starts for Dietrick\_69:

(Start: 1 @25009 has 18 MA's), (Start: 2 @25015 has 56 MA's), (6, 25111), (8, 25135), (9, 25249), (10, 25276), (11, 25357), (12, 25363), (13, 25369), (14, 25423), (18, 25495),

Gene: DrPhinkDaddy\_75 Start: 26952, Stop: 27467, Start Num: 2

Candidate Starts for DrPhinkDaddy\_75:

(Start: 1 @26946 has 18 MA's), (Start: 2 @26952 has 56 MA's), (6, 27048), (8, 27072), (9, 27186), (10, 27213), (11, 27294), (12, 27300), (13, 27306), (14, 27360), (18, 27432),

Gene: EggyFarm\_83 Start: 28983, Stop: 29498, Start Num: 2

Candidate Starts for EggyFarm\_83:

(Start: 1 @28977 has 18 MA's), (Start: 2 @28983 has 56 MA's), (6, 29079), (8, 29103), (9, 29217), (10, 29244), (11, 29325), (12, 29331), (13, 29337), (14, 29391), (18, 29463),

Gene: EmToTheThree\_79 Start: 28369, Stop: 28884, Start Num: 2

Candidate Starts for EmToTheThree\_79:

(Start: 1 @28363 has 18 MA's), (Start: 2 @28369 has 56 MA's), (6, 28465), (8, 28489), (9, 28603), (10, 28630), (11, 28711), (12, 28717), (13, 28723), (14, 28777), (18, 28849),

Gene: Erdmann\_76 Start: 26891, Stop: 27412, Start Num: 1

Candidate Starts for Erdmann\_76:

(Start: 1 @26891 has 18 MA's), (Start: 2 @26897 has 56 MA's), (6, 26993), (8, 27017), (9, 27131), (10, 27158), (11, 27239), (12, 27245), (13, 27251), (14, 27305), (18, 27377),

Gene: Ewok\_77 Start: 26899, Stop: 27414, Start Num: 2

Candidate Starts for Ewok\_77:

(Start: 1 @26893 has 18 MA's), (Start: 2 @26899 has 56 MA's), (6, 26995), (8, 27019), (9, 27133), (10, 27160), (11, 27241), (12, 27247), (13, 27253), (14, 27307), (18, 27379),

Gene: FoxtrotP1\_76 Start: 27284, Stop: 27814, Start Num: 2

Candidate Starts for FoxtrotP1\_76:

(Start: 1 @27278 has 18 MA's), (Start: 2 @27284 has 56 MA's), (6, 27395), (8, 27419), (9, 27533), (10, 27560), (11, 27641), (12, 27647), (13, 27653), (14, 27707), (18, 27779),

Gene: FrayBell\_82 Start: 28229, Stop: 28744, Start Num: 2

Candidate Starts for FrayBell\_82:

(Start: 1 @28223 has 18 MA's), (Start: 2 @28229 has 56 MA's), (6, 28325), (8, 28349), (9, 28463), (10, 28490), (11, 28571), (12, 28577), (13, 28583), (14, 28637), (18, 28709),

Gene: Gizmo\_80 Start: 26574, Stop: 27095, Start Num: 1

Candidate Starts for Gizmo\_80:

(Start: 1 @26574 has 18 MA's), (Start: 2 @26580 has 56 MA's), (6, 26676), (8, 26700), (9, 26814), (10, 26841), (11, 26922), (12, 26928), (13, 26934), (14, 26988), (18, 27060),

Gene: Grasshills\_83 Start: 28983, Stop: 29498, Start Num: 2

Candidate Starts for Grasshills\_83:

(Start: 1 @28977 has 18 MA's), (Start: 2 @28983 has 56 MA's), (6, 29079), (8, 29103), (9, 29217), (10, 29244), (11, 29325), (12, 29331), (13, 29337), (14, 29391), (18, 29463),

Gene: HyRo\_69 Start: 25508, Stop: 26023, Start Num: 2

Candidate Starts for HyRo\_69:

(Start: 1 @25502 has 18 MA's), (Start: 2 @25508 has 56 MA's), (6, 25604), (8, 25628), (9, 25742), (10, 25769), (11, 25850), (12, 25856), (13, 25862), (14, 25916), (18, 25988),

Gene: I3\_80 Start: 27179, Stop: 27694, Start Num: 2

Candidate Starts for I3\_80:

(Start: 1 @27173 has 18 MA's), (Start: 2 @27179 has 56 MA's), (6, 27275), (8, 27299), (9, 27413), (10, 27440), (11, 27521), (12, 27527), (13, 27533), (14, 27587), (18, 27659),

Gene: IkeLoa\_70 Start: 25125, Stop: 25661, Start Num: 1

Candidate Starts for IkeLoa\_70:

(Start: 1 @25125 has 18 MA's), (Start: 2 @25131 has 56 MA's), (6, 25242), (8, 25266), (9, 25380), (10, 25407), (11, 25488), (12, 25494), (13, 25500), (14, 25554), (18, 25626),

Gene: InterFolia\_85 Start: 29349, Stop: 29864, Start Num: 2

Candidate Starts for InterFolia\_85:

(Start: 1 @29343 has 18 MA's), (Start: 2 @29349 has 56 MA's), (6, 29445), (8, 29469), (9, 29583), (10, 29610), (11, 29691), (12, 29697), (13, 29703), (14, 29757), (18, 29829),

Gene: Issimir\_74 Start: 26840, Stop: 27355, Start Num: 2

Candidate Starts for Issimir\_74:

(Start: 1 @26834 has 18 MA's), (Start: 2 @26840 has 56 MA's), (6, 26936), (8, 26960), (9, 27074), (10, 27101), (11, 27182), (12, 27188), (13, 27194), (14, 27248), (18, 27320),

Gene: Izajani\_76 Start: 26913, Stop: 27428, Start Num: 2

Candidate Starts for Izajani\_76:

(Start: 1 @26907 has 18 MA's), (Start: 2 @26913 has 56 MA's), (6, 27009), (8, 27033), (9, 27147), (10, 27174), (11, 27255), (12, 27261), (13, 27267), (14, 27321), (18, 27393),

Gene: JayJay\_78 Start: 27394, Stop: 27909, Start Num: 2

Candidate Starts for JayJay\_78:

(Start: 1 @27388 has 18 MA's), (Start: 2 @27394 has 56 MA's), (6, 27490), (8, 27514), (9, 27628), (10, 27655), (11, 27736), (12, 27742), (13, 27748), (14, 27802), (18, 27874),

Gene: Jessibeth14\_75 Start: 26682, Stop: 27197, Start Num: 2

Candidate Starts for Jessibeth14\_75:

(Start: 1 @26676 has 18 MA's), (Start: 2 @26682 has 56 MA's), (6, 26778), (8, 26802), (9, 26916), (10, 26943), (11, 27024), (12, 27030), (13, 27036), (14, 27090), (18, 27162),

Gene: Kamryn\_76 Start: 26839, Stop: 27354, Start Num: 2

Candidate Starts for Kamryn\_76:

(Start: 1 @26833 has 18 MA's), (Start: 2 @26839 has 56 MA's), (6, 26935), (8, 26959), (9, 27073), (10, 27100), (11, 27181), (12, 27187), (13, 27193), (14, 27247), (18, 27319),

Gene: Khaleesi\_75 Start: 26654, Stop: 27160, Start Num: 3

Candidate Starts for Khaleesi\_75:

(Start: 3 @26654 has 3 MA's), (4, 26675), (5, 26690), (7, 26741), (8, 26765), (9, 26879), (10, 26906), (11, 26987), (12, 26993), (13, 26999), (14, 27053), (18, 27125),

Gene: LRRHood\_70 Start: 26148, Stop: 26663, Start Num: 2

Candidate Starts for LRRHood\_70:

(Start: 1 @26142 has 18 MA's), (Start: 2 @26148 has 56 MA's), (6, 26244), (8, 26268), (9, 26382), (10, 26409), (11, 26490), (12, 26496), (13, 26502), (14, 26556), (18, 26628),

Gene: Lee7\_74 Start: 26898, Stop: 27413, Start Num: 2

Candidate Starts for Lee7\_74:

(Start: 1 @26892 has 18 MA's), (Start: 2 @26898 has 56 MA's), (6, 26994), (8, 27018), (9, 27132), (10, 27159), (11, 27240), (12, 27246), (13, 27252), (14, 27306), (18, 27378),

Gene: LinStu\_75 Start: 27307, Stop: 27822, Start Num: 2

Candidate Starts for LinStu\_75:

(Start: 1 @27301 has 18 MA's), (Start: 2 @27307 has 56 MA's), (6, 27403), (8, 27427), (9, 27541), (10, 27568), (11, 27649), (12, 27655), (13, 27661), (14, 27715), (18, 27787),

Gene: Loanshark\_76 Start: 26897, Stop: 27412, Start Num: 2

Candidate Starts for Loanshark\_76:

(Start: 1 @26891 has 18 MA's), (Start: 2 @26897 has 56 MA's), (6, 26993), (8, 27017), (9, 27131), (10, 27158), (11, 27239), (12, 27245), (13, 27251), (14, 27305), (18, 27377),

Gene: LolaVince\_78 Start: 28052, Stop: 28573, Start Num: 1

Candidate Starts for LolaVince\_78:

(Start: 1 @28052 has 18 MA's), (Start: 2 @28058 has 56 MA's), (6, 28154), (8, 28178), (9, 28292), (10, 28319), (11, 28400), (12, 28406), (13, 28412), (14, 28466), (18, 28538),

Gene: LordLeafolot\_80 Start: 28228, Stop: 28743, Start Num: 2

Candidate Starts for LordLeafolot\_80:

(Start: 1 @28222 has 18 MA's), (Start: 2 @28228 has 56 MA's), (6, 28324), (8, 28348), (9, 28462), (10, 28489), (11, 28570), (12, 28576), (13, 28582), (14, 28636), (18, 28708),

Gene: Lukilu\_66 Start: 25344, Stop: 25925, Start Num: 1

Candidate Starts for Lukilu\_66:

(Start: 1 @25344 has 18 MA's), (Start: 2 @25350 has 56 MA's), (6, 25446), (8, 25470), (9, 25584), (10, 25611), (11, 25692), (12, 25698), (13, 25704), (15, 25779), (16, 25803), (17, 25818), (19, 25863), (20, 25908), (21, 25920),

Gene: Maby2021\_76 Start: 26578, Stop: 27093, Start Num: 2

Candidate Starts for Maby2021\_76:

(Start: 1 @26572 has 18 MA's), (Start: 2 @26578 has 56 MA's), (6, 26674), (8, 26698), (9, 26812), (10, 26839), (11, 26920), (12, 26926), (13, 26932), (14, 26986), (18, 27058),

Gene: Mangeria\_76 Start: 26319, Stop: 26834, Start Num: 2

Candidate Starts for Mangeria\_76:

(Start: 1 @26313 has 18 MA's), (Start: 2 @26319 has 56 MA's), (6, 26415), (8, 26439), (9, 26553), (10, 26580), (11, 26661), (12, 26667), (13, 26673), (14, 26727), (18, 26799),

Gene: McWolfish\_74 Start: 26335, Stop: 26841, Start Num: 3

Candidate Starts for McWolfish\_74:

(Start: 3 @26335 has 3 MA's), (4, 26356), (5, 26371), (7, 26422), (8, 26446), (9, 26560), (10, 26587), (11, 26668), (12, 26674), (13, 26680), (14, 26734), (18, 26806),

Gene: Megamind\_75 Start: 26563, Stop: 27078, Start Num: 2

Candidate Starts for Megamind\_75:

(Start: 1 @26557 has 18 MA's), (Start: 2 @26563 has 56 MA's), (6, 26659), (8, 26683), (9, 26797), (10, 26824), (11, 26905), (12, 26911), (13, 26917), (14, 26971), (18, 27043),

Gene: MikeLiesIn\_76 Start: 26904, Stop: 27425, Start Num: 1

Candidate Starts for MikeLiesIn\_76:

(Start: 1 @26904 has 18 MA's), (Start: 2 @26910 has 56 MA's), (6, 27006), (8, 27030), (9, 27144), (10, 27171), (11, 27252), (12, 27258), (13, 27264), (14, 27318), (18, 27390),

Gene: Mikro\_74 Start: 27704, Stop: 28219, Start Num: 2

Candidate Starts for Mikro\_74:

(Start: 1 @27698 has 18 MA's), (Start: 2 @27704 has 56 MA's), (6, 27800), (8, 27824), (9, 27938), (10, 27965), (11, 28046), (12, 28052), (13, 28058), (14, 28112), (18, 28184),

Gene: MoMoMixon\_76 Start: 26995, Stop: 27525, Start Num: 2

Candidate Starts for MoMoMixon\_76:

(Start: 1 @26989 has 18 MA's), (Start: 2 @26995 has 56 MA's), (6, 27106), (8, 27130), (9, 27244), (10, 27271), (11, 27352), (12, 27358), (13, 27364), (14, 27418), (18, 27490),

Gene: Napoleon13\_72 Start: 24705, Stop: 25220, Start Num: 2

Candidate Starts for Napoleon13\_72:

(Start: 1 @24699 has 18 MA's), (Start: 2 @24705 has 56 MA's), (6, 24801), (8, 24825), (9, 24939), (10, 24966), (11, 25047), (12, 25053), (13, 25059), (14, 25113), (18, 25185),



Gene: Nappy\_77 Start: 27199, Stop: 27714, Start Num: 2

Candidate Starts for Nappy\_77:

(Start: 1 @27193 has 18 MA's), (Start: 2 @27199 has 56 MA's), (6, 27295), (8, 27319), (9, 27433), (10, 27460), (11, 27541), (12, 27547), (13, 27553), (14, 27607), (18, 27679),

Gene: Naval22\_81 Start: 27920, Stop: 28435, Start Num: 2

Candidate Starts for Naval22\_81:

(Start: 1 @27914 has 18 MA's), (Start: 2 @27920 has 56 MA's), (6, 28016), (8, 28040), (9, 28154), (10, 28181), (11, 28262), (12, 28268), (13, 28274), (14, 28328), (18, 28400),

Gene: NedWong\_77 Start: 26891, Stop: 27412, Start Num: 1

Candidate Starts for NedWong\_77:

(Start: 1 @26891 has 18 MA's), (Start: 2 @26897 has 56 MA's), (6, 26993), (8, 27017), (9, 27131), (10, 27158), (11, 27239), (12, 27245), (13, 27251), (14, 27305), (18, 27377),

Gene: Nidhogg\_76 Start: 26751, Stop: 27266, Start Num: 2

Candidate Starts for Nidhogg\_76:

(Start: 1 @26745 has 18 MA's), (Start: 2 @26751 has 56 MA's), (6, 26847), (8, 26871), (9, 26985), (10, 27012), (11, 27093), (12, 27099), (13, 27105), (14, 27159), (18, 27231),

Gene: NoodleTree\_79 Start: 27347, Stop: 27862, Start Num: 2

Candidate Starts for NoodleTree\_79:

(Start: 1 @27341 has 18 MA's), (Start: 2 @27347 has 56 MA's), (6, 27443), (8, 27467), (9, 27581), (10, 27608), (11, 27689), (12, 27695), (13, 27701), (14, 27755), (18, 27827),

Gene: Norm\_77 Start: 26899, Stop: 27414, Start Num: 2

Candidate Starts for Norm\_77:

(Start: 1 @26893 has 18 MA's), (Start: 2 @26899 has 56 MA's), (6, 26995), (8, 27019), (9, 27133), (10, 27160), (11, 27241), (12, 27247), (13, 27253), (14, 27307), (18, 27379),

Gene: NuevoMundo\_82 Start: 28277, Stop: 28792, Start Num: 2

Candidate Starts for NuevoMundo\_82:

(Start: 1 @28271 has 18 MA's), (Start: 2 @28277 has 56 MA's), (6, 28373), (8, 28397), (9, 28511), (10, 28538), (11, 28619), (12, 28625), (13, 28631), (14, 28685), (18, 28757),

Gene: ParkTD\_77 Start: 26887, Stop: 27408, Start Num: 1

Candidate Starts for ParkTD\_77:

(Start: 1 @26887 has 18 MA's), (Start: 2 @26893 has 56 MA's), (6, 26989), (8, 27013), (9, 27127), (10, 27154), (11, 27235), (12, 27241), (13, 27247), (14, 27301), (18, 27373),

Gene: Phox\_72 Start: 26830, Stop: 27345, Start Num: 2

Candidate Starts for Phox\_72:

(Start: 1 @26824 has 18 MA's), (Start: 2 @26830 has 56 MA's), (6, 26926), (8, 26950), (9, 27064), (10, 27091), (11, 27172), (12, 27178), (13, 27184), (14, 27238), (18, 27310),

Gene: Pier\_80 Start: 26972, Stop: 27493, Start Num: 1

Candidate Starts for Pier\_80:

(Start: 1 @26972 has 18 MA's), (Start: 2 @26978 has 56 MA's), (6, 27074), (8, 27098), (9, 27212), (10, 27239), (11, 27320), (12, 27326), (13, 27332), (14, 27386), (18, 27458),

Gene: Pleione\_78 Start: 26896, Stop: 27411, Start Num: 2

Candidate Starts for Pleione\_78:

(Start: 1 @26890 has 18 MA's), (Start: 2 @26896 has 56 MA's), (6, 26992), (8, 27016), (9, 27130), (10, 27157), (11, 27238), (12, 27244), (13, 27250), (14, 27304), (18, 27376),

Gene: PurduePete\_76 Start: 26951, Stop: 27457, Start Num: 3

Candidate Starts for PurduePete\_76:

(Start: 3 @26951 has 3 MA's), (4, 26972), (5, 26987), (7, 27038), (8, 27062), (9, 27176), (10, 27203), (11, 27284), (12, 27290), (13, 27296), (14, 27350), (18, 27422),

Gene: Rizal\_73 Start: 25814, Stop: 26329, Start Num: 2

Candidate Starts for Rizal\_73:

(Start: 1 @25808 has 18 MA's), (Start: 2 @25814 has 56 MA's), (6, 25910), (8, 25934), (9, 26048), (10, 26075), (11, 26156), (12, 26162), (13, 26168), (14, 26222), (18, 26294),

Gene: RoMag\_71 Start: 26139, Stop: 26654, Start Num: 2

Candidate Starts for RoMag\_71:

(Start: 1 @26133 has 18 MA's), (Start: 2 @26139 has 56 MA's), (6, 26235), (8, 26259), (9, 26373), (10, 26400), (11, 26481), (12, 26487), (13, 26493), (14, 26547), (18, 26619),

Gene: Ronan\_69 Start: 23647, Stop: 24162, Start Num: 2

Candidate Starts for Ronan\_69:

(Start: 1 @23641 has 18 MA's), (Start: 2 @23647 has 56 MA's), (6, 23743), (8, 23767), (9, 23881), (10, 23908), (11, 23989), (12, 23995), (13, 24001), (14, 24055), (18, 24127),

Gene: Sebata\_76 Start: 27426, Stop: 27941, Start Num: 2

Candidate Starts for Sebata\_76:

(Start: 1 @27420 has 18 MA's), (Start: 2 @27426 has 56 MA's), (6, 27522), (8, 27546), (9, 27660), (10, 27687), (11, 27768), (12, 27774), (13, 27780), (14, 27834), (18, 27906),

Gene: Shaqnato\_68 Start: 24570, Stop: 25085, Start Num: 2

Candidate Starts for Shaqnato\_68:

(Start: 1 @24564 has 18 MA's), (Start: 2 @24570 has 56 MA's), (6, 24666), (8, 24690), (9, 24804), (10, 24831), (11, 24912), (12, 24918), (13, 24924), (14, 24978), (18, 25050),

Gene: Shelob\_78 Start: 27889, Stop: 28404, Start Num: 2

Candidate Starts for Shelob\_78:

(Start: 1 @27883 has 18 MA's), (Start: 2 @27889 has 56 MA's), (6, 27985), (8, 28009), (9, 28123), (10, 28150), (11, 28231), (12, 28237), (13, 28243), (14, 28297), (18, 28369),

Gene: Shrimp\_76 Start: 26895, Stop: 27416, Start Num: 1

Candidate Starts for Shrimp\_76:

(Start: 1 @26895 has 18 MA's), (Start: 2 @26901 has 56 MA's), (6, 26997), (8, 27021), (9, 27135), (10, 27162), (11, 27243), (12, 27249), (13, 27255), (14, 27309), (18, 27381),

Gene: Spec\_71 Start: 25528, Stop: 26043, Start Num: 2

Candidate Starts for Spec\_71:

(Start: 1 @25522 has 18 MA's), (Start: 2 @25528 has 56 MA's), (6, 25624), (8, 25648), (9, 25762), (10, 25789), (11, 25870), (12, 25876), (13, 25882), (14, 25936), (18, 26008),

Gene: Specks\_82 Start: 28692, Stop: 29207, Start Num: 2

Candidate Starts for Specks\_82:

(Start: 1 @28686 has 18 MA's), (Start: 2 @28692 has 56 MA's), (6, 28788), (8, 28812), (9, 28926), (10, 28953), (11, 29034), (12, 29040), (13, 29046), (14, 29100), (18, 29172),

Gene: Spud\_75 Start: 27206, Stop: 27727, Start Num: 1

Candidate Starts for Spud\_75:

(Start: 1 @27206 has 18 MA's), (Start: 2 @27212 has 56 MA's), (6, 27308), (8, 27332), (9, 27446), (10, 27473), (11, 27554), (12, 27560), (13, 27566), (14, 27620), (18, 27692),

Gene: SrishMeg2525\_75 Start: 26608, Stop: 27123, Start Num: 2

Candidate Starts for SrishMeg2525\_75:

(Start: 1 @26602 has 18 MA's), (Start: 2 @26608 has 56 MA's), (6, 26704), (8, 26728), (9, 26842), (10, 26869), (11, 26950), (12, 26956), (13, 26962), (14, 27016), (18, 27088),

Gene: StephanieG\_76 Start: 27590, Stop: 28111, Start Num: 1

Candidate Starts for StephanieG\_76:

(Start: 1 @27590 has 18 MA's), (Start: 2 @27596 has 56 MA's), (6, 27692), (8, 27716), (9, 27830), (10, 27857), (11, 27938), (12, 27944), (13, 27950), (14, 28004), (18, 28076),

Gene: StubbySaigey\_77 Start: 25537, Stop: 26052, Start Num: 2

Candidate Starts for StubbySaigey\_77:

(Start: 1 @25531 has 18 MA's), (Start: 2 @25537 has 56 MA's), (6, 25633), (8, 25657), (9, 25771), (10, 25798), (11, 25879), (12, 25885), (13, 25891), (14, 25945), (18, 26017),

Gene: Teardrop\_76 Start: 26016, Stop: 26531, Start Num: 2

Candidate Starts for Teardrop\_76:

(Start: 1 @26010 has 18 MA's), (Start: 2 @26016 has 56 MA's), (6, 26112), (8, 26136), (9, 26250), (10, 26277), (11, 26358), (12, 26364), (13, 26370), (14, 26424), (18, 26496),

Gene: TinyTim\_76 Start: 26897, Stop: 27412, Start Num: 2

Candidate Starts for TinyTim\_76:

(Start: 1 @26891 has 18 MA's), (Start: 2 @26897 has 56 MA's), (6, 26993), (8, 27017), (9, 27131), (10, 27158), (11, 27239), (12, 27245), (13, 27251), (14, 27305), (18, 27377),

Gene: Tonenili\_89 Start: 30479, Stop: 31042, Start Num: 2

Candidate Starts for Tonenili\_89:

(Start: 1 @30473 has 18 MA's), (Start: 2 @30479 has 56 MA's), (6, 30575), (8, 30599), (9, 30713), (10, 30740), (11, 30821), (12, 30827), (13, 30833), (14, 30887), (18, 30959),

Gene: Tortoise16\_74 Start: 26663, Stop: 27178, Start Num: 2

Candidate Starts for Tortoise16\_74:

(Start: 1 @26657 has 18 MA's), (Start: 2 @26663 has 56 MA's), (6, 26759), (8, 26783), (9, 26897), (10, 26924), (11, 27005), (12, 27011), (13, 27017), (14, 27071), (18, 27143),

Gene: Tyke\_78 Start: 27567, Stop: 28082, Start Num: 2

Candidate Starts for Tyke\_78:

(Start: 1 @27561 has 18 MA's), (Start: 2 @27567 has 56 MA's), (6, 27663), (8, 27687), (9, 27801), (10, 27828), (11, 27909), (12, 27915), (13, 27921), (14, 27975), (18, 28047),

Gene: Wally\_74 Start: 25446, Stop: 25967, Start Num: 1

Candidate Starts for Wally\_74:

(Start: 1 @25446 has 18 MA's), (Start: 2 @25452 has 56 MA's), (6, 25548), (8, 25572), (9, 25686), (10, 25713), (11, 25794), (12, 25800), (13, 25806), (14, 25860), (18, 25932),

Gene: Willis\_77 Start: 26792, Stop: 27307, Start Num: 2

Candidate Starts for Willis\_77:

(Start: 1 @26786 has 18 MA's), (Start: 2 @26792 has 56 MA's), (6, 26888), (8, 26912), (9, 27026), (10, 27053), (11, 27134), (12, 27140), (13, 27146), (14, 27200), (18, 27272),

Gene: YemiJoy2021\_77 Start: 26894, Stop: 27409, Start Num: 2

Candidate Starts for YemiJoy2021\_77:

(Start: 1 @26888 has 18 MA's), (Start: 2 @26894 has 56 MA's), (6, 26990), (8, 27014), (9, 27128), (10, 27155), (11, 27236), (12, 27242), (13, 27248), (14, 27302), (18, 27374),

Gene: Yucca\_75 Start: 26813, Stop: 27334, Start Num: 1

Candidate Starts for Yucca\_75:

(Start: 1 @26813 has 18 MA's), (Start: 2 @26819 has 56 MA's), (6, 26915), (8, 26939), (9, 27053), (10, 27080), (11, 27161), (12, 27167), (13, 27173), (14, 27227), (18, 27299),

Gene: Zalkecks\_77 Start: 26576, Stop: 27097, Start Num: 1

Candidate Starts for Zalkecks\_77:

(Start: 1 @26576 has 18 MA's), (Start: 2 @26582 has 56 MA's), (6, 26678), (8, 26702), (9, 26816), (10, 26843), (11, 26924), (12, 26930), (13, 26936), (14, 26990), (18, 27062),

Gene: Zeenon\_77 Start: 26878, Stop: 27399, Start Num: 1

Candidate Starts for Zeenon\_77:

(Start: 1 @26878 has 18 MA's), (Start: 2 @26884 has 56 MA's), (6, 26980), (8, 27004), (9, 27118), (10, 27145), (11, 27226), (12, 27232), (13, 27238), (14, 27292), (18, 27364),

Gene: ZygoTaiga\_75 Start: 26898, Stop: 27413, Start Num: 2

Candidate Starts for ZygoTaiga\_75:

(Start: 1 @26892 has 18 MA's), (Start: 2 @26898 has 56 MA's), (6, 26994), (8, 27018), (9, 27132), (10, 27159), (11, 27240), (12, 27246), (13, 27252), (14, 27306), (18, 27378),