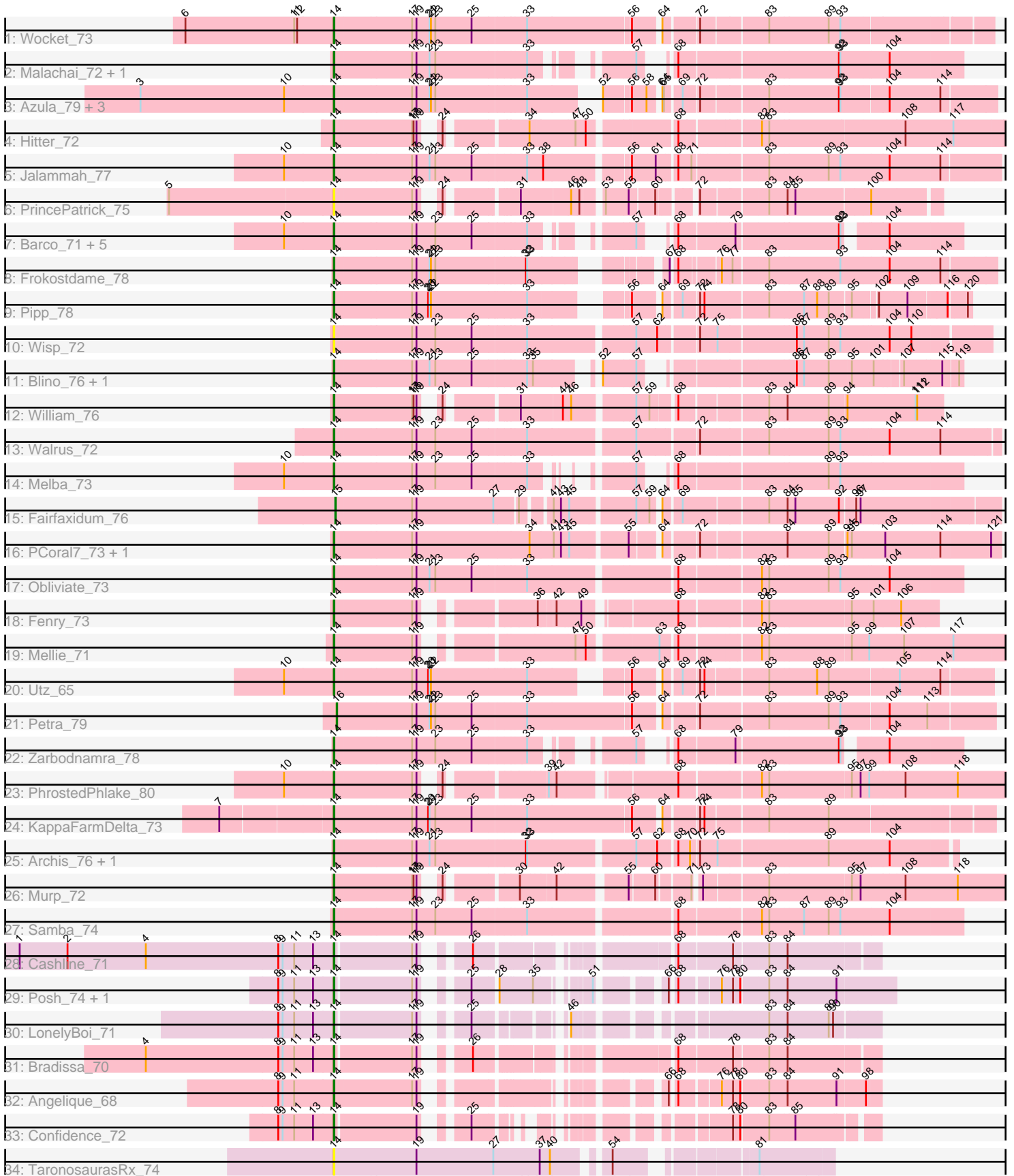


Pham 157959



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 157959 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157959 has 47 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Wocket\_73
- Track 2 : Malachai\_72, Begonia\_72
- Track 3 : Azula\_79, MissRona\_79, Blueberry\_78, Gambino\_81
- Track 4 : Hitter\_72
- Track 5 : Jalammah\_77
- Track 6 : PrincePatrick\_75
- Track 7 : Barco\_71, CaptainKirk2\_74, MintFen\_74, Guacamole\_72, Delian\_77, JasperJr\_72
- Track 8 : Frokostdame\_78
- Track 9 : Pipp\_78
- Track 10 : Wisp\_72
- Track 11 : Blino\_76, CarolAnn\_75
- Track 12 : William\_76
- Track 13 : Walrus\_72
- Track 14 : Melba\_73
- Track 15 : Fairfaxidum\_76
- Track 16 : PCoral7\_73, Toast\_73
- Track 17 : Obliviate\_73
- Track 18 : Fenry\_73
- Track 19 : Mellie\_71
- Track 20 : Utz\_65
- Track 21 : Petra\_79
- Track 22 : Zarbodnamra\_78
- Track 23 : PhrostedPhlake\_80
- Track 24 : KappaFarmDelta\_73
- Track 25 : Archis\_76, ZiggyZoo\_75
- Track 26 : Murp\_72
- Track 27 : Samba\_74
- Track 28 : Cashline\_71
- Track 29 : Posh\_74, Wrigley\_76
- Track 30 : LonelyBoi\_71
- Track 31 : Bradissa\_70
- Track 32 : Angelique\_68
- Track 33 : Confidence\_72
- Track 34 : TaronosaurusRx\_74

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

The start number called the most often in the published annotations is 14, it was called in 42 of the 44 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angelique\_68, Archis\_76, Azula\_79, Barco\_71, Begonia\_72, Blino\_76, Blueberry\_78, Bradissa\_70, CaptainKirk2\_74, CarolAnn\_75, Cashline\_71, Confidence\_72, Delian\_77, Fenry\_73, Frokostdame\_78, Gambino\_81, Guacamole\_72, Hitter\_72, Jalammah\_77, JasperJr\_72, KappaFarmDelta\_73, LonelyBoi\_71, Malachai\_72, Melba\_73, Mellie\_71, MintFen\_74, MissRona\_79, Murp\_72, Obliviate\_73, PCoral7\_73, PhrostedPhlake\_80, Pipp\_78, Posh\_74, PrincePatrick\_75, Samba\_74, TaronosaurusRx\_74, Toast\_73, Utz\_65, Walrus\_72, William\_76, Wisp\_72, Wocket\_73, Wrigley\_76, Zarbodnamra\_78, ZiggyZoo\_75,

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

- 

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

- Fairfaxidum\_76, Petra\_79,

### **Summary by start number:**

Start 14:

- Found in 45 of 47 ( 95.7% ) of genes in pham
- Manual Annotations of this start: 42 of 44
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angelique\_68 (CY1), Archis\_76 (CV), Azula\_79 (CV), Barco\_71 (CV), Begonia\_72 (CV), Blino\_76 (CV), Blueberry\_78 (CV), Bradissa\_70 (CY1), CaptainKirk2\_74 (CV), CarolAnn\_75 (CV), Cashline\_71 (CY), Confidence\_72 (CY1), Delian\_77 (CV), Fenry\_73 (CV), Frokostdame\_78 (CV), Gambino\_81 (CV), Guacamole\_72 (CV), Hitter\_72 (CV), Jalammah\_77 (CV), JasperJr\_72 (CV), KappaFarmDelta\_73 (CV), LonelyBoi\_71 (CY), Malachai\_72 (CV), Melba\_73 (CV), Mellie\_71 (CV), MintFen\_74 (CV), MissRona\_79 (CV), Murp\_72 (CV), Obliviate\_73 (CV), PCoral7\_73 (CV), PhrostedPhlake\_80 (CV), Pipp\_78 (CV), Posh\_74 (CY), PrincePatrick\_75 (CV), Samba\_74 (CV), TaronosaurusRx\_74 (DB), Toast\_73 (CV), Utz\_65 (CV), Walrus\_72 (CV), William\_76 (CV), Wisp\_72 (CV), Wocket\_73 (CV), Wrigley\_76 (CY), Zarbodnamra\_78 (CV), ZiggyZoo\_75 (CV),

Start 15:

- Found in 1 of 47 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 44
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fairfaxidum\_76 (CV),

Start 16:

- Found in 1 of 47 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 44
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Petra\_79 (CV),

### **Summary by clusters:**

There are 4 clusters represented in this pham: CY1, CY, DB, CV,

Info for manual annotations of cluster CV:

- Start number 14 was manually annotated 35 times for cluster CV.
- Start number 15 was manually annotated 1 time for cluster CV.
- Start number 16 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CY:

- Start number 14 was manually annotated 4 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 14 was manually annotated 3 times for cluster CY1.

### **Gene Information:**

Gene: Angelique\_68 Start: 47187, Stop: 48083, Start Num: 14

Candidate Starts for Angelique\_68:

(8, 47073), (9, 47082), (11, 47106), (Start: 14 @47187 has 42 MA's), (17, 47346), (19, 47355), (66, 47694), (68, 47703), (76, 47775), (78, 47796), (80, 47811), (83, 47862), (84, 47898), (91, 47997), (98, 48054),

Gene: Archis\_76 Start: 44694, Stop: 45863, Start Num: 14

Candidate Starts for Archis\_76:

(Start: 14 @44694 has 42 MA's), (17, 44847), (19, 44856), (21, 44883), (23, 44895), (32, 45069), (33, 45072), (57, 45273), (62, 45315), (68, 45345), (70, 45369), (72, 45381), (75, 45414), (89, 45624), (104, 45741),

Gene: Azula\_79 Start: 48841, Stop: 50049, Start Num: 14

Candidate Starts for Azula\_79:

(3, 48445), (10, 48742), (Start: 14 @48841 has 42 MA's), (17, 48994), (19, 49003), (21, 49030), (22, 49033), (23, 49042), (33, 49219), (52, 49321), (56, 49372), (58, 49402), (64, 49420), (65, 49423), (69, 49453), (72, 49480), (83, 49606), (92, 49747), (93, 49750), (104, 49840), (114, 49942),

Gene: Barco\_71 Start: 44619, Stop: 45674, Start Num: 14

Candidate Starts for Barco\_71:

(10, 44517), (Start: 14 @44619 has 42 MA's), (17, 44772), (19, 44781), (23, 44820), (25, 44895), (33, 44997), (57, 45135), (68, 45162), (79, 45264), (92, 45462), (93, 45465), (104, 45528),

Gene: Begonia\_72 Start: 47392, Stop: 48474, Start Num: 14

Candidate Starts for Begonia\_72:

(Start: 14 @47392 has 42 MA's), (17, 47545), (19, 47554), (21, 47581), (23, 47593), (33, 47770), (57, 47908), (68, 47935), (92, 48235), (93, 48238), (104, 48328),

Gene: Blino\_76 Start: 50184, Stop: 51278, Start Num: 14

Candidate Starts for Blino\_76:

(Start: 14 @50184 has 42 MA's), (17, 50337), (19, 50346), (21, 50373), (23, 50385), (25, 50460), (33, 50562), (35, 50574), (52, 50664), (57, 50730), (86, 50970), (87, 50985), (89, 51036), (95, 51078), (101, 51120), (107, 51171), (115, 51240), (119, 51270),

Gene: Blueberry\_78 Start: 48841, Stop: 50049, Start Num: 14

Candidate Starts for Blueberry\_78:

(3, 48445), (10, 48742), (Start: 14 @48841 has 42 MA's), (17, 48994), (19, 49003), (21, 49030), (22, 49033), (23, 49042), (33, 49219), (52, 49321), (56, 49372), (58, 49402), (64, 49420), (65, 49423), (69, 49453), (72, 49480), (83, 49606), (92, 49747), (93, 49750), (104, 49840), (114, 49942),

Gene: Bradissa\_70 Start: 48716, Stop: 49630, Start Num: 14

Candidate Starts for Bradissa\_70:

(4, 48329), (8, 48602), (9, 48611), (11, 48635), (13, 48674), (Start: 14 @48716 has 42 MA's), (17, 48866), (19, 48875), (26, 48935), (68, 49250), (78, 49352), (83, 49418), (84, 49454),

Gene: CaptainKirk2\_74 Start: 44176, Stop: 45231, Start Num: 14

Candidate Starts for CaptainKirk2\_74:

(10, 44074), (Start: 14 @44176 has 42 MA's), (17, 44329), (19, 44338), (23, 44377), (25, 44452), (33, 44554), (57, 44692), (68, 44719), (79, 44821), (92, 45019), (93, 45022), (104, 45085),

Gene: CarolAnn\_75 Start: 50183, Stop: 51277, Start Num: 14

Candidate Starts for CarolAnn\_75:

(Start: 14 @50183 has 42 MA's), (17, 50336), (19, 50345), (21, 50372), (23, 50384), (25, 50459), (33, 50561), (35, 50573), (52, 50663), (57, 50729), (86, 50969), (87, 50984), (89, 51035), (95, 51077), (101, 51119), (107, 51170), (115, 51239), (119, 51269),

Gene: Cashline\_71 Start: 49411, Stop: 50325, Start Num: 14

Candidate Starts for Cashline\_71:

(1, 48763), (2, 48862), (4, 49024), (8, 49297), (9, 49306), (11, 49330), (13, 49369), (Start: 14 @49411 has 42 MA's), (17, 49561), (19, 49570), (26, 49630), (68, 49945), (78, 50047), (83, 50113), (84, 50149),

Gene: Confidence\_72 Start: 46779, Stop: 47603, Start Num: 14

Candidate Starts for Confidence\_72:

(8, 46665), (9, 46674), (11, 46698), (13, 46737), (Start: 14 @46779 has 42 MA's), (19, 46938), (25, 46995), (78, 47334), (80, 47349), (83, 47400), (85, 47451),

Gene: Delian\_77 Start: 44174, Stop: 45229, Start Num: 14

Candidate Starts for Delian\_77:

(10, 44072), (Start: 14 @44174 has 42 MA's), (17, 44327), (19, 44336), (23, 44375), (25, 44450), (33, 44552), (57, 44690), (68, 44717), (79, 44819), (92, 45017), (93, 45020), (104, 45083),

Gene: Fairfaxidum\_76 Start: 46475, Stop: 47704, Start Num: 15

Candidate Starts for Fairfaxidum\_76:

(Start: 15 @46475 has 1 MA's), (17, 46625), (19, 46634), (27, 46793), (29, 46835), (41, 46883), (43, 46898), (45, 46913), (57, 47033), (59, 47060), (64, 47072), (69, 47105), (83, 47264), (84, 47300), (85, 47315), (92, 47405), (96, 47435), (97, 47444),

Gene: Fenry\_73 Start: 46229, Stop: 47299, Start Num: 14

Candidate Starts for Fenry\_73:

(Start: 14 @46229 has 42 MA's), (17, 46385), (19, 46394), (36, 46568), (42, 46598), (49, 46646), (68, 46805), (82, 46952), (83, 46967), (95, 47129), (101, 47171), (106, 47225),

Gene: Frokostdame\_78 Start: 48333, Stop: 49514, Start Num: 14

Candidate Starts for Frokostdame\_78:

(Start: 14 @48333 has 42 MA's), (17, 48486), (19, 48495), (21, 48522), (22, 48525), (23, 48534), (32, 48708), (33, 48711), (67, 48906), (68, 48915), (76, 48987), (77, 49008), (83, 49074), (93, 49218),

(104, 49308), (114, 49407),

Gene: Gambino\_81 Start: 48841, Stop: 50049, Start Num: 14

Candidate Starts for Gambino\_81:

(3, 48445), (10, 48742), (Start: 14 @48841 has 42 MA's), (17, 48994), (19, 49003), (21, 49030), (22, 49033), (23, 49042), (33, 49219), (52, 49321), (56, 49372), (58, 49402), (64, 49420), (65, 49423), (69, 49453), (72, 49480), (83, 49606), (92, 49747), (93, 49750), (104, 49840), (114, 49942),

Gene: Guacamole\_72 Start: 45594, Stop: 46649, Start Num: 14

Candidate Starts for Guacamole\_72:

(10, 45492), (Start: 14 @45594 has 42 MA's), (17, 45747), (19, 45756), (23, 45795), (25, 45870), (33, 45972), (57, 46110), (68, 46137), (79, 46239), (92, 46437), (93, 46440), (104, 46503),

Gene: Hitter\_72 Start: 43685, Stop: 44908, Start Num: 14

Candidate Starts for Hitter\_72:

(Start: 14 @43685 has 42 MA's), (17, 43841), (18, 43844), (19, 43850), (24, 43868), (34, 44009), (47, 44096), (50, 44117), (68, 44276), (82, 44420), (83, 44435), (108, 44702), (117, 44801),

Gene: Jalammah\_77 Start: 47558, Stop: 48814, Start Num: 14

Candidate Starts for Jalammah\_77:

(10, 47456), (Start: 14 @47558 has 42 MA's), (17, 47711), (19, 47720), (21, 47747), (23, 47759), (25, 47834), (33, 47936), (38, 47969), (56, 48122), (61, 48170), (68, 48203), (71, 48230), (83, 48362), (89, 48482), (93, 48506), (104, 48599), (114, 48698),

Gene: JasperJr\_72 Start: 45594, Stop: 46649, Start Num: 14

Candidate Starts for JasperJr\_72:

(10, 45492), (Start: 14 @45594 has 42 MA's), (17, 45747), (19, 45756), (23, 45795), (25, 45870), (33, 45972), (57, 46110), (68, 46137), (79, 46239), (92, 46437), (93, 46440), (104, 46503),

Gene: KappaFarmDelta\_73 Start: 45008, Stop: 46261, Start Num: 14

Candidate Starts for KappaFarmDelta\_73:

(7, 44789), (Start: 14 @45008 has 42 MA's), (17, 45161), (19, 45170), (20, 45194), (21, 45197), (23, 45209), (25, 45284), (33, 45386), (56, 45593), (64, 45641), (72, 45701), (74, 45710), (83, 45827), (89, 45947),

Gene: LonelyBoi\_71 Start: 49878, Stop: 50750, Start Num: 14

Candidate Starts for LonelyBoi\_71:

(8, 49764), (9, 49773), (11, 49797), (13, 49836), (Start: 14 @49878 has 42 MA's), (17, 50028), (19, 50037), (25, 50094), (46, 50223), (83, 50535), (84, 50571), (89, 50655), (90, 50664),

Gene: Malachai\_72 Start: 47392, Stop: 48474, Start Num: 14

Candidate Starts for Malachai\_72:

(Start: 14 @47392 has 42 MA's), (17, 47545), (19, 47554), (21, 47581), (23, 47593), (33, 47770), (57, 47908), (68, 47935), (92, 48235), (93, 48238), (104, 48328),

Gene: Melba\_73 Start: 44285, Stop: 45343, Start Num: 14

Candidate Starts for Melba\_73:

(10, 44183), (Start: 14 @44285 has 42 MA's), (17, 44438), (19, 44447), (23, 44486), (25, 44561), (33, 44663), (57, 44774), (68, 44801), (89, 45080), (93, 45104),

Gene: Mellie\_71 Start: 44379, Stop: 45626, Start Num: 14

Candidate Starts for Mellie\_71:

(Start: 14 @44379 has 42 MA's), (17, 44535), (19, 44544), (47, 44793), (50, 44814), (63, 44943), (68, 44973), (82, 45117), (83, 45132), (95, 45294), (99, 45327), (107, 45396), (117, 45495),

Gene: MintFen\_74 Start: 44790, Stop: 45845, Start Num: 14

Candidate Starts for MintFen\_74:

(10, 44688), (Start: 14 @44790 has 42 MA's), (17, 44943), (19, 44952), (23, 44991), (25, 45066), (33, 45168), (57, 45306), (68, 45333), (79, 45435), (92, 45633), (93, 45636), (104, 45699),

Gene: MissRona\_79 Start: 48842, Stop: 50050, Start Num: 14

Candidate Starts for MissRona\_79:

(3, 48446), (10, 48743), (Start: 14 @48842 has 42 MA's), (17, 48995), (19, 49004), (21, 49031), (22, 49034), (23, 49043), (33, 49220), (52, 49322), (56, 49373), (58, 49403), (64, 49421), (65, 49424), (69, 49454), (72, 49481), (83, 49607), (92, 49748), (93, 49751), (104, 49841), (114, 49943),

Gene: Murp\_72 Start: 47529, Stop: 48725, Start Num: 14

Candidate Starts for Murp\_72:

(Start: 14 @47529 has 42 MA's), (17, 47685), (18, 47688), (19, 47694), (24, 47712), (30, 47835), (42, 47898), (55, 48018), (60, 48066), (71, 48126), (73, 48135), (83, 48252), (95, 48414), (97, 48432), (108, 48516), (118, 48624),

Gene: Obliviate\_73 Start: 44695, Stop: 45894, Start Num: 14

Candidate Starts for Obliviate\_73:

(Start: 14 @44695 has 42 MA's), (17, 44848), (19, 44857), (21, 44884), (23, 44896), (25, 44971), (33, 45073), (68, 45352), (82, 45499), (83, 45514), (89, 45634), (93, 45658), (104, 45748),

Gene: PCoral7\_73 Start: 45263, Stop: 46528, Start Num: 14

Candidate Starts for PCoral7\_73:

(Start: 14 @45263 has 42 MA's), (17, 45416), (19, 45425), (34, 45656), (41, 45704), (43, 45719), (45, 45734), (55, 45839), (64, 45887), (72, 45947), (84, 46106), (89, 46190), (94, 46223), (95, 46232), (103, 46298), (114, 46406), (121, 46508),

Gene: Petra\_79 Start: 46902, Stop: 48161, Start Num: 16

Candidate Starts for Petra\_79:

(Start: 16 @46902 has 1 MA's), (17, 47049), (19, 47058), (21, 47085), (22, 47088), (23, 47097), (25, 47172), (33, 47274), (56, 47481), (64, 47529), (72, 47589), (83, 47724), (89, 47844), (93, 47868), (104, 47961), (113, 48039),

Gene: PhrostedPhlake\_80 Start: 47100, Stop: 48311, Start Num: 14

Candidate Starts for PhrostedPhlake\_80:

(10, 46998), (Start: 14 @47100 has 42 MA's), (17, 47256), (19, 47265), (24, 47283), (39, 47457), (42, 47469), (68, 47676), (82, 47823), (83, 47838), (95, 48000), (97, 48018), (99, 48033), (108, 48102), (118, 48210),

Gene: Pipp\_78 Start: 46743, Stop: 47876, Start Num: 14

Candidate Starts for Pipp\_78:

(Start: 14 @46743 has 42 MA's), (17, 46896), (19, 46905), (20, 46929), (21, 46932), (22, 46935), (33, 47124), (56, 47271), (64, 47319), (69, 47352), (72, 47379), (74, 47388), (83, 47514), (87, 47583), (88, 47610), (89, 47634), (95, 47676), (102, 47718), (109, 47769), (116, 47838), (120, 47868),

Gene: Posh\_74 Start: 49586, Stop: 50506, Start Num: 14

Candidate Starts for Posh\_74:

(8, 49472), (9, 49481), (11, 49505), (13, 49544), (Start: 14 @49586 has 42 MA's), (17, 49736), (19, 49745), (25, 49802), (28, 49847), (35, 49907), (51, 49982), (66, 50084), (68, 50093), (76, 50165), (78,

50186), (80, 50201), (83, 50252), (84, 50288), (91, 50387),

Gene: PrincePatrick\_75 Start: 44807, Stop: 45862, Start Num: 14

Candidate Starts for PrincePatrick\_75:

(5, 44471), (Start: 14 @44807 has 42 MA's), (17, 44963), (19, 44972), (24, 44990), (31, 45113), (46, 45209), (48, 45224), (53, 45257), (55, 45302), (60, 45350), (72, 45410), (83, 45533), (84, 45569), (85, 45584), (100, 45728),

Gene: Samba\_74 Start: 47557, Stop: 48759, Start Num: 14

Candidate Starts for Samba\_74:

(Start: 14 @47557 has 42 MA's), (17, 47710), (19, 47719), (23, 47758), (25, 47833), (33, 47935), (68, 48214), (82, 48361), (83, 48376), (87, 48445), (89, 48496), (93, 48520), (104, 48613),

Gene: TaronosaurusRx\_74 Start: 44917, Stop: 45819, Start Num: 14

Candidate Starts for TaronosaurusRx\_74:

(Start: 14 @44917 has 42 MA's), (19, 45082), (27, 45241), (37, 45334), (40, 45355), (54, 45445), (81, 45673),

Gene: Toast\_73 Start: 45263, Stop: 46528, Start Num: 14

Candidate Starts for Toast\_73:

(Start: 14 @45263 has 42 MA's), (17, 45416), (19, 45425), (34, 45656), (41, 45704), (43, 45719), (45, 45734), (55, 45839), (64, 45887), (72, 45947), (84, 46106), (89, 46190), (94, 46223), (95, 46232), (103, 46298), (114, 46406), (121, 46508),

Gene: Utz\_65 Start: 45168, Stop: 46367, Start Num: 14

Candidate Starts for Utz\_65:

(10, 45066), (Start: 14 @45168 has 42 MA's), (17, 45321), (19, 45330), (20, 45354), (21, 45357), (22, 45360), (33, 45549), (56, 45699), (64, 45747), (69, 45780), (72, 45807), (74, 45816), (83, 45933), (88, 46029), (89, 46053), (105, 46191), (114, 46269),

Gene: Walrus\_72 Start: 45757, Stop: 47022, Start Num: 14

Candidate Starts for Walrus\_72:

(Start: 14 @45757 has 42 MA's), (17, 45910), (19, 45919), (23, 45958), (25, 46033), (33, 46135), (57, 46339), (72, 46447), (83, 46573), (89, 46693), (93, 46717), (104, 46810), (114, 46909),

Gene: William\_76 Start: 46736, Stop: 47827, Start Num: 14

Candidate Starts for William\_76:

(Start: 14 @46736 has 42 MA's), (17, 46892), (18, 46895), (19, 46901), (24, 46919), (31, 47042), (44, 47123), (46, 47138), (57, 47252), (59, 47279), (68, 47324), (83, 47483), (84, 47519), (89, 47603), (94, 47636), (111, 47771), (112, 47774),

Gene: Wisp\_72 Start: 45241, Stop: 46479, Start Num: 14

Candidate Starts for Wisp\_72:

(Start: 14 @45241 has 42 MA's), (17, 45394), (19, 45403), (23, 45442), (25, 45517), (33, 45619), (57, 45820), (62, 45862), (72, 45928), (75, 45961), (86, 46105), (87, 46120), (89, 46171), (93, 46195), (104, 46285), (110, 46330),

Gene: Wocket\_73 Start: 45651, Stop: 46904, Start Num: 14

Candidate Starts for Wocket\_73:

(6, 45345), (11, 45570), (12, 45576), (Start: 14 @45651 has 42 MA's), (17, 45804), (19, 45813), (21, 45840), (22, 45843), (23, 45852), (25, 45927), (33, 46029), (56, 46236), (64, 46284), (72, 46344), (83, 46473), (89, 46593), (93, 46617),



Gene: Wrigley\_76 Start: 49169, Stop: 50089, Start Num: 14

Candidate Starts for Wrigley\_76:

(8, 49055), (9, 49064), (11, 49088), (13, 49127), (Start: 14 @49169 has 42 MA's), (17, 49319), (19, 49328), (25, 49385), (28, 49430), (35, 49490), (51, 49565), (66, 49667), (68, 49676), (76, 49748), (78, 49769), (80, 49784), (83, 49835), (84, 49871), (91, 49970),

Gene: Zarbodnamra\_78 Start: 45786, Stop: 46841, Start Num: 14

Candidate Starts for Zarbodnamra\_78:

(Start: 14 @45786 has 42 MA's), (17, 45939), (19, 45948), (23, 45987), (25, 46062), (33, 46164), (57, 46302), (68, 46329), (79, 46431), (92, 46629), (93, 46632), (104, 46695),

Gene: ZiggyZoo\_75 Start: 47158, Stop: 48327, Start Num: 14

Candidate Starts for ZiggyZoo\_75:

(Start: 14 @47158 has 42 MA's), (17, 47311), (19, 47320), (21, 47347), (23, 47359), (32, 47533), (33, 47536), (57, 47737), (62, 47779), (68, 47809), (70, 47833), (72, 47845), (75, 47878), (89, 48088), (104, 48205),