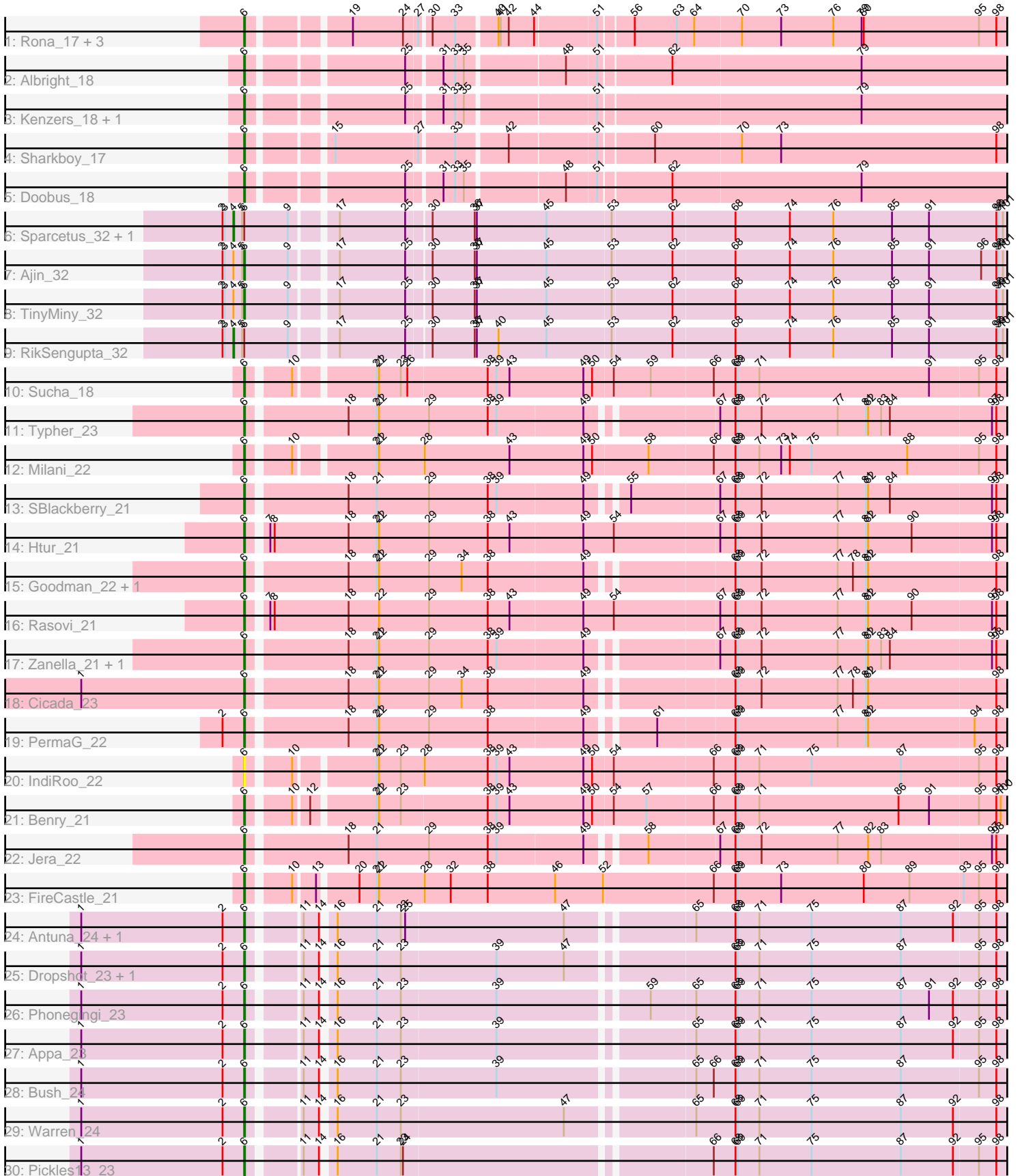


Zoomed Pham 194167



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 194167 Report

This analysis was run 11/02/24 on database version 579.

Pham number 194167 has 39 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Rona_17, Kieran_17, ChiliPepper_17, Dismas_17
- Track 2 : Albright_18
- Track 3 : Kenzers_18, Lynlen_18
- Track 4 : Sharkboy_17
- Track 5 : Doobus_18
- Track 6 : Sparcetus_32, Kors_33
- Track 7 : Ajin_32
- Track 8 : TinyMiny_32
- Track 9 : RikSengupta_32
- Track 10 : Sucha_18
- Track 11 : Typher_23
- Track 12 : Milani_22
- Track 13 : SBlackberry_21
- Track 14 : Htur_21
- Track 15 : Goodman_22, Johann_22
- Track 16 : Rasovi_21
- Track 17 : Zanella_21, TurboVicky_21
- Track 18 : Cicada_23
- Track 19 : PermaG_22
- Track 20 : IndiRoo_22
- Track 21 : Benry_21
- Track 22 : Jera_22
- Track 23 : FireCastle_21
- Track 24 : Antuna_24, MenE_24
- Track 25 : Dropshot_23, Blett_24
- Track 26 : Phonegingi_23
- Track 27 : Appa_23
- Track 28 : Bush_24
- Track 29 : Warren_24
- Track 30 : Pickles13_23

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

The start number called the most often in the published annotations is 6, it was called in 35 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ajin_32, Albright_18, Antuna_24, Appa_23, Benry_21, Blett_24, Bush_24, ChiliPepper_17, Cicada_23, Dismas_17, Doobus_18, Dropshot_23, FireCastle_21, Goodman_22, Htur_21, IndiRoo_22, Jera_22, Johann_22, Kenzers_18, Kieran_17, Lynlen_18, MenE_24, Milani_22, PermaG_22, Phonegingi_23, Pickles13_23, Rasovi_21, Rona_17, SBlackberry_21, Sharkboy_17, Sucha_18, TinyMiny_32, TurboVicky_21, Typher_23, Warren_24, Zanella_21,

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

- Kors_33, RikSengupta_32, Sparcetus_32,

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

-

Summary by start number:

Start 4:

- Found in 5 of 39 (12.8%) of genes in pham
- Manual Annotations of this start: 2 of 37
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Kors_33 (EF), RikSengupta_32 (EF), Sparcetus_32 (EF),

Start 6:

- Found in 39 of 39 (100.0%) of genes in pham
- Manual Annotations of this start: 35 of 37
- Called 92.3% of time when present
- Phage (with cluster) where this start called: Ajin_32 (EF), Albright_18 (EB), Antuna_24 (GA), Appa_23 (GA), Benry_21 (EJ), Blett_24 (GA), Bush_24 (GA), ChiliPepper_17 (EB), Cicada_23 (EJ), Dismas_17 (EB), Doobus_18 (EB), Dropshot_23 (GA), FireCastle_21 (EJ), Goodman_22 (EJ), Htur_21 (EJ), IndiRoo_22 (EJ), Jera_22 (EJ), Johann_22 (EJ), Kenzers_18 (EB), Kieran_17 (EB), Lynlen_18 (EB), MenE_24 (GA), Milani_22 (EJ), PermaG_22 (EJ), Phonegingi_23 (GA), Pickles13_23 (GA), Rasovi_21 (EJ), Rona_17 (EB), SBlackberry_21 (EJ), Sharkboy_17 (EB), Sucha_18 (EJ), TinyMiny_32 (EF), TurboVicky_21 (EJ), Typher_23 (EJ), Warren_24 (GA), Zanella_21 (EJ),

Summary by clusters:

There are 4 clusters represented in this pham: EF, EJ, GA, EB,

Info for manual annotations of cluster EB:

- Start number 6 was manually annotated 9 times for cluster EB.

Info for manual annotations of cluster EF:

- Start number 4 was manually annotated 2 times for cluster EF.
- Start number 6 was manually annotated 2 times for cluster EF.

Info for manual annotations of cluster EJ:

- Start number 6 was manually annotated 15 times for cluster EJ.

Info for manual annotations of cluster GA:

•Start number 6 was manually annotated 9 times for cluster GA.

Gene Information:

Gene: Ajin_32 Start: 18502, Stop: 20436, Start Num: 6

Candidate Starts for Ajin_32:

(2, 18472), (3, 18475), (Start: 4 @18487 has 2 MA's), (5, 18499), (Start: 6 @18502 has 35 MA's), (9, 18562), (17, 18613), (25, 18703), (30, 18733), (36, 18790), (37, 18793), (45, 18883), (53, 18970), (62, 19051), (68, 19135), (74, 19210), (76, 19270), (85, 19351), (91, 19402), (96, 19474), (98, 19495), (99, 19498), (101, 19504), (110, 19582), (115, 19618), (119, 19636), (130, 19792), (133, 19876), (139, 19900), (173, 20116), (179, 20158), (193, 20275), (196, 20296), (202, 20347),

Gene: Albright_18 Start: 13896, Stop: 15746, Start Num: 6

Candidate Starts for Albright_18:

(Start: 6 @13896 has 35 MA's), (25, 14085), (31, 14127), (33, 14142), (35, 14154), (48, 14277), (51, 14316), (62, 14409), (79, 14667), (103, 14895), (108, 14928), (109, 14937), (124, 15060), (151, 15285), (162, 15351), (176, 15453), (178, 15468), (187, 15537), (193, 15585), (197, 15612), (198, 15621), (204, 15672),

Gene: Antuna_24 Start: 14563, Stop: 16431, Start Num: 6

Candidate Starts for Antuna_24:

(1, 14338), (2, 14533), (Start: 6 @14563 has 35 MA's), (11, 14623), (14, 14644), (16, 14656), (21, 14710), (23, 14743), (25, 14749), (47, 14965), (65, 15121), (68, 15175), (69, 15178), (71, 15208), (75, 15280), (87, 15403), (92, 15475), (95, 15508), (98, 15532), (105, 15580), (113, 15643), (136, 15877), (147, 15928), (149, 15946), (153, 15973), (155, 15991), (157, 16006), (178, 16153), (181, 16180), (189, 16243), (200, 16330), (213, 16423),

Gene: Appa_23 Start: 14425, Stop: 16293, Start Num: 6

Candidate Starts for Appa_23:

(1, 14200), (2, 14395), (Start: 6 @14425 has 35 MA's), (11, 14485), (14, 14506), (16, 14518), (21, 14572), (23, 14605), (39, 14734), (65, 14983), (68, 15037), (69, 15040), (71, 15070), (75, 15142), (87, 15265), (92, 15337), (95, 15370), (98, 15394), (105, 15442), (136, 15739), (147, 15790), (149, 15808), (153, 15835), (155, 15853), (157, 15868), (178, 16015), (181, 16042), (189, 16105), (200, 16192), (213, 16285),

Gene: Benry_21 Start: 14670, Stop: 16571, Start Num: 6

Candidate Starts for Benry_21:

(Start: 6 @14670 has 35 MA's), (10, 14721), (12, 14739), (21, 14817), (22, 14820), (23, 14850), (38, 14967), (39, 14979), (43, 14997), (49, 15099), (50, 15111), (54, 15138), (57, 15183), (66, 15273), (68, 15303), (69, 15306), (71, 15336), (86, 15528), (91, 15570), (95, 15636), (98, 15660), (100, 15666), (104, 15705), (105, 15708), (106, 15726), (109, 15744), (110, 15747), (118, 15798), (123, 15858), (128, 15906), (166, 16194), (171, 16242), (175, 16275), (182, 16329), (186, 16362), (192, 16410), (199, 16452),

Gene: Blett_24 Start: 14578, Stop: 16446, Start Num: 6

Candidate Starts for Blett_24:

(1, 14353), (2, 14548), (Start: 6 @14578 has 35 MA's), (11, 14638), (14, 14659), (16, 14671), (21, 14725), (23, 14758), (39, 14887), (47, 14980), (68, 15190), (69, 15193), (71, 15223), (75, 15295), (87, 15418), (95, 15523), (98, 15547), (105, 15595), (136, 15892), (147, 15943), (149, 15961), (153,

15988), (155, 16006), (157, 16021), (178, 16168), (181, 16195), (189, 16258), (200, 16345), (213, 16438),

Gene: Bush_24 Start: 14559, Stop: 16421, Start Num: 6

Candidate Starts for Bush_24:

(1, 14334), (2, 14529), (Start: 6 @14559 has 35 MA's), (11, 14619), (14, 14640), (16, 14652), (21, 14706), (23, 14739), (39, 14868), (65, 15117), (66, 15141), (68, 15171), (69, 15174), (71, 15204), (75, 15276), (87, 15399), (95, 15504), (98, 15528), (105, 15576), (113, 15639), (136, 15867), (157, 15996), (165, 16041), (181, 16170), (200, 16320), (211, 16386), (213, 16413),

Gene: ChiliPepper_17 Start: 13661, Stop: 15667, Start Num: 6

Candidate Starts for ChiliPepper_17:

(Start: 6 @13661 has 35 MA's), (19, 13778), (24, 13847), (27, 13865), (30, 13877), (33, 13907), (40, 13958), (41, 13961), (42, 13970), (44, 14003), (51, 14081), (56, 14123), (63, 14180), (64, 14204), (70, 14267), (73, 14321), (76, 14393), (79, 14432), (80, 14435), (95, 14594), (98, 14618), (103, 14660), (104, 14663), (108, 14693), (117, 14747), (119, 14759), (121, 14795), (122, 14804), (125, 14837), (126, 14849), (137, 14978), (152, 15065), (159, 15122), (160, 15125), (161, 15137), (168, 15185), (174, 15221), (201, 15437), (203, 15455), (205, 15461), (215, 15611), (216, 15620),

Gene: Cicada_23 Start: 16468, Stop: 18345, Start Num: 6

Candidate Starts for Cicada_23:

(1, 16243), (Start: 6 @16468 has 35 MA's), (18, 16597), (21, 16636), (22, 16639), (29, 16708), (34, 16753), (38, 16789), (49, 16918), (68, 17098), (69, 17101), (72, 17134), (77, 17239), (78, 17260), (81, 17278), (82, 17281), (98, 17455), (107, 17527), (110, 17542), (113, 17566), (114, 17572), (118, 17593), (122, 17641), (138, 17809), (139, 17812), (143, 17833), (146, 17845), (156, 17920), (183, 18115), (185, 18136), (187, 18145), (190, 18178), (200, 18244), (206, 18274), (212, 18316),

Gene: Dismas_17 Start: 13661, Stop: 15667, Start Num: 6

Candidate Starts for Dismas_17:

(Start: 6 @13661 has 35 MA's), (19, 13778), (24, 13847), (27, 13865), (30, 13877), (33, 13907), (40, 13958), (41, 13961), (42, 13970), (44, 14003), (51, 14081), (56, 14123), (63, 14180), (64, 14204), (70, 14267), (73, 14321), (76, 14393), (79, 14432), (80, 14435), (95, 14594), (98, 14618), (103, 14660), (104, 14663), (108, 14693), (117, 14747), (119, 14759), (121, 14795), (122, 14804), (125, 14837), (126, 14849), (137, 14978), (152, 15065), (159, 15122), (160, 15125), (161, 15137), (168, 15185), (174, 15221), (201, 15437), (203, 15455), (205, 15461), (215, 15611), (216, 15620),

Gene: Doobus_18 Start: 14247, Stop: 16097, Start Num: 6

Candidate Starts for Doobus_18:

(Start: 6 @14247 has 35 MA's), (25, 14436), (31, 14478), (33, 14493), (35, 14505), (48, 14628), (51, 14667), (62, 14760), (79, 15018), (103, 15246), (108, 15279), (109, 15288), (124, 15411), (151, 15636), (155, 15657), (162, 15702), (176, 15804), (178, 15819), (187, 15888), (193, 15936), (197, 15963), (198, 15972), (204, 16023),

Gene: Dropshot_23 Start: 14425, Stop: 16293, Start Num: 6

Candidate Starts for Dropshot_23:

(1, 14200), (2, 14395), (Start: 6 @14425 has 35 MA's), (11, 14485), (14, 14506), (16, 14518), (21, 14572), (23, 14605), (39, 14734), (47, 14827), (68, 15037), (69, 15040), (71, 15070), (75, 15142), (87, 15265), (95, 15370), (98, 15394), (105, 15442), (136, 15739), (147, 15790), (149, 15808), (153, 15835), (155, 15853), (157, 15868), (178, 16015), (181, 16042), (189, 16105), (200, 16192), (213, 16285),

Gene: FireCastle_21 Start: 16238, Stop: 18142, Start Num: 6

Candidate Starts for FireCastle_21:

(Start: 6 @16238 has 35 MA's), (10, 16289), (13, 16313), (20, 16361), (21, 16385), (22, 16388), (28, 16448), (32, 16484), (38, 16535), (46, 16628), (52, 16694), (66, 16841), (68, 16871), (69, 16874), (73, 16934), (80, 17048), (89, 17111), (93, 17183), (95, 17204), (98, 17228), (104, 17273), (106, 17294), (111, 17321), (118, 17366), (123, 17426), (132, 17540), (164, 17756), (166, 17765), (171, 17813), (182, 17900), (186, 17933), (199, 18023),

Gene: Goodman_22 Start: 16381, Stop: 18258, Start Num: 6

Candidate Starts for Goodman_22:

(Start: 6 @16381 has 35 MA's), (18, 16510), (21, 16549), (22, 16552), (29, 16621), (34, 16666), (38, 16702), (49, 16831), (68, 17011), (69, 17014), (72, 17047), (77, 17152), (78, 17173), (81, 17191), (82, 17194), (98, 17368), (104, 17413), (107, 17440), (110, 17455), (113, 17479), (114, 17485), (118, 17506), (122, 17554), (138, 17722), (139, 17725), (143, 17746), (146, 17758), (156, 17833), (183, 18028), (185, 18049), (187, 18058), (190, 18091), (200, 18157), (206, 18187), (212, 18229),

Gene: Htur_21 Start: 16411, Stop: 18312, Start Num: 6

Candidate Starts for Htur_21:

(Start: 6 @16411 has 35 MA's), (7, 16432), (8, 16438), (18, 16540), (21, 16579), (22, 16582), (29, 16651), (38, 16732), (43, 16762), (49, 16861), (54, 16903), (67, 17044), (68, 17065), (69, 17068), (72, 17101), (77, 17206), (81, 17245), (82, 17248), (90, 17308), (97, 17416), (98, 17422), (107, 17494), (110, 17509), (113, 17533), (114, 17539), (118, 17560), (122, 17608), (127, 17659), (131, 17680), (138, 17776), (143, 17800), (146, 17812), (154, 17875), (163, 17932), (170, 17986), (178, 18043), (181, 18070), (182, 18076), (183, 18082), (184, 18094), (190, 18145), (212, 18283),

Gene: IndiRoo_22 Start: 14680, Stop: 16581, Start Num: 6

Candidate Starts for IndiRoo_22:

(Start: 6 @14680 has 35 MA's), (10, 14731), (21, 14827), (22, 14830), (23, 14860), (28, 14890), (38, 14977), (39, 14989), (43, 15007), (49, 15109), (50, 15121), (54, 15148), (66, 15283), (68, 15313), (69, 15316), (71, 15346), (75, 15418), (87, 15541), (95, 15646), (98, 15670), (104, 15715), (105, 15718), (106, 15736), (108, 15745), (109, 15754), (110, 15757), (112, 15766), (118, 15808), (123, 15868), (128, 15916), (132, 15982), (140, 16048), (145, 16072), (164, 16195), (166, 16204), (171, 16252), (175, 16285), (182, 16339), (186, 16372), (199, 16462), (208, 16525),

Gene: Jera_22 Start: 15478, Stop: 17370, Start Num: 6

Candidate Starts for Jera_22:

(Start: 6 @15478 has 35 MA's), (18, 15607), (21, 15646), (29, 15718), (38, 15799), (39, 15811), (49, 15928), (58, 15994), (67, 16087), (68, 16108), (69, 16111), (72, 16144), (77, 16249), (82, 16291), (83, 16309), (97, 16459), (98, 16465), (107, 16537), (110, 16552), (113, 16576), (114, 16582), (118, 16603), (122, 16651), (136, 16816), (138, 16822), (144, 16852), (148, 16876), (149, 16885), (150, 16891), (153, 16912), (157, 16945), (177, 17080), (180, 17110), (181, 17119), (182, 17125), (210, 17314), (211, 17335),

Gene: Johann_22 Start: 16381, Stop: 18258, Start Num: 6

Candidate Starts for Johann_22:

(Start: 6 @16381 has 35 MA's), (18, 16510), (21, 16549), (22, 16552), (29, 16621), (34, 16666), (38, 16702), (49, 16831), (68, 17011), (69, 17014), (72, 17047), (77, 17152), (78, 17173), (81, 17191), (82, 17194), (98, 17368), (104, 17413), (107, 17440), (110, 17455), (113, 17479), (114, 17485), (118, 17506), (122, 17554), (138, 17722), (139, 17725), (143, 17746), (146, 17758), (156, 17833), (183, 18028), (185, 18049), (187, 18058), (190, 18091), (200, 18157), (206, 18187), (212, 18229),

Gene: Kenzers_18 Start: 13986, Stop: 15836, Start Num: 6

Candidate Starts for Kenzers_18:

(Start: 6 @13986 has 35 MA's), (25, 14175), (31, 14217), (33, 14232), (35, 14244), (51, 14406), (79, 14757), (103, 14985), (108, 15018), (119, 15084), (151, 15375), (155, 15396), (162, 15441), (173,

15519), (178, 15558), (187, 15627), (193, 15675), (197, 15702), (198, 15711), (204, 15762),

Gene: Kieran_17 Start: 13664, Stop: 15670, Start Num: 6

Candidate Starts for Kieran_17:

(Start: 6 @13664 has 35 MA's), (19, 13781), (24, 13850), (27, 13868), (30, 13880), (33, 13910), (40, 13961), (41, 13964), (42, 13973), (44, 14006), (51, 14084), (56, 14126), (63, 14183), (64, 14207), (70, 14270), (73, 14324), (76, 14396), (79, 14435), (80, 14438), (95, 14597), (98, 14621), (103, 14663), (104, 14666), (108, 14696), (117, 14750), (119, 14762), (121, 14798), (122, 14807), (125, 14840), (126, 14852), (137, 14981), (152, 15068), (159, 15125), (160, 15128), (161, 15140), (168, 15188), (174, 15224), (201, 15440), (203, 15458), (205, 15464), (215, 15614), (216, 15623),

Gene: Kors_33 Start: 18533, Stop: 20482, Start Num: 4

Candidate Starts for Kors_33:

(2, 18518), (3, 18521), (Start: 4 @18533 has 2 MA's), (5, 18545), (Start: 6 @18548 has 35 MA's), (9, 18608), (17, 18659), (25, 18749), (30, 18779), (36, 18836), (37, 18839), (45, 18929), (53, 19016), (62, 19097), (68, 19181), (74, 19256), (76, 19316), (85, 19397), (91, 19448), (98, 19541), (99, 19544), (101, 19550), (110, 19628), (115, 19664), (119, 19682), (130, 19838), (133, 19922), (139, 19946), (173, 20162), (179, 20204), (193, 20321), (196, 20342),

Gene: Lynlen_18 Start: 13986, Stop: 15836, Start Num: 6

Candidate Starts for Lynlen_18:

(Start: 6 @13986 has 35 MA's), (25, 14175), (31, 14217), (33, 14232), (35, 14244), (51, 14406), (79, 14757), (103, 14985), (108, 15018), (119, 15084), (151, 15375), (155, 15396), (162, 15441), (173, 15519), (178, 15558), (187, 15627), (193, 15675), (197, 15702), (198, 15711), (204, 15762),

Gene: MenE_24 Start: 14693, Stop: 16561, Start Num: 6

Candidate Starts for MenE_24:

(1, 14468), (2, 14663), (Start: 6 @14693 has 35 MA's), (11, 14753), (14, 14774), (16, 14786), (21, 14840), (23, 14873), (25, 14879), (47, 15095), (65, 15251), (68, 15305), (69, 15308), (71, 15338), (75, 15410), (87, 15533), (92, 15605), (95, 15638), (98, 15662), (105, 15710), (113, 15773), (136, 16007), (147, 16058), (149, 16076), (153, 16103), (155, 16121), (157, 16136), (178, 16283), (181, 16310), (189, 16373), (200, 16460), (213, 16553),

Gene: Milani_22 Start: 15329, Stop: 17206, Start Num: 6

Candidate Starts for Milani_22:

(Start: 6 @15329 has 35 MA's), (10, 15380), (21, 15476), (22, 15479), (28, 15539), (43, 15656), (49, 15758), (50, 15770), (58, 15845), (66, 15932), (68, 15962), (69, 15965), (71, 15995), (73, 16025), (74, 16037), (75, 16067), (88, 16199), (95, 16295), (98, 16319), (104, 16364), (105, 16367), (108, 16394), (110, 16406), (112, 16415), (118, 16457), (123, 16517), (141, 16685), (158, 16802), (168, 16859), (171, 16877), (172, 16889), (173, 16892), (176, 16916), (182, 16964), (186, 16997), (194, 17051),

Gene: PermaG_22 Start: 16442, Stop: 18325, Start Num: 6

Candidate Starts for PermaG_22:

(2, 16412), (Start: 6 @16442 has 35 MA's), (18, 16571), (21, 16610), (22, 16613), (29, 16682), (38, 16763), (49, 16892), (61, 16970), (68, 17072), (69, 17075), (77, 17213), (81, 17252), (82, 17255), (94, 17399), (98, 17429), (110, 17516), (113, 17540), (114, 17546), (118, 17567), (122, 17615), (138, 17783), (139, 17786), (143, 17807), (146, 17819), (167, 17975), (178, 18050), (180, 18068), (188, 18137), (200, 18224), (201, 18227), (207, 18260),

Gene: Phonegingi_23 Start: 14486, Stop: 16339, Start Num: 6

Candidate Starts for Phonegingi_23:

(1, 14261), (2, 14456), (Start: 6 @14486 has 35 MA's), (11, 14546), (14, 14567), (16, 14579), (21, 14633), (23, 14666), (39, 14795), (59, 14984), (65, 15044), (68, 15098), (69, 15101), (71, 15131), (75,

15203), (87, 15326), (91, 15365), (92, 15398), (95, 15431), (98, 15455), (105, 15503), (108, 15530), (112, 15551), (118, 15593), (120, 15620), (147, 15851), (149, 15869), (169, 16016), (181, 16103), (183, 16115), (189, 16160), (190, 16172), (195, 16193), (206, 16268), (212, 16310), (213, 16331),

Gene: Pickles13_23 Start: 14850, Stop: 16718, Start Num: 6

Candidate Starts for Pickles13_23:

(1, 14625), (2, 14820), (Start: 6 @14850 has 35 MA's), (11, 14910), (14, 14931), (16, 14943), (21, 14997), (23, 15030), (24, 15033), (66, 15432), (68, 15462), (69, 15465), (71, 15495), (75, 15567), (87, 15690), (92, 15762), (95, 15795), (98, 15819), (102, 15855), (105, 15867), (108, 15894), (113, 15930), (124, 16026), (136, 16164), (149, 16233), (153, 16260), (178, 16440), (181, 16467), (189, 16530), (200, 16617), (213, 16710),

Gene: Rasovi_21 Start: 16411, Stop: 18312, Start Num: 6

Candidate Starts for Rasovi_21:

(Start: 6 @16411 has 35 MA's), (7, 16432), (8, 16438), (18, 16540), (22, 16582), (29, 16651), (38, 16732), (43, 16762), (49, 16861), (54, 16903), (67, 17044), (68, 17065), (69, 17068), (72, 17101), (77, 17206), (81, 17245), (82, 17248), (90, 17308), (97, 17416), (98, 17422), (107, 17494), (110, 17509), (113, 17533), (114, 17539), (118, 17560), (122, 17608), (127, 17659), (131, 17680), (138, 17776), (143, 17800), (146, 17812), (154, 17875), (163, 17932), (170, 17986), (178, 18043), (181, 18070), (182, 18076), (183, 18082), (184, 18094), (190, 18145), (212, 18283),

Gene: RikSengupta_32 Start: 18570, Stop: 20519, Start Num: 4

Candidate Starts for RikSengupta_32:

(2, 18555), (3, 18558), (Start: 4 @18570 has 2 MA's), (5, 18582), (Start: 6 @18585 has 35 MA's), (9, 18645), (17, 18696), (25, 18786), (30, 18816), (36, 18873), (37, 18876), (40, 18906), (45, 18966), (53, 19053), (62, 19134), (68, 19218), (74, 19293), (76, 19353), (85, 19434), (91, 19485), (98, 19578), (99, 19581), (101, 19587), (110, 19665), (115, 19701), (119, 19719), (130, 19875), (133, 19959), (139, 19983), (173, 20199), (179, 20241), (193, 20358), (196, 20379),

Gene: Rona_17 Start: 13661, Stop: 15667, Start Num: 6

Candidate Starts for Rona_17:

(Start: 6 @13661 has 35 MA's), (19, 13778), (24, 13847), (27, 13865), (30, 13877), (33, 13907), (40, 13958), (41, 13961), (42, 13970), (44, 14003), (51, 14081), (56, 14123), (63, 14180), (64, 14204), (70, 14267), (73, 14321), (76, 14393), (79, 14432), (80, 14435), (95, 14594), (98, 14618), (103, 14660), (104, 14663), (108, 14693), (117, 14747), (119, 14759), (121, 14795), (122, 14804), (125, 14837), (126, 14849), (137, 14978), (152, 15065), (159, 15122), (160, 15125), (161, 15137), (168, 15185), (174, 15221), (201, 15437), (203, 15455), (205, 15461), (215, 15611), (216, 15620),

Gene: SBlackberry_21 Start: 16237, Stop: 18123, Start Num: 6

Candidate Starts for SBlackberry_21:

(Start: 6 @16237 has 35 MA's), (18, 16366), (21, 16405), (29, 16477), (38, 16558), (39, 16570), (49, 16687), (55, 16729), (67, 16846), (68, 16867), (69, 16870), (72, 16903), (77, 17008), (81, 17047), (82, 17050), (84, 17080), (97, 17218), (98, 17224), (107, 17296), (110, 17311), (113, 17335), (114, 17341), (118, 17362), (122, 17410), (129, 17467), (134, 17566), (136, 17575), (138, 17581), (148, 17635), (153, 17671), (183, 17893), (185, 17914), (187, 17923), (190, 17956), (200, 18022), (206, 18052), (212, 18094),

Gene: Sharkboy_17 Start: 13660, Stop: 15654, Start Num: 6

Candidate Starts for Sharkboy_17:

(Start: 6 @13660 has 35 MA's), (15, 13753), (27, 13864), (33, 13906), (42, 13969), (51, 14080), (60, 14149), (70, 14266), (73, 14320), (98, 14617), (103, 14659), (108, 14692), (116, 14740), (121, 14794), (135, 14971), (137, 14977), (142, 15001), (159, 15106), (172, 15199), (184, 15292), (191, 15355), (203, 15457), (209, 15478), (214, 15544),

Gene: Sparcetus_32 Start: 18449, Stop: 20398, Start Num: 4

Candidate Starts for Sparcetus_32:

(2, 18434), (3, 18437), (Start: 4 @18449 has 2 MA's), (5, 18461), (Start: 6 @18464 has 35 MA's), (9, 18524), (17, 18575), (25, 18665), (30, 18695), (36, 18752), (37, 18755), (45, 18845), (53, 18932), (62, 19013), (68, 19097), (74, 19172), (76, 19232), (85, 19313), (91, 19364), (98, 19457), (99, 19460), (101, 19466), (110, 19544), (115, 19580), (119, 19598), (130, 19754), (133, 19838), (139, 19862), (173, 20078), (179, 20120), (193, 20237), (196, 20258),

Gene: Sucha_18 Start: 13667, Stop: 15568, Start Num: 6

Candidate Starts for Sucha_18:

(Start: 6 @13667 has 35 MA's), (10, 13718), (21, 13814), (22, 13817), (23, 13847), (26, 13856), (38, 13964), (39, 13976), (43, 13994), (49, 14096), (50, 14108), (54, 14135), (59, 14186), (66, 14270), (68, 14300), (69, 14303), (71, 14333), (91, 14567), (95, 14633), (98, 14657), (104, 14702), (105, 14705), (109, 14741), (110, 14744), (118, 14795), (123, 14855), (128, 14903), (164, 15182), (166, 15191), (171, 15239), (175, 15272), (178, 15293), (182, 15326), (199, 15449),

Gene: TinyMiny_32 Start: 18483, Stop: 20417, Start Num: 6

Candidate Starts for TinyMiny_32:

(2, 18453), (3, 18456), (Start: 4 @18468 has 2 MA's), (5, 18480), (Start: 6 @18483 has 35 MA's), (9, 18543), (17, 18594), (25, 18684), (30, 18714), (36, 18771), (37, 18774), (45, 18864), (53, 18951), (62, 19032), (68, 19116), (74, 19191), (76, 19251), (85, 19332), (91, 19383), (98, 19476), (99, 19479), (101, 19485), (110, 19563), (115, 19599), (119, 19617), (130, 19773), (133, 19857), (139, 19881), (173, 20097), (179, 20139), (193, 20256), (196, 20277),

Gene: TurboVicky_21 Start: 16231, Stop: 18123, Start Num: 6

Candidate Starts for TurboVicky_21:

(Start: 6 @16231 has 35 MA's), (18, 16360), (21, 16399), (22, 16402), (29, 16471), (38, 16552), (39, 16564), (49, 16681), (67, 16840), (68, 16861), (69, 16864), (72, 16897), (77, 17002), (81, 17041), (82, 17044), (83, 17062), (84, 17074), (97, 17212), (98, 17218), (107, 17290), (110, 17305), (113, 17329), (114, 17335), (118, 17356), (122, 17404), (136, 17569), (138, 17575), (144, 17605), (149, 17638), (150, 17644), (157, 17698), (164, 17737), (177, 17833), (182, 17878), (184, 17896), (200, 18022), (210, 18067), (211, 18088),

Gene: Typher_23 Start: 16361, Stop: 18253, Start Num: 6

Candidate Starts for Typher_23:

(Start: 6 @16361 has 35 MA's), (18, 16490), (21, 16529), (22, 16532), (29, 16601), (38, 16682), (39, 16694), (49, 16811), (67, 16970), (68, 16991), (69, 16994), (72, 17027), (77, 17132), (81, 17171), (82, 17174), (83, 17192), (84, 17204), (97, 17342), (98, 17348), (107, 17420), (110, 17435), (113, 17459), (114, 17465), (118, 17486), (122, 17534), (136, 17699), (138, 17705), (144, 17735), (149, 17768), (150, 17774), (157, 17828), (177, 17963), (181, 18002), (184, 18026), (210, 18197), (211, 18218),

Gene: Warren_24 Start: 14623, Stop: 16491, Start Num: 6

Candidate Starts for Warren_24:

(1, 14398), (2, 14593), (Start: 6 @14623 has 35 MA's), (11, 14683), (14, 14704), (16, 14716), (21, 14770), (23, 14803), (47, 15025), (65, 15181), (68, 15235), (69, 15238), (71, 15268), (75, 15340), (87, 15463), (92, 15535), (98, 15592), (105, 15640), (113, 15703), (124, 15799), (136, 15937), (147, 15988), (149, 16006), (153, 16033), (181, 16240), (200, 16390), (210, 16435), (213, 16483),

Gene: Zanella_21 Start: 16234, Stop: 18126, Start Num: 6

Candidate Starts for Zanella_21:

(Start: 6 @16234 has 35 MA's), (18, 16363), (21, 16402), (22, 16405), (29, 16474), (38, 16555), (39, 16567), (49, 16684), (67, 16843), (68, 16864), (69, 16867), (72, 16900), (77, 17005), (81, 17044), (82,

17047), (83, 17065), (84, 17077), (97, 17215), (98, 17221), (107, 17293), (110, 17308), (113, 17332),
(114, 17338), (118, 17359), (122, 17407), (136, 17572), (138, 17578), (144, 17608), (149, 17641),
(150, 17647), (157, 17701), (164, 17740), (177, 17836), (182, 17881), (184, 17899), (200, 18025),
(210, 18070), (211, 18091),