



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 303390 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303390 has 60 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Archis\_57, BlingBling\_51, Lysidious\_55, Melba\_53
- Track 2 : Barco\_52, MintFen\_54, Jalammah\_57, Malachai\_52, Hitter\_54, Begonia\_52, Wisp\_53, Delian\_57, Fenry\_52, Zilla\_52, CaptainKirk2\_54, Samba\_53, ZiggyZoo\_54, Zarbodnamra\_53
- Track 3 : Soilmate\_59, Blino\_57, CarolAnn\_56
- Track 4 : Murp\_55, KappaFarmDelta\_55, CheeseSpider\_60, Wocket\_54
- Track 5 : Frokostdame\_55
- Track 6 : Blueberry\_54, MissRona\_55, Gambino\_57, Azula\_55
- Track 7 : Pipp\_56, Walrus\_52, Petra\_50
- Track 8 : PrincePatrick\_53
- Track 9 : Toast\_54, PCoral7\_54, Fairfaxidum\_55
- Track 10 : William\_56
- Track 11 : Guacamole\_51, JasperJr\_51
- Track 12 : UmaThurman\_51
- Track 13 : Mellie\_52
- Track 14 : Obliviate\_50
- Track 15 : Utz\_47
- Track 16 : PhrostedPhlake\_55
- Track 17 : JuJu\_60
- Track 18 : LonelyBoi\_51
- Track 19 : Dolores\_52, WinkNick\_53
- Track 20 : Faith5x5\_36
- Track 21 : Dmitri\_47
- Track 22 : Hedwig\_50
- Track 23 : Doggs\_44, Coriander\_47
- Track 24 : Kiko\_47
- Track 25 : PatriciaStar\_47
- Track 26 : DirtyBoi\_49
- Track 27 : RayTheFireFly\_54
- Track 28 : Chipko\_52
- Track 29 : Moonflower\_47

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

The start number called the most often in the published annotations is 32, it was called in 20 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archis\_57, BlingBling\_51, Blino\_57, CarolAnn\_56, CheeseSpider\_60, Frokostdame\_55, Guacamole\_51, JasperJr\_51, JuJu\_60, KappaFarmDelta\_55, Lysidious\_55, Melba\_53, Murp\_55, Obliviate\_50, Petra\_50, PhrostedPhlake\_55, Pipp\_56, Soilmate\_59, UmaThurman\_51, Utz\_47, Walrus\_52, Wocket\_54,

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

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

- Azula\_55, Barco\_52, Begonia\_52, Blueberry\_54, CaptainKirk2\_54, Chipko\_52, Coriander\_47, Delian\_57, DirtyBoi\_49, Dmitri\_47, Doggs\_44, Dolores\_52, Fairfaxidum\_55, Faith5x5\_36, Ferry\_52, Gambino\_57, Hedwig\_50, Hitter\_54, Jalammah\_57, Kiko\_47, LonelyBoi\_51, Malachai\_52, Mellie\_52, MintFen\_54, MissRona\_55, Moonflower\_47, PCoral7\_54, PatriciaStar\_47, PrincePatrick\_53, RayTheFireFly\_54, Samba\_53, Toast\_54, William\_56, WinkNick\_53, Wisp\_53, Zarbodnamra\_53, ZiggyZoo\_54, Zilla\_52,

### Summary by start number:

Start 26:

- Found in 4 of 60 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 4 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azula\_55 (CV), Blueberry\_54 (CV), Gambino\_57 (CV), MissRona\_55 (CV),

Start 29:

- Found in 2 of 60 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kiko\_47 (DB), Moonflower\_47 (DB),

Start 30:

- Found in 9 of 60 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Chipko\_52 (DB), PatriciaStar\_47 (DB), RayTheFireFly\_54 (DB),

Start 31:

- Found in 9 of 60 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 4 of 54
- Called 44.4% of time when present
- Phage (with cluster) where this start called: Coriander\_47 (DB), DirtyBoi\_49 (DB), Dmitri\_47 (DB), Doggs\_44 (DB),

Start 32:

- Found in 22 of 60 ( 36.7% ) of genes in pham
- Manual Annotations of this start: 20 of 54

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Archis\_57 (CV), BlingBling\_51 (CV), Blino\_57 (CV), CarolAnn\_56 (CV), CheeseSpider\_60 (CV), Frokostdame\_55 (CV), Guacamole\_51 (CV), JasperJr\_51 (CV), JuJu\_60 (CV), KappaFarmDelta\_55 (CV), Lysidious\_55 (CV), Melba\_53 (CV), Murp\_55 (CV), Obliviate\_50 (CV), Petra\_50 (CV), PhrostedPhlake\_55 (CV), Pipp\_56 (CV), Soilmate\_59 (CV), UmaThurman\_51 (CV), Utz\_47 (CV), Walrus\_52 (CV), Wocket\_54 (CV),

#### Start 33:

- Found in 4 of 60 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 4 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fairfaxidum\_55 (CV), PCoral7\_54 (CV), PrincePatrick\_53 (CV), Toast\_54 (CV),

#### Start 34:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: William\_56 (CV),

#### Start 37:

- Found in 10 of 60 ( 16.7% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Hedwig\_50 (DB),

#### Start 39:

- Found in 4 of 60 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 4 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dolores\_52 (CZ4), Faith5x5\_36 (CZ6), LonelyBoi\_51 (CY7), WinkNick\_53 (CZ4),

#### Start 40:

- Found in 15 of 60 ( 25.0% ) of genes in pham
- Manual Annotations of this start: 14 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barco\_52 (CV), Begonia\_52 (CV), CaptainKirk2\_54 (CV), Delian\_57 (CV), Fenry\_52 (CV), Hitter\_54 (CV), Jalammah\_57 (CV), Malachai\_52 (CV), Mellie\_52 (CV), MintFen\_54 (CV), Samba\_53 (CV), Wisp\_53 (CV), Zarbodnamra\_53 (CV), ZiggyZoo\_54 (CV), Zilla\_52 (CV),

### Summary by clusters:

There are 5 clusters represented in this pham: CY7, CZ6, DB, CV, CZ4,

#### Info for manual annotations of cluster CV:

- Start number 26 was manually annotated 4 times for cluster CV.
- Start number 32 was manually annotated 20 times for cluster CV.
- Start number 33 was manually annotated 4 times for cluster CV.
- Start number 34 was manually annotated 1 time for cluster CV.
- Start number 40 was manually annotated 14 times for cluster CV.

Info for manual annotations of cluster CY7:

- Start number 39 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster CZ4:

- Start number 39 was manually annotated 2 times for cluster CZ4.

Info for manual annotations of cluster CZ6:

- Start number 39 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DB:

- Start number 29 was manually annotated 1 time for cluster DB.
- Start number 30 was manually annotated 1 time for cluster DB.
- Start number 31 was manually annotated 4 times for cluster DB.
- Start number 37 was manually annotated 1 time for cluster DB.

### ***Gene Information:***

Gene: Archis\_57 Start: 36449, Stop: 36763, Start Num: 32

Candidate Starts for Archis\_57:

(17, 36254), (Start: 32 @36449 has 20 MA's), (41, 36554), (42, 36593), (43, 36596), (47, 36632), (49, 36662),

Gene: Azula\_55 Start: 38102, Stop: 38458, Start Num: 26

Candidate Starts for Azula\_55:

(Start: 26 @38102 has 4 MA's), (41, 38249), (42, 38288), (43, 38291),

Gene: Barco\_52 Start: 35493, Stop: 35723, Start Num: 40

Candidate Starts for Barco\_52:

(Start: 40 @35493 has 14 MA's), (47, 35592),

Gene: Begonia\_52 Start: 38032, Stop: 38262, Start Num: 40

Candidate Starts for Begonia\_52:

(Start: 40 @38032 has 14 MA's), (47, 38131),

Gene: BlingBling\_51 Start: 36462, Stop: 36776, Start Num: 32

Candidate Starts for BlingBling\_51:

(17, 36267), (Start: 32 @36462 has 20 MA's), (41, 36567), (42, 36606), (43, 36609), (47, 36645), (49, 36675),

Gene: Blino\_57 Start: 41408, Stop: 41722, Start Num: 32

Candidate Starts for Blino\_57:

(16, 41195), (24, 41318), (Start: 32 @41408 has 20 MA's), (41, 41513), (42, 41552), (43, 41555), (47, 41591), (48, 41597), (49, 41621),

Gene: Blueberry\_54 Start: 38102, Stop: 38458, Start Num: 26

Candidate Starts for Blueberry\_54:

(Start: 26 @38102 has 4 MA's), (41, 38249), (42, 38288), (43, 38291),

Gene: CaptainKirk2\_54 Start: 35741, Stop: 35971, Start Num: 40

Candidate Starts for CaptainKirk2\_54:

(Start: 40 @35741 has 14 MA's), (47, 35840),

Gene: CarolAnn\_56 Start: 41407, Stop: 41721, Start Num: 32

Candidate Starts for CarolAnn\_56:

(16, 41194), (24, 41317), (Start: 32 @41407 has 20 MA's), (41, 41512), (42, 41551), (43, 41554), (47, 41590), (48, 41596), (49, 41620),

Gene: CheeseSpider\_60 Start: 37170, Stop: 37481, Start Num: 32

Candidate Starts for CheeseSpider\_60:

(Start: 32 @37170 has 20 MA's), (41, 37272), (42, 37311), (43, 37314), (47, 37350), (49, 37380),

Gene: Chipko\_52 Start: 36603, Stop: 36950, Start Num: 30

Candidate Starts for Chipko\_52:

(21, 36453), (Start: 30 @36603 has 1 MA's), (Start: 31 @36606 has 4 MA's), (Start: 37 @36660 has 1 MA's), (38, 36714), (44, 36780), (47, 36819),

Gene: Coriander\_47 Start: 34198, Stop: 34536, Start Num: 31

Candidate Starts for Coriander\_47:

(13, 33937), (14, 33940), (21, 34045), (Start: 30 @34195 has 1 MA's), (Start: 31 @34198 has 4 MA's), (Start: 37 @34246 has 1 MA's), (44, 34366), (47, 34405),

Gene: Delian\_57 Start: 35739, Stop: 35969, Start Num: 40

Candidate Starts for Delian\_57:

(Start: 40 @35739 has 14 MA's), (47, 35838),

Gene: DirtyBoi\_49 Start: 34236, Stop: 34574, Start Num: 31

Candidate Starts for DirtyBoi\_49:

(3, 33720), (6, 33792), (7, 33795), (12, 33957), (13, 33975), (14, 33978), (21, 34083), (Start: 30 @34233 has 1 MA's), (Start: 31 @34236 has 4 MA's), (Start: 37 @34284 has 1 MA's), (38, 34338), (47, 34443),

Gene: Dmitri\_47 Start: 35769, Stop: 36026, Start Num: 31

Candidate Starts for Dmitri\_47:

(3, 35253), (6, 35325), (7, 35328), (12, 35490), (13, 35508), (14, 35511), (21, 35616), (Start: 30 @35766 has 1 MA's), (Start: 31 @35769 has 4 MA's), (Start: 37 @35817 has 1 MA's),

Gene: Doggs\_44 Start: 34926, Stop: 35264, Start Num: 31

Candidate Starts for Doggs\_44:

(13, 34665), (14, 34668), (21, 34773), (Start: 30 @34923 has 1 MA's), (Start: 31 @34926 has 4 MA's), (Start: 37 @34974 has 1 MA's), (44, 35094), (47, 35133),

Gene: Dolores\_52 Start: 35935, Stop: 36165, Start Num: 39

Candidate Starts for Dolores\_52:

(Start: 39 @35935 has 4 MA's), (48, 36040),

Gene: Fairfaxidum\_55 Start: 38250, Stop: 38555, Start Num: 33

Candidate Starts for Fairfaxidum\_55:

(Start: 33 @38250 has 4 MA's), (41, 38346), (42, 38385), (43, 38388), (50, 38457),

Gene: Faith5x5\_36 Start: 28409, Stop: 28639, Start Num: 39

Candidate Starts for Faith5x5\_36:

(20, 28133), (22, 28163), (27, 28283), (28, 28289), (Start: 39 @28409 has 4 MA's), (47, 28517),

Gene: Fenry\_52 Start: 37237, Stop: 37467, Start Num: 40

Candidate Starts for Fenry\_52:

(Start: 40 @37237 has 14 MA's), (47, 37336),

Gene: Frokostdame\_55 Start: 37773, Stop: 38087, Start Num: 32

Candidate Starts for Frokostdame\_55:

(9, 37473), (15, 37548), (Start: 32 @37773 has 20 MA's), (41, 37878), (42, 37917), (43, 37920), (47, 37956),

Gene: Gambino\_57 Start: 38102, Stop: 38458, Start Num: 26

Candidate Starts for Gambino\_57:

(Start: 26 @38102 has 4 MA's), (41, 38249), (42, 38288), (43, 38291),

Gene: Guacamole\_51 Start: 35884, Stop: 36198, Start Num: 32

Candidate Starts for Guacamole\_51:

(17, 35689), (Start: 32 @35884 has 20 MA's), (41, 35989), (42, 36028), (43, 36031), (47, 36067),

Gene: Hedwig\_50 Start: 34705, Stop: 34995, Start Num: 37

Candidate Starts for Hedwig\_50:

(Start: 30 @34654 has 1 MA's), (Start: 31 @34657 has 4 MA's), (Start: 37 @34705 has 1 MA's), (38, 34759), (47, 34864), (50, 34897), (51, 34948),

Gene: Hitter\_54 Start: 35535, Stop: 35765, Start Num: 40

Candidate Starts for Hitter\_54:

(Start: 40 @35535 has 14 MA's), (47, 35634),

Gene: Jalammah\_57 Start: 38538, Stop: 38768, Start Num: 40

Candidate Starts for Jalammah\_57:

(Start: 40 @38538 has 14 MA's), (47, 38637),

Gene: JasperJr\_51 Start: 35884, Stop: 36198, Start Num: 32

Candidate Starts for JasperJr\_51:

(17, 35689), (Start: 32 @35884 has 20 MA's), (41, 35989), (42, 36028), (43, 36031), (47, 36067),

Gene: JuJu\_60 Start: 39886, Stop: 40185, Start Num: 32

Candidate Starts for JuJu\_60:

(8, 39463), (10, 39601), (16, 39673), (22, 39748), (Start: 32 @39886 has 20 MA's), (46, 40033), (47, 40054),

Gene: KappaFarmDelta\_55 Start: 36090, Stop: 36404, Start Num: 32

Candidate Starts for KappaFarmDelta\_55:

(Start: 32 @36090 has 20 MA's), (41, 36195), (42, 36234), (43, 36237), (47, 36273), (49, 36303),

Gene: Kiko\_47 Start: 34593, Stop: 34889, Start Num: 29

Candidate Starts for Kiko\_47:

(1, 33921), (5, 34128), (11, 34305), (12, 34314), (13, 34332), (14, 34335), (21, 34440), (Start: 29 @34593 has 1 MA's), (Start: 37 @34650 has 1 MA's), (47, 34758), (51, 34842),

Gene: LonelyBoi\_51 Start: 39893, Stop: 40123, Start Num: 39

Candidate Starts for LonelyBoi\_51:

(18, 39602), (35, 39812), (36, 39833), (Start: 39 @39893 has 4 MA's), (45, 39965), (47, 39992),

Gene: Lysidious\_55 Start: 37815, Stop: 38129, Start Num: 32

Candidate Starts for Lysidious\_55:

(17, 37620), (Start: 32 @37815 has 20 MA's), (41, 37920), (42, 37959), (43, 37962), (47, 37998), (49, 38028),

Gene: Malachai\_52 Start: 38032, Stop: 38262, Start Num: 40

Candidate Starts for Malachai\_52:

(Start: 40 @38032 has 14 MA's), (47, 38131),

Gene: Melba\_53 Start: 36287, Stop: 36601, Start Num: 32

Candidate Starts for Melba\_53:

(17, 36092), (Start: 32 @36287 has 20 MA's), (41, 36392), (42, 36431), (43, 36434), (47, 36470), (49, 36500),

Gene: Mellie\_52 Start: 35921, Stop: 36151, Start Num: 40

Candidate Starts for Mellie\_52:

(19, 35639), (23, 35711), (25, 35732), (Start: 40 @35921 has 14 MA's), (47, 36020),

Gene: MintFen\_54 Start: 36355, Stop: 36585, Start Num: 40

Candidate Starts for MintFen\_54:

(Start: 40 @36355 has 14 MA's), (47, 36454),

Gene: MissRona\_55 Start: 38103, Stop: 38459, Start Num: 26

Candidate Starts for MissRona\_55:

(Start: 26 @38103 has 4 MA's), (41, 38250), (42, 38289), (43, 38292),

Gene: Moonflower\_47 Start: 35624, Stop: 35968, Start Num: 29

Candidate Starts for Moonflower\_47:

(Start: 29 @35624 has 1 MA's), (Start: 30 @35627 has 1 MA's), (Start: 31 @35630 has 4 MA's), (Start: 37 @35678 has 1 MA's), (38, 35732), (47, 35837), (51, 35921),

Gene: Murp\_55 Start: 39677, Stop: 39991, Start Num: 32

Candidate Starts for Murp\_55:

(Start: 32 @39677 has 20 MA's), (41, 39782), (42, 39821), (43, 39824), (47, 39860), (49, 39890),

Gene: Obliviate\_50 Start: 34448, Stop: 34762, Start Num: 32

Candidate Starts for Obliviate\_50:

(Start: 32 @34448 has 20 MA's), (41, 34553), (42, 34592), (43, 34595), (47, 34631), (49, 34661),

Gene: PCoral7\_54 Start: 37667, Stop: 37972, Start Num: 33

Candidate Starts for PCoral7\_54:

(Start: 33 @37667 has 4 MA's), (41, 37763), (42, 37802), (43, 37805), (50, 37874),

Gene: PatriciaStar\_47 Start: 35406, Stop: 35666, Start Num: 30

Candidate Starts for PatriciaStar\_47:

(11, 35121), (12, 35130), (13, 35148), (14, 35151), (21, 35256), (Start: 30 @35406 has 1 MA's), (Start: 31 @35409 has 4 MA's), (Start: 37 @35457 has 1 MA's),

Gene: Petra\_50 Start: 34588, Stop: 34902, Start Num: 32

Candidate Starts for Petra\_50:

(Start: 32 @34588 has 20 MA's), (41, 34693), (42, 34732), (43, 34735), (47, 34771),

Gene: PhrostedPhlake\_55 Start: 35882, Stop: 36196, Start Num: 32

Candidate Starts for PhrostedPhlake\_55:

(Start: 32 @35882 has 20 MA's), (41, 35987), (42, 36026), (43, 36029), (47, 36065),

Gene: Pipp\_56 Start: 36955, Stop: 37269, Start Num: 32

Candidate Starts for Pipp\_56:

(Start: 32 @36955 has 20 MA's), (41, 37060), (42, 37099), (43, 37102), (47, 37138),

Gene: PrincePatrick\_53 Start: 36016, Stop: 36321, Start Num: 33

Candidate Starts for PrincePatrick\_53:

(Start: 33 @36016 has 4 MA's), (41, 36112), (43, 36154), (50, 36223),

Gene: RayTheFireFly\_54 Start: 35821, Stop: 36162, Start Num: 30

Candidate Starts for RayTheFireFly\_54:

(2, 35260), (3, 35308), (4, 35326), (6, 35380), (7, 35383), (12, 35545), (13, 35563), (14, 35566), (21, 35671), (Start: 30 @35821 has 1 MA's), (Start: 31 @35824 has 4 MA's), (Start: 37 @35872 has 1 MA's), (38, 35926), (44, 35992), (47, 36031), (51, 36115),

Gene: Samba\_53 Start: 38568, Stop: 38798, Start Num: 40

Candidate Starts for Samba\_53:

(Start: 40 @38568 has 14 MA's), (47, 38667),

Gene: Soilmate\_59 Start: 41407, Stop: 41721, Start Num: 32

Candidate Starts for Soilmate\_59:

(16, 41194), (24, 41317), (Start: 32 @41407 has 20 MA's), (41, 41512), (42, 41551), (43, 41554), (47, 41590), (48, 41596), (49, 41620),

Gene: Toast\_54 Start: 37667, Stop: 37972, Start Num: 33

Candidate Starts for Toast\_54:

(Start: 33 @37667 has 4 MA's), (41, 37763), (42, 37802), (43, 37805), (50, 37874),

Gene: UmaThurman\_51 Start: 36685, Stop: 36999, Start Num: 32

Candidate Starts for UmaThurman\_51:

(16, 36472), (Start: 32 @36685 has 20 MA's), (41, 36790), (42, 36829), (43, 36832), (47, 36868), (48, 36874), (49, 36898),

Gene: Utz\_47 Start: 36827, Stop: 37141, Start Num: 32

Candidate Starts for Utz\_47:

(17, 36632), (Start: 32 @36827 has 20 MA's), (41, 36932), (42, 36971), (43, 36974), (47, 37010), (49, 37040),

Gene: Walrus\_52 Start: 35763, Stop: 36077, Start Num: 32

Candidate Starts for Walrus\_52:

(Start: 32 @35763 has 20 MA's), (41, 35868), (42, 35907), (43, 35910), (47, 35946),

Gene: William\_56 Start: 38345, Stop: 38647, Start Num: 34

Candidate Starts for William\_56:

(Start: 34 @38345 has 1 MA's), (41, 38438), (42, 38477), (43, 38480), (47, 38516),

Gene: WinkNick\_53 Start: 35858, Stop: 36088, Start Num: 39

Candidate Starts for WinkNick\_53:

(Start: 39 @35858 has 4 MA's), (48, 35963),

Gene: Wisp\_53 Start: 37049, Stop: 37279, Start Num: 40

Candidate Starts for Wisp\_53:

(Start: 40 @37049 has 14 MA's), (47, 37148),

Gene: Wocket\_54 Start: 36257, Stop: 36571, Start Num: 32

Candidate Starts for Wocket\_54:

(Start: 32 @36257 has 20 MA's), (41, 36362), (42, 36401), (43, 36404), (47, 36440), (49, 36470),

Gene: Zarbodnamra\_53 Start: 35763, Stop: 35993, Start Num: 40

Candidate Starts for Zarbodnamra\_53:

(Start: 40 @35763 has 14 MA's), (47, 35862),

Gene: ZiggyZoo\_54 Start: 38096, Stop: 38326, Start Num: 40

Candidate Starts for ZiggyZoo\_54:

(Start: 40 @38096 has 14 MA's), (47, 38195),

Gene: Zilla\_52 Start: 35510, Stop: 35740, Start Num: 40

Candidate Starts for Zilla\_52:

(Start: 40 @35510 has 14 MA's), (47, 35609),