

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 311619 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311619 has 60 members, 54 are drafts.

Phages represented in each track:

- Track 1 : Maco6_16
- Track 2 : LongHai_19, Salvus_19
- Track 3 : FF47_18
- Track 4 : Graynor_17, MrBoss_17
- Track 5 : Fluke_17
- Track 6 : Gravel_16, Westrich_16, Pelletreau_16, KendraB23_16, Shen_16
- Track 7 : Bibble12_16, GramZayde_15, Bedetta_16, PhirstandPhine_16, Damocles_16
- Track 8 : Camara_14, AdoptaAdorbs_14, Oppalora_14
- Track 9 : Rattail_14
- Track 10 : AlexMinion_15
- Track 11 : Elliott_15, Starburst_16, GoldHunter_16, PsychoKiller_15, Sopespian_15, RADical_16
- Track 12 : Bavidard_15
- Track 13 : Wallaby_19
- Track 14 : ChocoMunchkin_15, CaramelLatte_15, CanesSauce_15
- Track 15 : Carsonalex_16
- Track 16 : Balloona_14
- Track 17 : Malvina_17
- Track 18 : RSchmailzl_16
- Track 19 : ChickenTender_17
- Track 20 : CocoaPuff_14
- Track 21 : CanFranMach_14
- Track 22 : Cashington_14, Solea_15
- Track 23 : AylexOG_15
- Track 24 : SirBeanington_14
- Track 25 : WalkingDead_14
- Track 26 : Phloodle_15, Jeilious_15, ForeverHowLong_15, DNAlll_0015, AizenPogi_15, Rattrick_15, Richarlison_15, Primanti_15
- Track 27 : Pace1224_15
- Track 28 : Cloudyecho_15
- Track 29 : YangYin_15
- Track 30 : Chavito_20
- Track 31 : Y2_21, Y10_21
- Track 32 : Rando14_18

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

The start number called the most often in the published annotations is 5, it was called in 3 of the 6 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Rando14_18, Y10_21, Y2_21,

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

- AdoptaAdorbs_14, AizenPogi_15, AlexMinion_15, AylexOG_15, Balloona_14, Bavidard_15, Bedetta_16, Bibble12_16, Camara_14, Carsonalex_16, Chavito_20, CocoaPuff_14, DNAIII_0015, Damocles_16, Elliott_15, FF47_18, ForeverHowLong_15, GoldHunter_16, GramZayde_15, Graynor_17, Jeilious_15, LongHai_19, MrBoss_17, Oppalora_14, PhirstandPhine_16, Phloodle_15, Primanti_15, PsychoKiller_15, RADical_16, RSchmailzl_16, Rattail_14, Rattrick_15, Richarlison_15, Salvus_19, SirBeanington_14, Sopespian_15, Starburst_16,

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

- CanFranMach_14, CanesSauce_15, CaramelLatte_15, Cashington_14, ChickenTender_17, ChocoMunchkin_15, Cloudyecho_15, Fluke_17, Gravel_16, KendraB23_16, Maco6_16, Malvina_17, Pace1224_15, Pelletreau_16, Shen_16, Solea_15, WalkingDead_14, Wallaby_19, Westrich_16, YangYin_15,

Summary by start number:

Start 5:

- Found in 40 of 60 (66.7%) of genes in pham
- Manual Annotations of this start: 3 of 6
- Called 7.5% of time when present
- Phage (with cluster) where this start called: Rando14_18 (K5), Y10_21 (K4), Y2_21 (K4),

Start 6:

- Found in 4 of 60 (6.7%) of genes in pham
- Manual Annotations of this start: 1 of 6
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FF47_18 (AB), LongHai_19 (AB), Maco6_16 (AB), Salvus_19 (AB),

Start 7:

- Found in 13 of 60 (21.7%) of genes in pham
- Manual Annotations of this start: 1 of 6
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AizenPogi_15 (G1), Balloona_14 (CT), Bavidard_15 (CT), CanFranMach_14 (EB), Chavito_20 (K1), CocoaPuff_14 (CT), DNAIII_0015 (G1), ForeverHowLong_15 (G1), Jeilious_15 (G), Phloodle_15 (G1), Primanti_15 (G1), Rattrick_15 (G1), Richarlison_15 (G1),

Start 9:

- Found in 5 of 60 (8.3%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present

- Phage (with cluster) where this start called: AylexOG_15 (EB), Cashington_14 (EB), SirBeanington_14 (EB), Solea_15 (EB), WalkingDead_14 (EB),

Start 10:

- Found in 15 of 60 (25.0%) of genes in pham
- Manual Annotations of this start: 1 of 6
- Called 93.3% of time when present
- Phage (with cluster) where this start called: AdoptaAdorbs_14 (AS3), Bedetta_16 (AS2), Bibble12_16 (AS2), Camara_14 (AS3), Cloudeyecho_15 (G3), Damocles_16 (AS2), Fluke_17 (AK), GramZayde_15 (AS2), Graynor_17 (AK), MrBoss_17 (AK), Oppalora_14 (AS3), PhirstandPhine_16 (AS2), Rattail_14 (AS3), YangYin_15 (G5),

Start 12:

- Found in 17 of 60 (28.3%) of genes in pham
- No Manual Annotations of this start.
- Called 23.5% of time when present
- Phage (with cluster) where this start called: CanesSauce_15 (CT), CaramelLatte_15 (CT), ChickenTender_17 (CT), ChocoMunchkin_15 (CT),

Start 13:

- Found in 15 of 60 (25.0%) of genes in pham
- No Manual Annotations of this start.
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Carsonalex_16 (CT), Elliott_15 (CT), GoldHunter_16 (CT), Malvina_17 (CT), PsychoKiller_15 (CT), RADical_16 (CT), RSchmailz_16 (CT), Sopespian_15 (CT), Starburst_16 (CT), Wallaby_19 (CT),

Start 14:

- Found in 15 of 60 (25.0%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Gravel_16 (AS1), KendraB23_16 (AS1), Pelletreau_16 (AS1), Shen_16 (AS1), Westrich_16 (AS1),

Start 17:

- Found in 2 of 60 (3.3%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Pace1224_15 (G2),

Start 18:

- Found in 1 of 60 (1.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AlexMinion_15 (AS3),

Summary by clusters:

There are 15 clusters represented in this pham: AS3, AS2, G5, AB, G3, G, G1, AK, AS1, EB, K1, K5, K4, G2, CT,

Info for manual annotations of cluster AB:

- Start number 6 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster AK:

- Start number 10 was manually annotated 1 time for cluster AK.

Info for manual annotations of cluster G1:

- Start number 7 was manually annotated 1 time for cluster G1.

Info for manual annotations of cluster K4:

- Start number 5 was manually annotated 2 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 5 was manually annotated 1 time for cluster K5.

Gene Information:

Gene: AdoptaAdorbs_14 Start: 9452, Stop: 9784, Start Num: 10

Candidate Starts for AdoptaAdorbs_14:

(Start: 5 @9356 has 3 MA's), (8, 9446), (Start: 10 @9452 has 1 MA's), (14, 9488), (16, 9509), (25, 9587), (30, 9611),

Gene: AizenPogi_15 Start: 11087, Stop: 11464, Start Num: 7

Candidate Starts for AizenPogi_15:

(2, 10724), (Start: 5 @11000 has 3 MA's), (Start: 7 @11087 has 1 MA's), (11, 11096), (45, 11375), (47, 11378),

Gene: AlexMinion_15 Start: 9547, Stop: 9816, Start Num: 18

Candidate Starts for AlexMinion_15:

(Start: 5 @9388 has 3 MA's), (Start: 10 @9484 has 1 MA's), (13, 9505), (14, 9520), (16, 9541), (17, 9544), (18, 9547), (21, 9574), (26, 9622), (30, 9643), (32, 9658),

Gene: AylexOG_15 Start: 9938, Stop: 10279, Start Num: 9

Candidate Starts for AylexOG_15:

(Start: 5 @9836 has 3 MA's), (9, 9938), (35, 10112),

Gene: Balloona_14 Start: 8969, Stop: 9385, Start Num: 7

Candidate Starts for Balloona_14:

(Start: 5 @8876 has 3 MA's), (Start: 7 @8969 has 1 MA's), (12, 8990), (27, 9116), (29, 9122), (31, 9131), (34, 9152), (36, 9155), (46, 9284), (49, 9305), (52, 9332),

Gene: Bavidard_15 Start: 9749, Stop: 10165, Start Num: 7

Candidate Starts for Bavidard_15:

(Start: 5 @9656 has 3 MA's), (Start: 7 @9749 has 1 MA's), (12, 9770), (29, 9902), (31, 9911), (34, 9932), (36, 9935), (46, 10064), (49, 10085), (52, 10112),

Gene: Bedetta_16 Start: 10036, Stop: 10362, Start Num: 10

Candidate Starts for Bedetta_16:

(Start: 5 @9940 has 3 MA's), (Start: 10 @10036 has 1 MA's), (14, 10072), (16, 10093), (21, 10126), (31, 10198),

Gene: Bible12_16 Start: 10039, Stop: 10365, Start Num: 10

Candidate Starts for Bible12_16:

(Start: 5 @9943 has 3 MA's), (Start: 10 @10039 has 1 MA's), (14, 10075), (16, 10096), (21, 10129), (31, 10201),

Gene: Camara_14 Start: 9453, Stop: 9785, Start Num: 10

Candidate Starts for Camara_14:

(Start: 5 @9357 has 3 MA's), (8, 9447), (Start: 10 @9453 has 1 MA's), (14, 9489), (16, 9510), (25, 9588), (30, 9612),

Gene: CanFranMach_14 Start: 9604, Stop: 9951, Start Num: 7

Candidate Starts for CanFranMach_14:

(Start: 7 @9604 has 1 MA's), (35, 9784),

Gene: CanesSauce_15 Start: 9255, Stop: 9656, Start Num: 12

Candidate Starts for CanesSauce_15:

(12, 9255), (13, 9264), (22, 9342), (27, 9393), (36, 9432), (46, 9561), (49, 9582),

Gene: Caramellatte_15 Start: 9255, Stop: 9656, Start Num: 12

Candidate Starts for Caramellatte_15:

(12, 9255), (13, 9264), (22, 9342), (27, 9393), (36, 9432), (46, 9561), (49, 9582),

Gene: Carsonalex_16 Start: 9317, Stop: 9697, Start Num: 13

Candidate Starts for Carsonalex_16:

(Start: 5 @9194 has 3 MA's), (12, 9308), (13, 9317), (19, 9368), (27, 9434), (36, 9473), (39, 9539), (46, 9602), (49, 9623), (54, 9665),

Gene: Cashington_14 Start: 9610, Stop: 9951, Start Num: 9

Candidate Starts for Cashington_14:

(9, 9610), (35, 9784),

Gene: Chavito_20 Start: 10746, Stop: 11138, Start Num: 7

Candidate Starts for Chavito_20:

(Start: 5 @10659 has 3 MA's), (Start: 7 @10746 has 1 MA's), (21, 10836), (44, 11031), (50, 11067),

Gene: ChickenTender_17 Start: 9300, Stop: 9689, Start Num: 12

Candidate Starts for ChickenTender_17:

(12, 9300), (13, 9309), (19, 9360), (27, 9426), (36, 9465), (46, 9594), (49, 9615),

Gene: ChocoMunchkin_15 Start: 9255, Stop: 9656, Start Num: 12

Candidate Starts for ChocoMunchkin_15:

(12, 9255), (13, 9264), (22, 9342), (27, 9393), (36, 9432), (46, 9561), (49, 9582),

Gene: Cloudyecho_15 Start: 11347, Stop: 11718, Start Num: 10

Candidate Starts for Cloudyecho_15:

(Start: 10 @11347 has 1 MA's), (45, 11626), (47, 11629), (51, 11668),

Gene: CocoaPuff_14 Start: 8969, Stop: 9385, Start Num: 7

Candidate Starts for CocoaPuff_14:

(Start: 5 @8876 has 3 MA's), (Start: 7 @8969 has 1 MA's), (12, 8990), (27, 9116), (29, 9122), (31, 9131), (34, 9152), (36, 9155), (46, 9284), (49, 9305), (52, 9332),

Gene: DNAIII_0015 Start: 11096, Stop: 11473, Start Num: 7

Candidate Starts for DNAIII_0015:

(2, 10733), (Start: 5 @11009 has 3 MA's), (Start: 7 @11096 has 1 MA's), (11, 11105), (45, 11384), (47, 11387),

Gene: Damocles_16 Start: 10036, Stop: 10362, Start Num: 10

Candidate Starts for Damocles_16:

(Start: 5 @9940 has 3 MA's), (Start: 10 @10036 has 1 MA's), (14, 10072), (16, 10093), (21, 10126), (31, 10198),

Gene: Elliott_15 Start: 9259, Stop: 9639, Start Num: 13

Candidate Starts for Elliott_15:

(Start: 5 @9136 has 3 MA's), (12, 9250), (13, 9259), (19, 9310), (27, 9376), (36, 9415), (39, 9481), (46, 9544), (49, 9565), (54, 9607),

Gene: FF47_18 Start: 11043, Stop: 11405, Start Num: 6

Candidate Starts for FF47_18:

(Start: 5 @10962 has 3 MA's), (Start: 6 @11043 has 1 MA's), (8, 11052), (21, 11139), (32, 11205), (33, 11211), (37, 11262), (39, 11289), (47, 11328), (48, 11346), (53, 11382),

Gene: Fluke_17 Start: 12295, Stop: 12609, Start Num: 10

Candidate Starts for Fluke_17:

(Start: 10 @12295 has 1 MA's), (16, 12352), (20, 12373), (24, 12397), (28, 12436), (29, 12439), (30, 12445), (31, 12448), (39, 12529),

Gene: ForeverHowLong_15 Start: 11082, Stop: 11459, Start Num: 7

Candidate Starts for ForeverHowLong_15:

(2, 10719), (Start: 5 @10995 has 3 MA's), (Start: 7 @11082 has 1 MA's), (11, 11091), (45, 11370), (47, 11373),

Gene: GoldHunter_16 Start: 9260, Stop: 9640, Start Num: 13

Candidate Starts for GoldHunter_16:

(Start: 5 @9137 has 3 MA's), (12, 9251), (13, 9260), (19, 9311), (27, 9377), (36, 9416), (39, 9482), (46, 9545), (49, 9566), (54, 9608),

Gene: GramZayde_15 Start: 9875, Stop: 10201, Start Num: 10

Candidate Starts for GramZayde_15:

(Start: 5 @9779 has 3 MA's), (Start: 10 @9875 has 1 MA's), (14, 9911), (16, 9932), (21, 9965), (31, 10037),

Gene: Gravel_16 Start: 10083, Stop: 10376, Start Num: 14

Candidate Starts for Gravel_16:

(14, 10083), (16, 10104), (30, 10206), (32, 10221), (41, 10335),

Gene: Graynor_17 Start: 12313, Stop: 12627, Start Num: 10

Candidate Starts for Graynor_17:

(Start: 5 @12217 has 3 MA's), (Start: 10 @12313 has 1 MA's), (15, 12364), (16, 12370), (20, 12391), (24, 12415), (29, 12457), (30, 12463), (38, 12532), (39, 12547),

Gene: Jeilious_15 Start: 11086, Stop: 11463, Start Num: 7

Candidate Starts for Jeilious_15:

(2, 10723), (Start: 5 @10999 has 3 MA's), (Start: 7 @11086 has 1 MA's), (11, 11095), (45, 11374), (47, 11377),

Gene: KendraB23_16 Start: 10084, Stop: 10377, Start Num: 14

Candidate Starts for KendraB23_16:

(14, 10084), (16, 10105), (30, 10207), (32, 10222), (41, 10336),

Gene: LongHai_19 Start: 11378, Stop: 11740, Start Num: 6

Candidate Starts for LongHai_19:

(Start: 5 @11297 has 3 MA's), (Start: 6 @11378 has 1 MA's), (8, 11387), (21, 11474), (32, 11540), (33, 11546), (37, 11597), (39, 11624), (47, 11663), (48, 11681), (53, 11717),

Gene: Maco6_16 Start: 10335, Stop: 10697, Start Num: 6

Candidate Starts for Maco6_16:

(Start: 6 @10335 has 1 MA's), (8, 10344), (21, 10431), (32, 10497), (33, 10503), (37, 10554), (39, 10581), (47, 10620), (48, 10638), (53, 10674),

Gene: Malvina_17 Start: 10140, Stop: 10526, Start Num: 13

Candidate Starts for Malvina_17:

(12, 10131), (13, 10140), (27, 10257), (36, 10296), (46, 10425), (52, 10473),

Gene: MrBoss_17 Start: 12277, Stop: 12591, Start Num: 10

Candidate Starts for MrBoss_17:

(Start: 5 @12181 has 3 MA's), (Start: 10 @12277 has 1 MA's), (15, 12328), (16, 12334), (20, 12355), (24, 12379), (29, 12421), (30, 12427), (38, 12496), (39, 12511),

Gene: Oppalora_14 Start: 9450, Stop: 9782, Start Num: 10

Candidate Starts for Oppalora_14:

(Start: 5 @9354 has 3 MA's), (8, 9444), (Start: 10 @9450 has 1 MA's), (14, 9486), (16, 9507), (25, 9585), (30, 9609),

Gene: Pace1224_15 Start: 11290, Stop: 11628, Start Num: 17

Candidate Starts for Pace1224_15:

(1, 10573), (2, 10861), (17, 11290), (21, 11320), (45, 11512), (47, 11515), (51, 11554),

Gene: Pelletreau_16 Start: 10083, Stop: 10376, Start Num: 14

Candidate Starts for Pelletreau_16:

(14, 10083), (16, 10104), (30, 10206), (32, 10221), (41, 10335),

Gene: PhirstandPhine_16 Start: 10036, Stop: 10362, Start Num: 10

Candidate Starts for PhirstandPhine_16:

(Start: 5 @9940 has 3 MA's), (Start: 10 @10036 has 1 MA's), (14, 10072), (16, 10093), (21, 10126), (31, 10198),

Gene: Phloodle_15 Start: 11087, Stop: 11464, Start Num: 7

Candidate Starts for Phloodle_15:

(2, 10724), (Start: 5 @11000 has 3 MA's), (Start: 7 @11087 has 1 MA's), (11, 11096), (45, 11375), (47, 11378),

Gene: Primanti_15 Start: 11087, Stop: 11464, Start Num: 7

Candidate Starts for Primanti_15:

(2, 10724), (Start: 5 @11000 has 3 MA's), (Start: 7 @11087 has 1 MA's), (11, 11096), (45, 11375), (47, 11378),

Gene: PsychoKiller_15 Start: 9259, Stop: 9639, Start Num: 13

Candidate Starts for PsychoKiller_15:

(Start: 5 @9136 has 3 MA's), (12, 9250), (13, 9259), (19, 9310), (27, 9376), (36, 9415), (39, 9481), (46, 9544), (49, 9565), (54, 9607),

Gene: RADical_16 Start: 9260, Stop: 9640, Start Num: 13

Candidate Starts for RADical_16:

(Start: 5 @9137 has 3 MA's), (12, 9251), (13, 9260), (19, 9311), (27, 9377), (36, 9416), (39, 9482), (46, 9545), (49, 9566), (54, 9608),

Gene: RSchmailzl_16 Start: 9403, Stop: 9783, Start Num: 13

Candidate Starts for RSchmailzl_16:

(Start: 5 @9280 has 3 MA's), (12, 9394), (13, 9403), (19, 9454), (27, 9520), (36, 9559), (39, 9625), (46, 9688), (49, 9709), (54, 9751),

Gene: Rando14_18 Start: 10595, Stop: 11053, Start Num: 5

Candidate Starts for Rando14_18:

(Start: 5 @10595 has 3 MA's), (21, 10772), (40, 10952), (42, 10964), (50, 11006),

Gene: Rattail_14 Start: 9503, Stop: 9835, Start Num: 10

Candidate Starts for Rattail_14:

(Start: 5 @9407 has 3 MA's), (Start: 10 @9503 has 1 MA's), (14, 9539), (16, 9560), (25, 9638), (30, 9662),

Gene: Rattrick_15 Start: 11087, Stop: 11464, Start Num: 7

Candidate Starts for Rattrick_15:

(2, 10724), (Start: 5 @11000 has 3 MA's), (Start: 7 @11087 has 1 MA's), (11, 11096), (45, 11375), (47, 11378),

Gene: Richarlison_15 Start: 11087, Stop: 11464, Start Num: 7

Candidate Starts for Richarlison_15:

(2, 10724), (Start: 5 @11000 has 3 MA's), (Start: 7 @11087 has 1 MA's), (11, 11096), (45, 11375), (47, 11378),

Gene: Salvus_19 Start: 11378, Stop: 11740, Start Num: 6

Candidate Starts for Salvus_19:

(Start: 5 @11297 has 3 MA's), (Start: 6 @11378 has 1 MA's), (8, 11387), (21, 11474), (32, 11540), (33, 11546), (37, 11597), (39, 11624), (47, 11663), (48, 11681), (53, 11717),

Gene: Shen_16 Start: 10084, Stop: 10377, Start Num: 14

Candidate Starts for Shen_16:

(14, 10084), (16, 10105), (30, 10207), (32, 10222), (41, 10336),

Gene: SirBeanington_14 Start: 9567, Stop: 9908, Start Num: 9

Candidate Starts for SirBeanington_14:

(Start: 5 @9465 has 3 MA's), (9, 9567), (35, 9741),

Gene: Solea_15 Start: 9979, Stop: 10320, Start Num: 9

Candidate Starts for Solea_15:

(9, 9979), (35, 10153),

Gene: Sopespian_15 Start: 9260, Stop: 9640, Start Num: 13

Candidate Starts for Sopespian_15:

(Start: 5 @9137 has 3 MA's), (12, 9251), (13, 9260), (19, 9311), (27, 9377), (36, 9416), (39, 9482), (46, 9545), (49, 9566), (54, 9608),

Gene: Starburst_16 Start: 9259, Stop: 9639, Start Num: 13

Candidate Starts for Starburst_16:

(Start: 5 @9136 has 3 MA's), (12, 9250), (13, 9259), (19, 9310), (27, 9376), (36, 9415), (39, 9481), (46, 9544), (49, 9565), (54, 9607),

Gene: WalkingDead_14 Start: 9801, Stop: 10142, Start Num: 9

Candidate Starts for WalkingDead_14:

(9, 9801), (23, 9906), (26, 9933),

Gene: Wallaby_19 Start: 10242, Stop: 10628, Start Num: 13

Candidate Starts for Wallaby_19:

(12, 10233), (13, 10242), (27, 10359), (36, 10398), (46, 10527), (52, 10575),

Gene: Westrich_16 Start: 10072, Stop: 10365, Start Num: 14

Candidate Starts for Westrich_16:

(14, 10072), (16, 10093), (30, 10195), (32, 10210), (41, 10324),

Gene: Y10_21 Start: 12813, Stop: 13310, Start Num: 5

Candidate Starts for Y10_21:

(3, 12657), (4, 12792), (Start: 5 @12813 has 3 MA's), (21, 12990), (31, 13044), (37, 13113), (43, 13215), (44, 13218), (50, 13254),

Gene: Y2_21 Start: 12813, Stop: 13310, Start Num: 5

Candidate Starts for Y2_21:

(3, 12657), (4, 12792), (Start: 5 @12813 has 3 MA's), (21, 12990), (31, 13044), (37, 13113), (43, 13215), (44, 13218), (50, 13254),

Gene: YangYin_15 Start: 11410, Stop: 11787, Start Num: 10

Candidate Starts for YangYin_15:

(2, 11029), (Start: 10 @11410 has 1 MA's), (45, 11689), (47, 11692), (51, 11731),