



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 309021 Report

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

Pham number 309021 has 31 members, 3 are drafts.

Phages represented in each track:

- Track 1 : TyDawg\_72, Glaske16\_74, Dulcita\_73, Skinny\_75, LilhomieP\_72, FreakyGoo\_74, IPhane7\_72, Diminimus\_73, KleverKiS\_71, SlimJimmy\_72, PegLeg\_71, Auspice\_72, TpudiCK\_74, Izel\_73, Bricole\_71
- Track 2 : Bongo\_72
- Track 3 : RoseMarie\_77
- Track 4 : Reindeer\_74
- Track 5 : GardenSalsa\_81, Estes\_81, Aziz\_79, MrMagoo\_82, GenevaB15\_80
- Track 6 : Rey\_79
- Track 7 : Nanosmite\_77
- Track 8 : EniyanLRS\_82
- Track 9 : Cosmo\_86
- Track 10 : Azrael100\_85
- Track 11 : MaryV\_86, Wildcat\_86
- Track 12 : Kumao\_68

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

The start number called the most often in the published annotations is 3, it was called in 14 of the 28 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Auspice\_72, Bricole\_71, Diminimus\_73, Dulcita\_73, FreakyGoo\_74, Glaske16\_74, IPhane7\_72, Izel\_73, KleverKiS\_71, LilhomieP\_72, PegLeg\_71, Reindeer\_74, RoseMarie\_77, Skinny\_75, SlimJimmy\_72, TpudiCK\_74, TyDawg\_72,

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

- Bongo\_72,

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

- Aziz\_79, Azrael100\_85, Cosmo\_86, EniyanLRS\_82, Estes\_81, GardenSalsa\_81, GenevaB15\_80, Kumao\_68, MaryV\_86, MrMagoo\_82, Nanosmite\_77, Rey\_79, Wildcat\_86,

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

Start 1:

- Found in 18 of 31 ( 58.1% ) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 5.6% of time when present
- Phage (with cluster) where this start called: Bongo\_72 (M1),

Start 2:

- Found in 1 of 31 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao\_68 (singleton),

Start 3:

- Found in 18 of 31 ( 58.1% ) of genes in pham
- Manual Annotations of this start: 14 of 28
- Called 94.4% of time when present
- Phage (with cluster) where this start called: Auspice\_72 (M1), Bricole\_71 (M1), Diminimus\_73 (M1), Dulcita\_73 (M1), FreakyGoo\_74 (M1), Glaske16\_74 (M1), IPhane7\_72 (M1), Izel\_73 (M1), KleverKiS\_71 (M1), LilhomieP\_72 (M1), PegLeg\_71 (M1), Reindeer\_74 (M1), RoseMarie\_77 (M1), Skinny\_75 (M1), SlimJimmy\_72 (M1), TpudiCK\_74 (M1), TyDawg\_72 (M1),

Start 4:

- Found in 7 of 31 ( 22.6% ) of genes in pham
- Manual Annotations of this start: 7 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aziz\_79 (M2), Estes\_81 (M2), GardenSalsa\_81 (M2), GenevaB15\_80 (M2), MrMagoo\_82 (M2), Nanosmite\_77 (M3), Rey\_79 (M2),

Start 7:

- Found in 5 of 31 ( 16.1% ) of genes in pham
- Manual Annotations of this start: 4 of 28
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Cosmo\_86 (V), EniyanLRS\_82 (V), MaryV\_86 (V), Wildcat\_86 (V),

Start 11:

- Found in 5 of 31 ( 16.1% ) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Azrael100\_85 (V),

**Summary by clusters:**

There are 5 clusters represented in this pham: singleton, V, M1, M3, M2,

Info for manual annotations of cluster M1:

- Start number 1 was manually annotated 1 time for cluster M1.
- Start number 3 was manually annotated 14 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 4 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 4 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

- Start number 7 was manually annotated 4 times for cluster V.
- Start number 11 was manually annotated 1 time for cluster V.

### **Gene Information:**

Gene: Auspice\_72 Start: 47073, Stop: 47699, Start Num: 3

Candidate Starts for Auspice\_72:

(Start: 1 @47058 has 1 MA's), (Start: 3 @47073 has 14 MA's), (5, 47124), (8, 47148), (9, 47157), (10, 47163), (14, 47199), (17, 47244), (20, 47289), (23, 47313), (37, 47457), (41, 47505), (46, 47574), (47, 47577), (48, 47583), (52, 47616), (56, 47661),

Gene: Aziz\_79 Start: 49117, Stop: 49749, Start Num: 4

Candidate Starts for Aziz\_79:

(Start: 4 @49117 has 7 MA's), (8, 49195), (13, 49234), (19, 49309), (24, 49372), (47, 49627), (48, 49633), (55, 49702), (56, 49711),

Gene: Azrael100\_85 Start: 52851, Stop: 53369, Start Num: 11

Candidate Starts for Azrael100\_85:

(Start: 7 @52812 has 4 MA's), (Start: 11 @52851 has 1 MA's), (16, 52902), (18, 52923), (21, 52974), (25, 53022), (29, 53058), (31, 53067), (36, 53109), (38, 53142), (39, 53154), (42, 53205), (43, 53220), (44, 53235), (45, 53241), (50, 53274), (53, 53304), (54, 53322), (57, 53337), (58, 53364),

Gene: Bongo\_72 Start: 47062, Stop: 47703, Start Num: 1

Candidate Starts for Bongo\_72:

(Start: 1 @47062 has 1 MA's), (Start: 3 @47077 has 14 MA's), (5, 47128), (8, 47152), (9, 47161), (10, 47167), (14, 47203), (17, 47248), (20, 47293), (23, 47317), (37, 47461), (41, 47509), (46, 47578), (47, 47581), (48, 47587), (52, 47620), (56, 47665),

Gene: Bricole\_71 Start: 46800, Stop: 47426, Start Num: 3

Candidate Starts for Bricole\_71:

(Start: 1 @46785 has 1 MA's), (Start: 3 @46800 has 14 MA's), (5, 46851), (8, 46875), (9, 46884), (10, 46890), (14, 46926), (17, 46971), (20, 47016), (23, 47040), (37, 47184), (41, 47232), (46, 47301), (47, 47304), (48, 47310), (52, 47343), (56, 47388),

Gene: Cosmo\_86 Start: 52813, Stop: 53370, Start Num: 7

Candidate Starts for Cosmo\_86:

(Start: 7 @52813 has 4 MA's), (Start: 11 @52852 has 1 MA's), (16, 52903), (18, 52924), (21, 52975), (25, 53023), (29, 53059), (31, 53068), (36, 53110), (38, 53143), (39, 53155), (42, 53206), (43, 53221), (44, 53236), (45, 53242), (50, 53275), (53, 53305), (54, 53323), (57, 53338), (58, 53365),

Gene: Diminimus\_73 Start: 47072, Stop: 47698, Start Num: 3

Candidate Starts for Diminimus\_73:

(Start: 1 @47057 has 1 MA's), (Start: 3 @47072 has 14 MA's), (5, 47123), (8, 47147), (9, 47156), (10, 47162), (14, 47198), (17, 47243), (20, 47288), (23, 47312), (37, 47456), (41, 47504), (46, 47573), (47, 47576), (48, 47582), (52, 47615), (56, 47660),

Gene: Dulcita\_73 Start: 47073, Stop: 47699, Start Num: 3

Candidate Starts for Dulcita\_73:

(Start: 1 @47058 has 1 MA's), (Start: 3 @47073 has 14 MA's), (5, 47124), (8, 47148), (9, 47157), (10, 47163), (14, 47199), (17, 47244), (20, 47289), (23, 47313), (37, 47457), (41, 47505), (46, 47574), (47, 47577), (48, 47583), (52, 47616), (56, 47661),

Gene: EniyanLRS\_82 Start: 52552, Stop: 53109, Start Num: 7

Candidate Starts for EniyanLRS\_82:

(Start: 7 @52552 has 4 MA's), (Start: 11 @52591 has 1 MA's), (16, 52642), (18, 52663), (21, 52714), (25, 52762), (27, 52774), (29, 52798), (31, 52807), (36, 52849), (38, 52882), (39, 52894), (42, 52945), (43, 52960), (44, 52975), (45, 52981), (50, 53014), (53, 53044), (54, 53062), (57, 53077), (58, 53104),

Gene: Estes\_81 Start: 49464, Stop: 50096, Start Num: 4

Candidate Starts for Estes\_81:

(Start: 4 @49464 has 7 MA's), (8, 49542), (13, 49581), (19, 49656), (24, 49719), (47, 49974), (48, 49980), (55, 50049), (56, 50058),

Gene: FreakyGoo\_74 Start: 47552, Stop: 48178, Start Num: 3

Candidate Starts for FreakyGoo\_74:

(Start: 1 @47537 has 1 MA's), (Start: 3 @47552 has 14 MA's), (5, 47603), (8, 47627), (9, 47636), (10, 47642), (14, 47678), (17, 47723), (20, 47768), (23, 47792), (37, 47936), (41, 47984), (46, 48053), (47, 48056), (48, 48062), (52, 48095), (56, 48140),

Gene: GardenSalsa\_81 Start: 49668, Stop: 50300, Start Num: 4

Candidate Starts for GardenSalsa\_81:

(Start: 4 @49668 has 7 MA's), (8, 49746), (13, 49785), (19, 49860), (24, 49923), (47, 50178), (48, 50184), (55, 50253), (56, 50262),

Gene: GenevaB15\_80 Start: 49117, Stop: 49749, Start Num: 4

Candidate Starts for GenevaB15\_80:

(Start: 4 @49117 has 7 MA's), (8, 49195), (13, 49234), (19, 49309), (24, 49372), (47, 49627), (48, 49633), (55, 49702), (56, 49711),

Gene: Glaske16\_74 Start: 47551, Stop: 48177, Start Num: 3

Candidate Starts for Glaske16\_74:

(Start: 1 @47536 has 1 MA's), (Start: 3 @47551 has 14 MA's), (5, 47602), (8, 47626), (9, 47635), (10, 47641), (14, 47677), (17, 47722), (20, 47767), (23, 47791), (37, 47935), (41, 47983), (46, 48052), (47, 48055), (48, 48061), (52, 48094), (56, 48139),

Gene: IPHane7\_72 Start: 47077, Stop: 47703, Start Num: 3

Candidate Starts for IPHane7\_72:

(Start: 1 @47062 has 1 MA's), (Start: 3 @47077 has 14 MA's), (5, 47128), (8, 47152), (9, 47161), (10, 47167), (14, 47203), (17, 47248), (20, 47293), (23, 47317), (37, 47461), (41, 47509), (46, 47578), (47, 47581), (48, 47587), (52, 47620), (56, 47665),

Gene: Izel\_73 Start: 47072, Stop: 47698, Start Num: 3

Candidate Starts for Izel\_73:

(Start: 1 @47057 has 1 MA's), (Start: 3 @47072 has 14 MA's), (5, 47123), (8, 47147), (9, 47156), (10, 47162), (14, 47198), (17, 47243), (20, 47288), (23, 47312), (37, 47456), (41, 47504), (46, 47573), (47, 47576), (48, 47582), (52, 47615), (56, 47660),

Gene: KleverKiS\_71 Start: 46794, Stop: 47420, Start Num: 3

Candidate Starts for KleverKiS\_71:

(Start: 1 @46779 has 1 MA's), (Start: 3 @46794 has 14 MA's), (5, 46845), (8, 46869), (9, 46878), (10, 46884), (14, 46920), (17, 46965), (20, 47010), (23, 47034), (37, 47178), (41, 47226), (46, 47295), (47, 47298), (48, 47304), (52, 47337), (56, 47382),

Gene: Kumao\_68 Start: 47619, Stop: 48197, Start Num: 2

Candidate Starts for Kumao\_68:

(Start: 2 @47619 has 1 MA's), (10, 47688), (20, 47796), (26, 47865), (34, 47922), (35, 47925), (46, 48069), (48, 48078), (49, 48081), (51, 48099), (53, 48126), (58, 48186),

Gene: LilhomieP\_72 Start: 47556, Stop: 48182, Start Num: 3

Candidate Starts for LilhomieP\_72:

(Start: 1 @47541 has 1 MA's), (Start: 3 @47556 has 14 MA's), (5, 47607), (8, 47631), (9, 47640), (10, 47646), (14, 47682), (17, 47727), (20, 47772), (23, 47796), (37, 47940), (41, 47988), (46, 48057), (47, 48060), (48, 48066), (52, 48099), (56, 48144),

Gene: MaryV\_86 Start: 52634, Stop: 53191, Start Num: 7

Candidate Starts for MaryV\_86:

(Start: 7 @52634 has 4 MA's), (Start: 11 @52673 has 1 MA's), (18, 52745), (21, 52796), (25, 52844), (29, 52880), (31, 52889), (36, 52931), (38, 52964), (39, 52976), (42, 53027), (43, 53042), (44, 53057), (45, 53063), (50, 53096), (53, 53126), (54, 53144), (57, 53159), (58, 53186),

Gene: MrMagoo\_82 Start: 49668, Stop: 50300, Start Num: 4

Candidate Starts for MrMagoo\_82:

(Start: 4 @49668 has 7 MA's), (8, 49746), (13, 49785), (19, 49860), (24, 49923), (47, 50178), (48, 50184), (55, 50253), (56, 50262),

Gene: Nanosmite\_77 Start: 48715, Stop: 49344, Start Num: 4

Candidate Starts for Nanosmite\_77:

(Start: 4 @48715 has 7 MA's), (8, 48793), (10, 48808), (12, 48820), (13, 48832), (15, 48871), (17, 48889), (20, 48934), (23, 48958), (24, 48970), (26, 49003), (28, 49024), (30, 49033), (37, 49102), (40, 49144), (41, 49150), (47, 49222), (48, 49228), (52, 49261), (56, 49306),

Gene: PegLeg\_71 Start: 46817, Stop: 47443, Start Num: 3

Candidate Starts for PegLeg\_71:

(Start: 1 @46802 has 1 MA's), (Start: 3 @46817 has 14 MA's), (5, 46868), (8, 46892), (9, 46901), (10, 46907), (14, 46943), (17, 46988), (20, 47033), (23, 47057), (37, 47201), (41, 47249), (46, 47318), (47, 47321), (48, 47327), (52, 47360), (56, 47405),

Gene: Reindeer\_74 Start: 48209, Stop: 48835, Start Num: 3

Candidate Starts for Reindeer\_74:

(Start: 1 @48194 has 1 MA's), (Start: 3 @48209 has 14 MA's), (5, 48260), (6, 48266), (8, 48284), (9, 48293), (20, 48425), (23, 48449), (32, 48536), (33, 48545), (46, 48710), (47, 48713), (48, 48719), (56, 48797),

Gene: Rey\_79 Start: 49341, Stop: 49970, Start Num: 4

Candidate Starts for Rey\_79:

(Start: 4 @49341 has 7 MA's), (8, 49419), (13, 49458), (15, 49497), (19, 49533), (24, 49596), (32, 49671), (41, 49776), (47, 49848), (48, 49854), (55, 49923), (56, 49932),

Gene: RoseMarie\_77 Start: 50434, Stop: 51060, Start Num: 3

Candidate Starts for RoseMarie\_77:

(Start: 1 @50419 has 1 MA's), (Start: 3 @50434 has 14 MA's), (5, 50485), (8, 50509), (9, 50518), (20, 50650), (22, 50665), (23, 50674), (30, 50749), (37, 50818), (46, 50935), (47, 50938), (48, 50944), (56, 51022), (58, 51052),

Gene: Skinny\_75 Start: 47985, Stop: 48611, Start Num: 3

Candidate Starts for Skinny\_75:

(Start: 1 @47970 has 1 MA's), (Start: 3 @47985 has 14 MA's), (5, 48036), (8, 48060), (9, 48069), (10, 48075), (14, 48111), (17, 48156), (20, 48201), (23, 48225), (37, 48369), (41, 48417), (46, 48486), (47, 48489), (48, 48495), (52, 48528), (56, 48573),

Gene: SlimJimmy\_72 Start: 47541, Stop: 48167, Start Num: 3

Candidate Starts for SlimJimmy\_72:

(Start: 1 @47526 has 1 MA's), (Start: 3 @47541 has 14 MA's), (5, 47592), (8, 47616), (9, 47625), (10, 47631), (14, 47667), (17, 47712), (20, 47757), (23, 47781), (37, 47925), (41, 47973), (46, 48042), (47, 48045), (48, 48051), (52, 48084), (56, 48129),

Gene: TpudiCK\_74 Start: 47076, Stop: 47702, Start Num: 3

Candidate Starts for TpudiCK\_74:

(Start: 1 @47061 has 1 MA's), (Start: 3 @47076 has 14 MA's), (5, 47127), (8, 47151), (9, 47160), (10, 47166), (14, 47202), (17, 47247), (20, 47292), (23, 47316), (37, 47460), (41, 47508), (46, 47577), (47, 47580), (48, 47586), (52, 47619), (56, 47664),

Gene: TyDawg\_72 Start: 47077, Stop: 47703, Start Num: 3

Candidate Starts for TyDawg\_72:

(Start: 1 @47062 has 1 MA's), (Start: 3 @47077 has 14 MA's), (5, 47128), (8, 47152), (9, 47161), (10, 47167), (14, 47203), (17, 47248), (20, 47293), (23, 47317), (37, 47461), (41, 47509), (46, 47578), (47, 47581), (48, 47587), (52, 47620), (56, 47665),

Gene: Wildcat\_86 Start: 52644, Stop: 53201, Start Num: 7

Candidate Starts for Wildcat\_86:

(Start: 7 @52644 has 4 MA's), (Start: 11 @52683 has 1 MA's), (18, 52755), (21, 52806), (25, 52854), (29, 52890), (31, 52899), (36, 52941), (38, 52974), (39, 52986), (42, 53037), (43, 53052), (44, 53067), (45, 53073), (50, 53106), (53, 53136), (54, 53154), (57, 53169), (58, 53196),