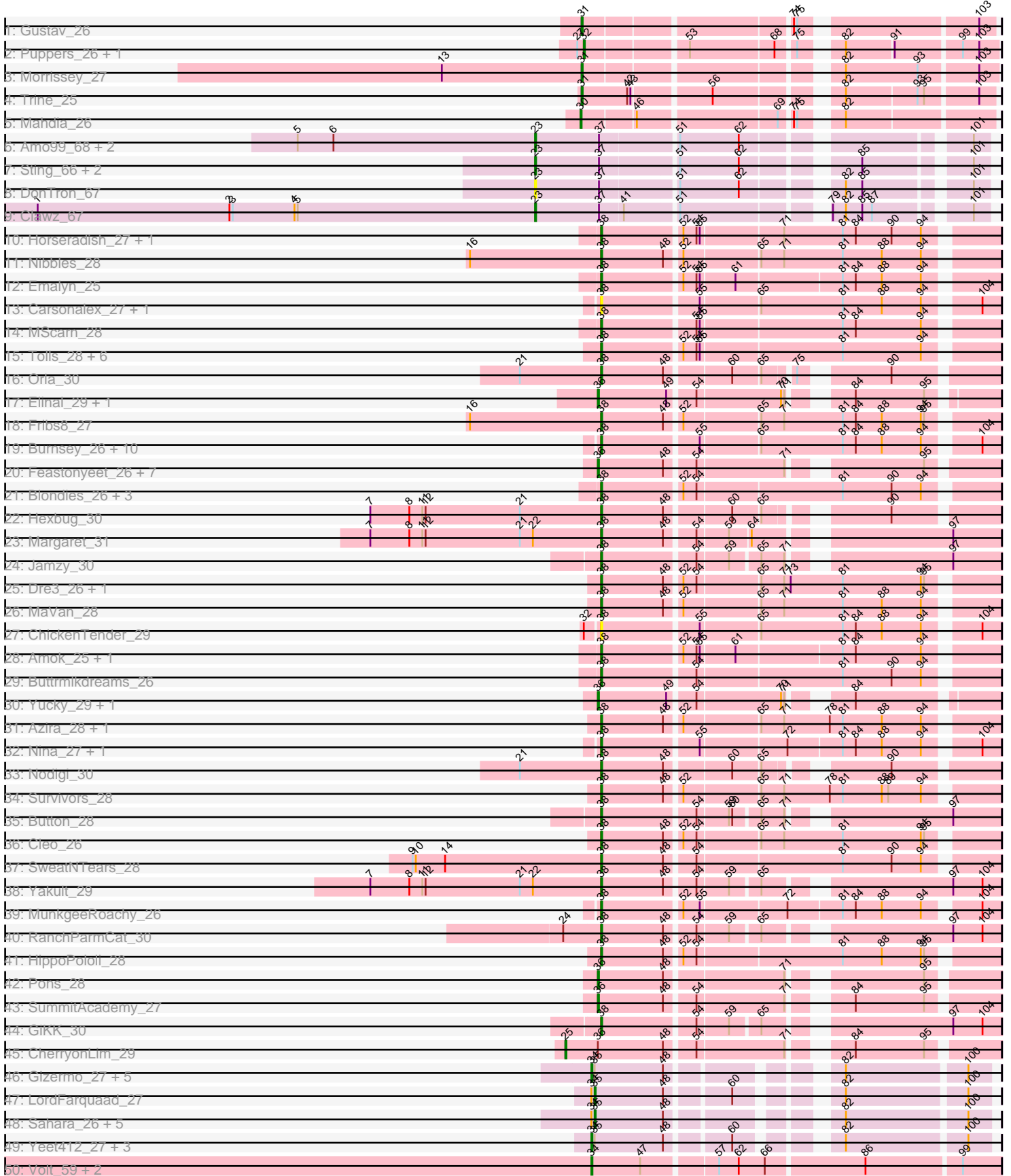
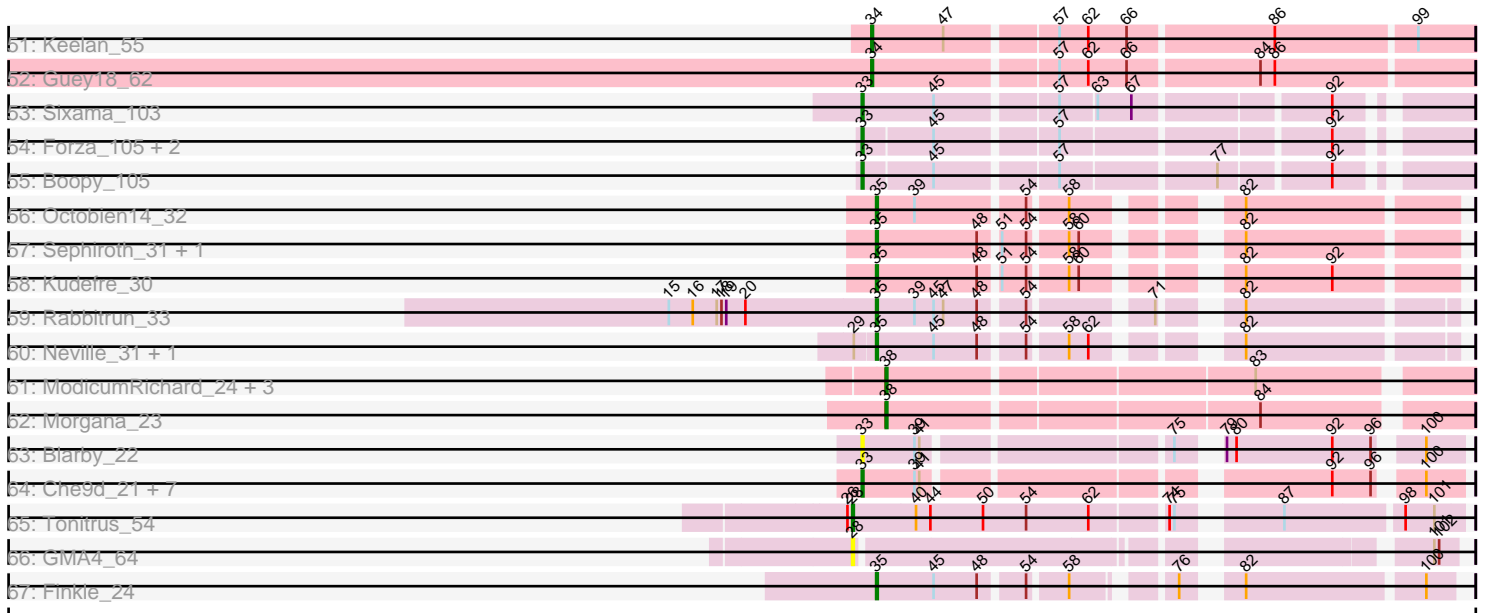


Pham 224389



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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 224389 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224389 has 135 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Gustav\_26
- Track 2 : Poppers\_26, Widow\_26
- Track 3 : Morrissey\_27
- Track 4 : Trine\_25
- Track 5 : Mahdia\_26
- Track 6 : Amo99\_68, Jollymon\_67, ColdSoup\_68
- Track 7 : Sting\_66, KingstonB\_68, Soos\_63
- Track 8 : DonTron\_67
- Track 9 : Clawz\_67
- Track 10 : Horseradish\_27, Yummy\_27
- Track 11 : Nibbles\_28
- Track 12 : Emalyn\_25
- Track 13 : Carsonalex\_27, RedBaron\_27
- Track 14 : MScarn\_28
- Track 15 : Tolls\_28, AndPeggy\_25, CanesSauce\_26, BillDoor\_28, Yarn\_25, SteamedHams\_28, ChocoMunchkin\_26
- Track 16 : Orla\_30
- Track 17 : Elinal\_29, KayGee\_28
- Track 18 : Fribs8\_27
- Track 19 : Burnsey\_26, Starburst\_27, Typhonmachy\_27, Axym\_26, Sopespian\_26, GoldHunter\_27, Cozz\_26, Socotra\_27, PsychoKiller\_26, Elliott\_26, Quasar\_26
- Track 20 : Feastonyet\_26, MAnor\_28, SheckWes\_27, Mayweather\_29, PotPie\_27, Lauer\_27, Bavilard\_27, BigChungus\_26
- Track 21 : Blondies\_26, Biskit\_27, Troje\_26, SketchMex\_25
- Track 22 : Hexbug\_30
- Track 23 : Margaret\_31
- Track 24 : Jamzy\_30
- Track 25 : Dre3\_26, Gibbous\_26
- Track 26 : MaVan\_28
- Track 27 : ChickenTender\_29
- Track 28 : Amok\_25, AikoCarson\_25
- Track 29 : Buttrmilkdreams\_26
- Track 30 : Yucky\_29, Vine\_28
- Track 31 : Azira\_28, Zareef\_30
- Track 32 : Nina\_27, Agatha\_26
- Track 33 : Nodigi\_30
- Track 34 : Survivors\_28

- Track 35 : Button\_28
- Track 36 : Cleo\_26
- Track 37 : SweatNTears\_28
- Track 38 : Yakult\_29
- Track 39 : MunkgeeRoachy\_26
- Track 40 : RanchParmCat\_30
- Track 41 : HippoPololi\_28
- Track 42 : Pons\_28
- Track 43 : SummitAcademy\_27
- Track 44 : GiKK\_30
- Track 45 : CherryonLim\_29
- Track 46 : Gizermo\_27, Savage\_27, Cynthia\_27, Ebert\_27, Sproutie\_27, Mocha12\_27
- Track 47 : LordFarquaad\_27
- Track 48 : Sahara\_26, Haley23\_27, GemG\_27, Clap\_27, Whiteclaw\_27, TuertoX\_27
- Track 49 : Yeet412\_27, Attis\_27, Bjanes7\_27, SoilAssassin\_27
- Track 50 : Volt\_59, Fryberger\_57, Ziko\_60
- Track 51 : Keelan\_55
- Track 52 : Guey18\_62
- Track 53 : Sixama\_103
- Track 54 : Forza\_105, BlueNGold\_104, Mareelih\_103
- Track 55 : Boopy\_105
- Track 56 : Octobien14\_32
- Track 57 : Sephiroth\_31, Syleon\_31
- Track 58 : Kudrefre\_30
- Track 59 : Rabbitrun\_33
- Track 60 : Neville\_31, Trax\_31
- Track 61 : ModicumRichard\_24, ObLaDi\_24, Aleemily\_23, Cafasso\_24
- Track 62 : Morgana\_23
- Track 63 : Blarby\_22
- Track 64 : Che9d\_21, Zapner\_22, Avani\_21, SilverChicken\_21, Jabbawokkie\_23, Demsculpinboyz\_21, Soul22\_21, Yoshi\_21
- Track 65 : Tonitrus\_54
- Track 66 : GMA4\_64
- Track 67 : Finkle\_24

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

The start number called the most often in the published annotations is 38, it was called in 45 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha\_26, AikoCarson\_25, Aleemily\_23, Amok\_25, AndPeggy\_25, Axym\_26, Azira\_28, BillDoor\_28, Biskit\_27, Blondies\_26, Burnsey\_26, Button\_28, Buttrmldreams\_26, Cafasso\_24, CanesSauce\_26, Carsonalex\_27, ChickenTender\_29, ChocoMunchkin\_26, Cleo\_26, Cozz\_26, Dre3\_26, Elliott\_26, Emalyn\_25, Fribs8\_27, GiKK\_30, Gibbous\_26, GoldHunter\_27, Hexbug\_30, HippoPololi\_28, Horseradish\_27, Jamzy\_30, MScarn\_28, MaVan\_28, Margaret\_31, ModicumRichard\_24, Morgana\_23, MunkgeeRoachy\_26, Nibbles\_28, Nina\_27,

Nodigi\_30, ObLaDi\_24, Orla\_30, PsychoKiller\_26, Quasar\_26, RanchParmCat\_30, RedBaron\_27, SketchMex\_25, Socotra\_27, Sopespian\_26, Starburst\_27, SteamedHams\_28, Survivors\_28, SweatNTears\_28, Tolls\_28, Troje\_26, Typhonomachy\_27, Yakult\_29, Yarn\_25, Yummy\_27, Zareef\_30,

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

- 

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

- Amo99\_68, Attis\_27, Avani\_21, Bavilard\_27, BigChungus\_26, Bjaner7\_27, Blarby\_22, BlueNGold\_104, Boopy\_105, Che9d\_21, CherryonLim\_29, Clap\_27, Clawz\_67, ColdSoup\_68, Cynthia\_27, Demsculpinboyz\_21, DonTron\_67, Ebert\_27, Elinal\_29, Feastonyeet\_26, Finkle\_24, Forza\_105, Fryberger\_57, GMA4\_64, GemG\_27, Gizermo\_27, Guey18\_62, Gustav\_26, Haley23\_27, Jabbawokkie\_23, Jollymon\_67, KayGee\_28, Keelan\_55, KingstonB\_68, Kudrefre\_30, Lauer\_27, LordFarquaad\_27, MAnor\_28, Mahdia\_26, Mareelih\_103, Mayweather\_29, Mocha12\_27, Morrissey\_27, Neville\_31, Octobien14\_32, Pons\_28, PotPie\_27, Puppies\_26, Rabbitrun\_33, Sahara\_26, Savage\_27, Sephiroth\_31, SheckWes\_27, SilverChicken\_21, Sixama\_103, SoilAssassin\_27, Soos\_63, Soul22\_21, Sproutie\_27, Sting\_66, SummitAcademy\_27, Syleon\_31, Tonitrus\_54, Trax\_31, Trine\_25, TuertoX\_27, Vine\_28, Volt\_59, Whiteclaw\_27, Widow\_26, Yeet412\_27, Yoshi\_21, Yucky\_29, Zapner\_22, Ziko\_60,

### Summary by start number:

Start 23:

- Found in 8 of 135 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 4 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amo99\_68 (CP), Clawz\_67 (CP), ColdSoup\_68 (CP), DonTron\_67 (CP), Jollymon\_67 (CP), KingstonB\_68 (CP), Soos\_63 (CP), Sting\_66 (CP),

Start 25:

- Found in 1 of 135 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryonLim\_29 (CT),

Start 28:

- Found in 2 of 135 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4\_64 (singleton), Tonitrus\_54 (singleton),

Start 30:

- Found in 1 of 135 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mahdia\_26 (CD),

Start 31:

- Found in 3 of 135 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 3 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gustav\_26 (CD), Morrissey\_27 (CD), Trine\_25 (CD),

#### Start 32:

- Found in 3 of 135 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Puppies\_26 (CD), Widow\_26 (CD),

#### Start 33:

- Found in 14 of 135 ( 10.4% ) of genes in pham
- Manual Annotations of this start: 12 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Avani\_21 (F2), Blarby\_22 (F), BlueNGold\_104 (DS), Boopy\_105 (DS), Che9d\_21 (F2), Demsculpinboyz\_21 (F2), Forza\_105 (DS), Jabbawokkie\_23 (F2), Mareelih\_103 (DS), SilverChicken\_21 (F2), Sixama\_103 (DS), Soul22\_21 (F2), Yoshi\_21 (F2), Zapner\_22 (F2),

#### Start 34:

- Found in 22 of 135 ( 16.3% ) of genes in pham
- Manual Annotations of this start: 15 of 111
- Called 68.2% of time when present
- Phage (with cluster) where this start called: Attis\_27 (CZ2), Bjaner7\_27 (CZ2), Cynthia\_27 (CZ2), Ebert\_27 (CZ2), Fryberger\_57 (DP), Gizermo\_27 (CZ2), Guey18\_62 (DP), Keelan\_55 (DP), Mocha12\_27 (CZ2), Savage\_27 (CZ2), SoilAssassin\_27 (CZ2), Sproutie\_27 (CZ2), Volt\_59 (DP), Yeet412\_27 (CZ2), Ziko\_60 (DP),

#### Start 35:

- Found in 25 of 135 ( 18.5% ) of genes in pham
- Manual Annotations of this start: 15 of 111
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Clap\_27 (CZ2), Finkle\_24 (singleton), GemG\_27 (CZ2), Haley23\_27 (CZ2), Kudrefre\_30 (DU1), LordFarquaad\_27 (CZ2), Neville\_31 (DU2), Octobien14\_32 (DU1), Rabbitrun\_33 (DU2), Sahara\_26 (CZ2), Sephiroth\_31 (DU1), Syleon\_31 (DU1), Trax\_31 (DU2), TuertoX\_27 (CZ2), Whiteclaw\_27 (CZ2),

#### Start 36:

- Found in 15 of 135 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 12 of 111
- Called 93.3% of time when present
- Phage (with cluster) where this start called: Bavidard\_27 (CT), BigChungus\_26 (CT), Elinal\_29 (CT), Feastonyeet\_26 (CT), KayGee\_28 (CT), Lauer\_27 (CT), MAnor\_28 (CT), Mayweather\_29 (CT), Pons\_28 (CT), PotPie\_27 (CT), SheckWes\_27 (CT), SummitAcademy\_27 (CT), Vine\_28 (CT), Yucky\_29 (CT),

#### Start 38:

- Found in 60 of 135 ( 44.4% ) of genes in pham
- Manual Annotations of this start: 45 of 111

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agatha\_26 (CT), AikoCarson\_25 (CT), Aleemily\_23 (DZ), Amok\_25 (CT), AndPeggy\_25 (CT), Axym\_26 (CT), Azira\_28 (CT), BillDoor\_28 (CT), Biskit\_27 (CT), Blondies\_26 (CT), Burnsey\_26 (CT), Button\_28 (CT), Buttrmlkdreams\_26 (CT), Cafasso\_24 (DZ), CanesSauce\_26 (CT), Carsonalex\_27 (CT), ChickenTender\_29 (CT), ChocoMunchkin\_26 (CT), Cleo\_26 (CT), Cozz\_26 (CT), Dre3\_26 (CT), Elliott\_26 (CT), Emalyn\_25 (CT), Fribs8\_27 (CT), GiKK\_30 (CT), Gibbous\_26 (CT), GoldHunter\_27 (CT), Hexbug\_30 (CT), HippoPololi\_28 (CT), Horseradish\_27 (CT), Jamzy\_30 (CT), MScarn\_28 (CT), MaVan\_28 (CT), Margaret\_31 (CT), ModicumRichard\_24 (DZ), Morgana\_23 (DZ), MunkgeeRoachy\_26 (CT), Nibbles\_28 (CT), Nina\_27 (CT), Nodigi\_30 (CT), ObLaDi\_24 (DZ), Orla\_30 (CT), PsychoKiller\_26 (CT), Quasar\_26 (CT), RanchParmCat\_30 (CT), RedBaron\_27 (CT), SketchMex\_25 (CT), Socotra\_27 (CT), Sopespian\_26 (CT), Starburst\_27 (CT), SteamedHams\_28 (CT), Survivors\_28 (CT), SweatNTears\_28 (CT), Tolls\_28 (CT), Troje\_26 (CT), Typhonmarchy\_27 (CT), Yakult\_29 (CT), Yarn\_25 (CT), Yummy\_27 (CT), Zareef\_30 (CT),

### Summary by clusters:

There are 12 clusters represented in this pham: F2, F, CZ2, singleton, CD, DZ, DU1, DU2, CP, DS, DP, CT,

Info for manual annotations of cluster CD:

- Start number 30 was manually annotated 1 time for cluster CD.
- Start number 31 was manually annotated 3 times for cluster CD.
- Start number 32 was manually annotated 2 times for cluster CD.

Info for manual annotations of cluster CP:

- Start number 23 was manually annotated 4 times for cluster CP.

Info for manual annotations of cluster CT:

- Start number 25 was manually annotated 1 time for cluster CT.
- Start number 36 was manually annotated 12 times for cluster CT.
- Start number 38 was manually annotated 41 times for cluster CT.

Info for manual annotations of cluster CZ2:

- Start number 34 was manually annotated 10 times for cluster CZ2.
- Start number 35 was manually annotated 7 times for cluster CZ2.

Info for manual annotations of cluster DP:

- Start number 34 was manually annotated 5 times for cluster DP.

Info for manual annotations of cluster DS:

- Start number 33 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster DU1:

- Start number 35 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 35 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster DZ:

- Start number 38 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster F2:

•Start number 33 was manually annotated 7 times for cluster F2.

**Gene Information:**

Gene: Agatha\_26 Start: 21623, Stop: 21961, Start Num: 38

Candidate Starts for Agatha\_26:

(Start: 38 @21623 has 45 MA's), (55, 21707), (72, 21782), (81, 21830), (84, 21842), (88, 21866), (94, 21902), (104, 21944),

Gene: AikoCarson\_25 Start: 20901, Stop: 21239, Start Num: 38

Candidate Starts for AikoCarson\_25:

(Start: 38 @20901 has 45 MA's), (52, 20970), (54, 20982), (55, 20985), (61, 21015), (81, 21108), (84, 21120), (94, 21180),

Gene: Aleemily\_23 Start: 21080, Stop: 21418, Start Num: 38

Candidate Starts for Aleemily\_23:

(Start: 38 @21080 has 45 MA's), (83, 21296),

Gene: Amo99\_68 Start: 44946, Stop: 45308, Start Num: 23

Candidate Starts for Amo99\_68:

(5, 44727), (6, 44760), (Start: 23 @44946 has 4 MA's), (37, 45003), (51, 45069), (62, 45123), (101, 45294),

Gene: Amok\_25 Start: 20859, Stop: 21197, Start Num: 38

Candidate Starts for Amok\_25:

(Start: 38 @20859 has 45 MA's), (52, 20928), (54, 20940), (55, 20943), (61, 20973), (81, 21066), (84, 21078), (94, 21138),

Gene: AndPeggy\_25 Start: 21304, Stop: 21645, Start Num: 38

Candidate Starts for AndPeggy\_25:

(Start: 38 @21304 has 45 MA's), (52, 21373), (54, 21385), (55, 21388), (81, 21514), (94, 21586),

Gene: Attis\_27 Start: 22281, Stop: 22592, Start Num: 34

Candidate Starts for Attis\_27:

(Start: 34 @22281 has 15 MA's), (Start: 35 @22284 has 15 MA's), (48, 22347), (60, 22398), (82, 22467), (100, 22572),

Gene: Avani\_21 Start: 15770, Stop: 16093, Start Num: 33

Candidate Starts for Avani\_21:

(Start: 33 @15770 has 12 MA's), (39, 15803), (41, 15806), (92, 16025), (96, 16049), (100, 16070),

Gene: Axym\_26 Start: 21623, Stop: 21964, Start Num: 38

Candidate Starts for Axym\_26:

(Start: 38 @21623 has 45 MA's), (55, 21707), (65, 21758), (81, 21833), (84, 21845), (88, 21869), (94, 21905), (104, 21947),

Gene: Azira\_28 Start: 22601, Stop: 22942, Start Num: 38

Candidate Starts for Azira\_28:



(Start: 38 @22601 has 45 MA's), (48, 22658), (52, 22670), (65, 22736), (71, 22757), (78, 22799), (81, 22811), (88, 22847), (94, 22883),

Gene: Bavilard\_27 Start: 22292, Stop: 22615, Start Num: 36

Candidate Starts for Bavilard\_27:

(Start: 36 @22292 has 12 MA's), (48, 22352), (54, 22376), (71, 22454), (95, 22556),

Gene: BigChungus\_26 Start: 21550, Stop: 21873, Start Num: 36

Candidate Starts for BigChungus\_26:

(Start: 36 @21550 has 12 MA's), (48, 21610), (54, 21634), (71, 21712), (95, 21814),

Gene: BillDoor\_28 Start: 21251, Stop: 21592, Start Num: 38

Candidate Starts for BillDoor\_28:

(Start: 38 @21251 has 45 MA's), (52, 21320), (54, 21332), (55, 21335), (81, 21461), (94, 21533),

Gene: Biskit\_27 Start: 21276, Stop: 21617, Start Num: 38

Candidate Starts for Biskit\_27:

(Start: 38 @21276 has 45 MA's), (52, 21345), (54, 21357), (81, 21486), (90, 21531), (94, 21558),

Gene: Bjaner7\_27 Start: 22281, Stop: 22592, Start Num: 34

Candidate Starts for Bjaner7\_27:

(Start: 34 @22281 has 15 MA's), (Start: 35 @22284 has 15 MA's), (48, 22347), (60, 22398), (82, 22467), (100, 22572),

Gene: Blarby\_22 Start: 16290, Stop: 16613, Start Num: 33

Candidate Starts for Blarby\_22:

(Start: 33 @16290 has 12 MA's), (39, 16323), (41, 16326), (75, 16464), (79, 16479), (80, 16485), (92, 16545), (96, 16569), (100, 16590),

Gene: Blondies\_26 Start: 21259, Stop: 21600, Start Num: 38

Candidate Starts for Blondies\_26:

(Start: 38 @21259 has 45 MA's), (52, 21328), (54, 21340), (81, 21469), (90, 21514), (94, 21541),

Gene: BlueNGold\_104 Start: 64169, Stop: 64501, Start Num: 33

Candidate Starts for BlueNGold\_104:

(Start: 33 @64169 has 12 MA's), (45, 64211), (57, 64280), (92, 64433),

Gene: Boopy\_105 Start: 64181, Stop: 64513, Start Num: 33

Candidate Starts for Boopy\_105:

(Start: 33 @64181 has 12 MA's), (45, 64223), (57, 64292), (77, 64382), (92, 64445),

Gene: Burnsey\_26 Start: 21624, Stop: 21965, Start Num: 38

Candidate Starts for Burnsey\_26:

(Start: 38 @21624 has 45 MA's), (55, 21708), (65, 21759), (81, 21834), (84, 21846), (88, 21870), (94, 21906), (104, 21948),

Gene: Button\_28 Start: 21047, Stop: 21373, Start Num: 38

Candidate Starts for Button\_28:

(Start: 38 @21047 has 45 MA's), (54, 21128), (59, 21155), (60, 21158), (65, 21179), (71, 21200), (97, 21329),

Gene: Buttrmldreams\_26 Start: 21258, Stop: 21599, Start Num: 38

Candidate Starts for Buttrmldreams\_26:

(Start: 38 @21258 has 45 MA's), (54, 21339), (81, 21468), (90, 21513), (94, 21540),

Gene: Cafasso\_24 Start: 21653, Stop: 21991, Start Num: 38

Candidate Starts for Cafasso\_24:

(Start: 38 @21653 has 45 MA's), (83, 21869),

Gene: CanesSauce\_26 Start: 21305, Stop: 21646, Start Num: 38

Candidate Starts for CanesSauce\_26:

(Start: 38 @21305 has 45 MA's), (52, 21374), (54, 21386), (55, 21389), (81, 21515), (94, 21587),

Gene: Carsonalex\_27 Start: 21681, Stop: 22022, Start Num: 38

Candidate Starts for Carsonalex\_27:

(Start: 38 @21681 has 45 MA's), (55, 21765), (65, 21816), (81, 21891), (88, 21927), (94, 21963), (104, 22005),

Gene: Che9d\_21 Start: 15778, Stop: 16101, Start Num: 33

Candidate Starts for Che9d\_21:

(Start: 33 @15778 has 12 MA's), (39, 15811), (41, 15814), (92, 16033), (96, 16057), (100, 16078),

Gene: CherryonLim\_29 Start: 23257, Stop: 23610, Start Num: 25

Candidate Starts for CherryonLim\_29:

(Start: 25 @23257 has 1 MA's), (Start: 36 @23287 has 12 MA's), (48, 23347), (54, 23371), (71, 23449), (84, 23488), (95, 23551),

Gene: ChickenTender\_29 Start: 21897, Stop: 22238, Start Num: 38

Candidate Starts for ChickenTender\_29:

(Start: 32 @21885 has 2 MA's), (Start: 38 @21897 has 45 MA's), (55, 21981), (65, 22032), (81, 22107), (84, 22119), (88, 22143), (94, 22179), (104, 22221),

Gene: ChocoMunchkin\_26 Start: 21305, Stop: 21646, Start Num: 38

Candidate Starts for ChocoMunchkin\_26:

(Start: 38 @21305 has 45 MA's), (52, 21374), (54, 21386), (55, 21389), (81, 21515), (94, 21587),

Gene: Clap\_27 Start: 22291, Stop: 22599, Start Num: 35

Candidate Starts for Clap\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Clawz\_67 Start: 44832, Stop: 45194, Start Num: 23

Candidate Starts for Clawz\_67:

(1, 44373), (2, 44550), (3, 44553), (4, 44610), (5, 44613), (Start: 23 @44832 has 4 MA's), (37, 44889), (41, 44910), (51, 44955), (79, 45069), (82, 45081), (85, 45096), (87, 45105), (101, 45180),

Gene: Cleo\_26 Start: 21948, Stop: 22289, Start Num: 38

Candidate Starts for Cleo\_26:

(Start: 38 @21948 has 45 MA's), (48, 22005), (52, 22017), (54, 22029), (65, 22083), (71, 22104), (81, 22158), (94, 22230), (95, 22233),

Gene: ColdSoup\_68 Start: 45027, Stop: 45389, Start Num: 23

Candidate Starts for ColdSoup\_68:

(5, 44808), (6, 44841), (Start: 23 @45027 has 4 MA's), (37, 45084), (51, 45150), (62, 45204), (101, 45375),

Gene: Cozz\_26 Start: 21624, Stop: 21965, Start Num: 38

Candidate Starts for Cozz\_26:

(Start: 38 @21624 has 45 MA's), (55, 21708), (65, 21759), (81, 21834), (84, 21846), (88, 21870), (94, 21906), (104, 21948),

Gene: Cynthia\_27 Start: 22288, Stop: 22599, Start Num: 34

Candidate Starts for Cynthia\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Demsculpinboyz\_21 Start: 15763, Stop: 16086, Start Num: 33

Candidate Starts for Demsculpinboyz\_21:

(Start: 33 @15763 has 12 MA's), (39, 15796), (41, 15799), (92, 16018), (96, 16042), (100, 16063),

Gene: DonTron\_67 Start: 45068, Stop: 45430, Start Num: 23

Candidate Starts for DonTron\_67:

(Start: 23 @45068 has 4 MA's), (37, 45125), (51, 45191), (62, 45245), (82, 45317), (85, 45332), (101, 45416),

Gene: Dre3\_26 Start: 21874, Stop: 22215, Start Num: 38

Candidate Starts for Dre3\_26:

(Start: 38 @21874 has 45 MA's), (48, 21931), (52, 21943), (54, 21955), (65, 22009), (71, 22030), (73, 22036), (81, 22084), (94, 22156), (95, 22159),

Gene: Ebert\_27 Start: 22288, Stop: 22599, Start Num: 34

Candidate Starts for Ebert\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Elinal\_29 Start: 22527, Stop: 22847, Start Num: 36

Candidate Starts for Elinal\_29:

(Start: 36 @22527 has 12 MA's), (49, 22590), (54, 22611), (70, 22686), (71, 22689), (84, 22728), (95, 22791),

Gene: Elliott\_26 Start: 21623, Stop: 21964, Start Num: 38

Candidate Starts for Elliott\_26:

(Start: 38 @21623 has 45 MA's), (55, 21707), (65, 21758), (81, 21833), (84, 21845), (88, 21869), (94, 21905), (104, 21947),

Gene: Emalyn\_25 Start: 20900, Stop: 21238, Start Num: 38

Candidate Starts for Emalyn\_25:

(Start: 38 @20900 has 45 MA's), (52, 20969), (54, 20981), (55, 20984), (61, 21014), (81, 21107), (84, 21119), (88, 21143), (94, 21179),

Gene: Feastonyeet\_26 Start: 21550, Stop: 21873, Start Num: 36

Candidate Starts for Feastonyeet\_26:

(Start: 36 @21550 has 12 MA's), (48, 21610), (54, 21634), (71, 21712), (95, 21814),

Gene: Finkle\_24 Start: 21315, Stop: 21617, Start Num: 35

Candidate Starts for Finkle\_24:

(Start: 35 @21315 has 15 MA's), (45, 21351), (48, 21378), (54, 21402), (58, 21423), (76, 21471), (82, 21495), (100, 21600),

Gene: Forza\_105 Start: 64097, Stop: 64429, Start Num: 33  
Candidate Starts for Forza\_105:  
(Start: 33 @64097 has 12 MA's), (45, 64139), (57, 64208), (92, 64361),

Gene: Fribs8\_27 Start: 22452, Stop: 22793, Start Num: 38  
Candidate Starts for Fribs8\_27:  
(16, 22332), (Start: 38 @22452 has 45 MA's), (48, 22509), (52, 22521), (65, 22587), (71, 22608), (81, 22662), (84, 22674), (88, 22698), (94, 22734), (95, 22737),

Gene: Fryberger\_57 Start: 31459, Stop: 31815, Start Num: 34  
Candidate Starts for Fryberger\_57:  
(Start: 34 @31459 has 15 MA's), (47, 31504), (57, 31567), (62, 31585), (66, 31609), (86, 31696), (99, 31780),

Gene: GMA4\_64 Start: 42024, Stop: 42347, Start Num: 28  
Candidate Starts for GMA4\_64:  
(Start: 28 @42024 has 1 MA's), (101, 42333), (102, 42336),

Gene: GemG\_27 Start: 22291, Stop: 22599, Start Num: 35  
Candidate Starts for GemG\_27:  
(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: GiKK\_30 Start: 21346, Stop: 21672, Start Num: 38  
Candidate Starts for GiKK\_30:  
(Start: 38 @21346 has 45 MA's), (54, 21427), (59, 21454), (65, 21478), (97, 21628), (104, 21655),

Gene: Gibbous\_26 Start: 21874, Stop: 22215, Start Num: 38  
Candidate Starts for Gibbous\_26:  
(Start: 38 @21874 has 45 MA's), (48, 21931), (52, 21943), (54, 21955), (65, 22009), (71, 22030), (73, 22036), (81, 22084), (94, 22156), (95, 22159),

Gene: Gizermo\_27 Start: 22288, Stop: 22599, Start Num: 34  
Candidate Starts for Gizermo\_27:  
(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: GoldHunter\_27 Start: 21624, Stop: 21965, Start Num: 38  
Candidate Starts for GoldHunter\_27:  
(Start: 38 @21624 has 45 MA's), (55, 21708), (65, 21759), (81, 21834), (84, 21846), (88, 21870), (94, 21906), (104, 21948),

Gene: Guey18\_62 Start: 32651, Stop: 33007, Start Num: 34  
Candidate Starts for Guey18\_62:  
(Start: 34 @32651 has 15 MA's), (57, 32759), (62, 32777), (66, 32801), (84, 32879), (86, 32888),

Gene: Gustav\_26 Start: 21213, Stop: 21548, Start Num: 31  
Candidate Starts for Gustav\_26:  
(Start: 31 @21213 has 3 MA's), (74, 21387), (75, 21390), (103, 21534),

Gene: Haley23\_27 Start: 22291, Stop: 22599, Start Num: 35  
Candidate Starts for Haley23\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Hexbug\_30 Start: 21835, Stop: 22149, Start Num: 38

Candidate Starts for Hexbug\_30:

(7, 21622), (8, 21658), (11, 21670), (12, 21673), (21, 21760), (Start: 38 @21835 has 45 MA's), (48, 21892), (60, 21946), (65, 21970), (90, 22060),

Gene: HippoPololi\_28 Start: 22523, Stop: 22864, Start Num: 38

Candidate Starts for HippoPololi\_28:

(Start: 38 @22523 has 45 MA's), (48, 22580), (52, 22592), (54, 22604), (81, 22733), (88, 22769), (94, 22805), (95, 22808),

Gene: Horseradish\_27 Start: 21097, Stop: 21438, Start Num: 38

Candidate Starts for Horseradish\_27:

(Start: 38 @21097 has 45 MA's), (52, 21166), (54, 21178), (55, 21181), (71, 21253), (81, 21307), (84, 21319), (90, 21352), (94, 21379),

Gene: Jabbawokkie\_23 Start: 16293, Stop: 16616, Start Num: 33

Candidate Starts for Jabbawokkie\_23:

(Start: 33 @16293 has 12 MA's), (39, 16326), (41, 16329), (92, 16548), (96, 16572), (100, 16593),

Gene: Jamzy\_30 Start: 21360, Stop: 21686, Start Num: 38

Candidate Starts for Jamzy\_30:

(Start: 38 @21360 has 45 MA's), (54, 21441), (59, 21468), (65, 21492), (71, 21513), (97, 21642),

Gene: Jollymon\_67 Start: 45027, Stop: 45389, Start Num: 23

Candidate Starts for Jollymon\_67:

(5, 44808), (6, 44841), (Start: 23 @45027 has 4 MA's), (37, 45084), (51, 45150), (62, 45204), (101, 45375),

Gene: KayGee\_28 Start: 22527, Stop: 22847, Start Num: 36

Candidate Starts for KayGee\_28:

(Start: 36 @22527 has 12 MA's), (49, 22590), (54, 22611), (70, 22686), (71, 22689), (84, 22728), (95, 22791),

Gene: Keelan\_55 Start: 31456, Stop: 31812, Start Num: 34

Candidate Starts for Keelan\_55:

(Start: 34 @31456 has 15 MA's), (47, 31501), (57, 31564), (62, 31582), (66, 31606), (86, 31693), (99, 31777),

Gene: KingstonB\_68 Start: 44506, Stop: 44868, Start Num: 23

Candidate Starts for KingstonB\_68:

(Start: 23 @44506 has 4 MA's), (37, 44563), (51, 44629), (62, 44683), (85, 44770), (101, 44854),

Gene: Kudfre\_30 Start: 25686, Stop: 25994, Start Num: 35

Candidate Starts for Kudfre\_30:

(Start: 35 @25686 has 15 MA's), (48, 25749), (51, 25758), (54, 25773), (58, 25794), (60, 25800), (82, 25869), (92, 25923),

Gene: Lauer\_27 Start: 22580, Stop: 22903, Start Num: 36

Candidate Starts for Lauer\_27:

(Start: 36 @22580 has 12 MA's), (48, 22640), (54, 22664), (71, 22742), (95, 22844),

Gene: LordFarquaad\_27 Start: 22284, Stop: 22592, Start Num: 35  
Candidate Starts for LordFarquaad\_27:  
(Start: 34 @22281 has 15 MA's), (Start: 35 @22284 has 15 MA's), (48, 22347), (60, 22398), (82, 22467), (100, 22572),

Gene: MAnor\_28 Start: 22547, Stop: 22870, Start Num: 36  
Candidate Starts for MAnor\_28:  
(Start: 36 @22547 has 12 MA's), (48, 22607), (54, 22631), (71, 22709), (95, 22811),

Gene: MScarn\_28 Start: 21261, Stop: 21602, Start Num: 38  
Candidate Starts for MScarn\_28:  
(Start: 38 @21261 has 45 MA's), (54, 21342), (55, 21345), (81, 21471), (84, 21483), (94, 21543),

Gene: MaVan\_28 Start: 22634, Stop: 22975, Start Num: 38  
Candidate Starts for MaVan\_28:  
(Start: 38 @22634 has 45 MA's), (48, 22691), (52, 22703), (65, 22769), (71, 22790), (81, 22844), (88, 22880), (94, 22916),

Gene: Mahdia\_26 Start: 20538, Stop: 20870, Start Num: 30  
Candidate Starts for Mahdia\_26:  
(Start: 30 @20538 has 1 MA's), (46, 20583), (69, 20703), (74, 20712), (75, 20715), (82, 20742),

Gene: Mareelih\_103 Start: 63599, Stop: 63931, Start Num: 33  
Candidate Starts for Mareelih\_103:  
(Start: 33 @63599 has 12 MA's), (45, 63641), (57, 63710), (92, 63863),

Gene: Margaret\_31 Start: 21555, Stop: 21884, Start Num: 38  
Candidate Starts for Margaret\_31:  
(7, 21342), (8, 21378), (11, 21390), (12, 21393), (21, 21480), (22, 21492), (Start: 38 @21555 has 45 MA's), (48, 21612), (54, 21636), (59, 21663), (64, 21681), (97, 21840),

Gene: Mayweather\_29 Start: 23163, Stop: 23486, Start Num: 36  
Candidate Starts for Mayweather\_29:  
(Start: 36 @23163 has 12 MA's), (48, 23223), (54, 23247), (71, 23325), (95, 23427),

Gene: Mocha12\_27 Start: 22288, Stop: 22599, Start Num: 34  
Candidate Starts for Mocha12\_27:  
(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: ModicumRichard\_24 Start: 21653, Stop: 21991, Start Num: 38  
Candidate Starts for ModicumRichard\_24:  
(Start: 38 @21653 has 45 MA's), (83, 21869),

Gene: Morgana\_23 Start: 21084, Stop: 21422, Start Num: 38  
Candidate Starts for Morgana\_23:  
(Start: 38 @21084 has 45 MA's), (84, 21303),

Gene: Morrissey\_27 Start: 22085, Stop: 22423, Start Num: 31  
Candidate Starts for Morrissey\_27:  
(13, 21956), (Start: 31 @22085 has 3 MA's), (82, 22289), (93, 22355), (103, 22406),

Gene: MunkgeeRoachy\_26 Start: 21704, Stop: 22042, Start Num: 38  
Candidate Starts for MunkgeeRoachy\_26:  
(Start: 38 @21704 has 45 MA's), (52, 21773), (55, 21788), (72, 21863), (81, 21911), (84, 21923), (88, 21947), (94, 21983), (104, 22025),

Gene: Neville\_31 Start: 27108, Stop: 27413, Start Num: 35  
Candidate Starts for Neville\_31:  
(29, 27096), (Start: 35 @27108 has 15 MA's), (45, 27144), (48, 27171), (54, 27195), (58, 27216), (62, 27228), (82, 27291),

Gene: Nibbles\_28 Start: 22633, Stop: 22974, Start Num: 38  
Candidate Starts for Nibbles\_28:  
(16, 22513), (Start: 38 @22633 has 45 MA's), (48, 22690), (52, 22702), (65, 22768), (71, 22789), (81, 22843), (88, 22879), (94, 22915),

Gene: Nina\_27 Start: 22666, Stop: 23004, Start Num: 38  
Candidate Starts for Nina\_27:  
(Start: 38 @22666 has 45 MA's), (55, 22750), (72, 22825), (81, 22873), (84, 22885), (88, 22909), (94, 22945), (104, 22987),

Gene: Nodigi\_30 Start: 21804, Stop: 22118, Start Num: 38  
Candidate Starts for Nodigi\_30:  
(21, 21729), (Start: 38 @21804 has 45 MA's), (48, 21861), (60, 21915), (65, 21939), (90, 22029),

Gene: ObLaDi\_24 Start: 21632, Stop: 21970, Start Num: 38  
Candidate Starts for ObLaDi\_24:  
(Start: 38 @21632 has 45 MA's), (83, 21848),

Gene: Octobien14\_32 Start: 26679, Stop: 26987, Start Num: 35  
Candidate Starts for Octobien14\_32:  
(Start: 35 @26679 has 15 MA's), (39, 26703), (54, 26766), (58, 26787), (82, 26862),

Gene: Orla\_30 Start: 21808, Stop: 22122, Start Num: 38  
Candidate Starts for Orla\_30:  
(21, 21733), (Start: 38 @21808 has 45 MA's), (48, 21865), (60, 21919), (65, 21943), (75, 21967), (90, 22033),

Gene: Pons\_28 Start: 22536, Stop: 22859, Start Num: 36  
Candidate Starts for Pons\_28:  
(Start: 36 @22536 has 12 MA's), (48, 22596), (71, 22698), (95, 22800),

Gene: PotPie\_27 Start: 22369, Stop: 22692, Start Num: 36  
Candidate Starts for PotPie\_27:  
(Start: 36 @22369 has 12 MA's), (48, 22429), (54, 22453), (71, 22531), (95, 22633),

Gene: PsychoKiller\_26 Start: 21623, Stop: 21964, Start Num: 38  
Candidate Starts for PsychoKiller\_26:  
(Start: 38 @21623 has 45 MA's), (55, 21707), (65, 21758), (81, 21833), (84, 21845), (88, 21869), (94, 21905), (104, 21947),

Gene: Puppies\_26 Start: 20940, Stop: 21272, Start Num: 32  
Candidate Starts for Puppies\_26:

(27, 20934), (Start: 32 @20940 has 2 MA's), (53, 21024), (68, 21099), (75, 21114), (82, 21141), (91, 21183), (99, 21240), (103, 21255),

Gene: Quasar\_26 Start: 22232, Stop: 22573, Start Num: 38

Candidate Starts for Quasar\_26:

(Start: 38 @22232 has 45 MA's), (55, 22316), (65, 22367), (81, 22442), (84, 22454), (88, 22478), (94, 22514), (104, 22556),

Gene: Rabbitrun\_33 Start: 27422, Stop: 27727, Start Num: 35

Candidate Starts for Rabbitrun\_33:

(15, 27293), (16, 27308), (17, 27323), (18, 27326), (19, 27329), (20, 27341), (Start: 35 @27422 has 15 MA's), (39, 27446), (45, 27458), (47, 27464), (48, 27485), (54, 27509), (71, 27572), (82, 27605),

Gene: RanchParmCat\_30 Start: 21691, Stop: 22017, Start Num: 38

Candidate Starts for RanchParmCat\_30:

(24, 21658), (Start: 38 @21691 has 45 MA's), (48, 21748), (54, 21772), (59, 21799), (65, 21823), (97, 21973), (104, 22000),

Gene: RedBaron\_27 Start: 21667, Stop: 22008, Start Num: 38

Candidate Starts for RedBaron\_27:

(Start: 38 @21667 has 45 MA's), (55, 21751), (65, 21802), (81, 21877), (88, 21913), (94, 21949), (104, 21991),

Gene: Sahara\_26 Start: 21963, Stop: 22271, Start Num: 35

Candidate Starts for Sahara\_26:

(Start: 34 @21960 has 15 MA's), (Start: 35 @21963 has 15 MA's), (48, 22026), (82, 22146), (100, 22251),

Gene: Savage\_27 Start: 22288, Stop: 22599, Start Num: 34

Candidate Starts for Savage\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Sephiroth\_31 Start: 25857, Stop: 26165, Start Num: 35

Candidate Starts for Sephiroth\_31:

(Start: 35 @25857 has 15 MA's), (48, 25920), (51, 25929), (54, 25944), (58, 25965), (60, 25971), (82, 26040),

Gene: SheckWes\_27 Start: 21513, Stop: 21836, Start Num: 36

Candidate Starts for SheckWes\_27:

(Start: 36 @21513 has 12 MA's), (48, 21573), (54, 21597), (71, 21675), (95, 21777),

Gene: SilverChicken\_21 Start: 15770, Stop: 16093, Start Num: 33

Candidate Starts for SilverChicken\_21:

(Start: 33 @15770 has 12 MA's), (39, 15803), (41, 15806), (92, 16025), (96, 16049), (100, 16070),

Gene: Sixama\_103 Start: 63600, Stop: 63935, Start Num: 33

Candidate Starts for Sixama\_103:

(Start: 33 @63600 has 12 MA's), (45, 63645), (57, 63714), (63, 63735), (67, 63756), (92, 63867),

Gene: SketchMex\_25 Start: 21276, Stop: 21617, Start Num: 38

Candidate Starts for SketchMex\_25:

(Start: 38 @21276 has 45 MA's), (52, 21345), (54, 21357), (81, 21486), (90, 21531), (94, 21558),



Gene: Socotra\_27 Start: 21623, Stop: 21964, Start Num: 38

Candidate Starts for Socotra\_27:

(Start: 38 @21623 has 45 MA's), (55, 21707), (65, 21758), (81, 21833), (84, 21845), (88, 21869), (94, 21905), (104, 21947),

Gene: SoilAssassin\_27 Start: 22281, Stop: 22592, Start Num: 34

Candidate Starts for SoilAssassin\_27:

(Start: 34 @22281 has 15 MA's), (Start: 35 @22284 has 15 MA's), (48, 22347), (60, 22398), (82, 22467), (100, 22572),

Gene: Soos\_63 Start: 44235, Stop: 44597, Start Num: 23

Candidate Starts for Soos\_63:

(Start: 23 @44235 has 4 MA's), (37, 44292), (51, 44358), (62, 44412), (85, 44499), (101, 44583),

Gene: Sopespian\_26 Start: 21624, Stop: 21965, Start Num: 38

Candidate Starts for Sopespian\_26:

(Start: 38 @21624 has 45 MA's), (55, 21708), (65, 21759), (81, 21834), (84, 21846), (88, 21870), (94, 21906), (104, 21948),

Gene: Soul22\_21 Start: 15768, Stop: 16091, Start Num: 33

Candidate Starts for Soul22\_21:

(Start: 33 @15768 has 12 MA's), (39, 15801), (41, 15804), (92, 16023), (96, 16047), (100, 16068),

Gene: Sproutie\_27 Start: 22288, Stop: 22599, Start Num: 34

Candidate Starts for Sproutie\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Starburst\_27 Start: 21624, Stop: 21965, Start Num: 38

Candidate Starts for Starburst\_27:

(Start: 38 @21624 has 45 MA's), (55, 21708), (65, 21759), (81, 21834), (84, 21846), (88, 21870), (94, 21906), (104, 21948),

Gene: SteamedHams\_28 Start: 21281, Stop: 21622, Start Num: 38

Candidate Starts for SteamedHams\_28:

(Start: 38 @21281 has 45 MA's), (52, 21350), (54, 21362), (55, 21365), (81, 21491), (94, 21563),

Gene: Sting\_66 Start: 44674, Stop: 45036, Start Num: 23

Candidate Starts for Sting\_66:

(Start: 23 @44674 has 4 MA's), (37, 44731), (51, 44797), (62, 44851), (85, 44938), (101, 45022),

Gene: SummitAcademy\_27 Start: 21589, Stop: 21912, Start Num: 36

Candidate Starts for SummitAcademy\_27:

(Start: 36 @21589 has 12 MA's), (48, 21649), (54, 21673), (71, 21751), (84, 21790), (95, 21853),

Gene: Survivors\_28 Start: 22450, Stop: 22791, Start Num: 38

Candidate Starts for Survivors\_28:

(Start: 38 @22450 has 45 MA's), (48, 22507), (52, 22519), (65, 22585), (71, 22606), (78, 22648), (81, 22660), (88, 22696), (89, 22702), (94, 22732),

Gene: SweatNTears\_28 Start: 21544, Stop: 21885, Start Num: 38

Candidate Starts for SweatNTears\_28:

(9, 21370), (10, 21373), (14, 21400), (Start: 38 @21544 has 45 MA's), (48, 21601), (54, 21625), (81, 21754), (90, 21799), (94, 21826),

Gene: Syleon\_31 Start: 25779, Stop: 26087, Start Num: 35

Candidate Starts for Syleon\_31:

(Start: 35 @25779 has 15 MA's), (48, 25842), (51, 25851), (54, 25866), (58, 25887), (60, 25893), (82, 25962),

Gene: Tolls\_28 Start: 21275, Stop: 21616, Start Num: 38

Candidate Starts for Tolls\_28:

(Start: 38 @21275 has 45 MA's), (52, 21344), (54, 21356), (55, 21359), (81, 21485), (94, 21557),

Gene: Tonitrus\_54 Start: 41488, Stop: 41835, Start Num: 28

Candidate Starts for Tonitrus\_54:

(26, 41485), (Start: 28 @41488 has 1 MA's), (40, 41527), (44, 41536), (50, 41569), (54, 41596), (62, 41635), (74, 41677), (75, 41680), (87, 41731), (98, 41800), (101, 41818),

Gene: Trax\_31 Start: 27414, Stop: 27719, Start Num: 35

Candidate Starts for Trax\_31:

(29, 27402), (Start: 35 @27414 has 15 MA's), (45, 27450), (48, 27477), (54, 27501), (58, 27522), (62, 27534), (82, 27597),

Gene: Trine\_25 Start: 20596, Stop: 20931, Start Num: 31

Candidate Starts for Trine\_25:

(Start: 31 @20596 has 3 MA's), (42, 20638), (43, 20641), (56, 20707), (82, 20803), (93, 20866), (95, 20872), (103, 20917),

Gene: Troje\_26 Start: 21258, Stop: 21599, Start Num: 38

Candidate Starts for Troje\_26:

(Start: 38 @21258 has 45 MA's), (52, 21327), (54, 21339), (81, 21468), (90, 21513), (94, 21540),

Gene: TuertoX\_27 Start: 22291, Stop: 22599, Start Num: 35

Candidate Starts for TuertoX\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Typhonomachy\_27 Start: 21656, Stop: 21997, Start Num: 38

Candidate Starts for Typhonomachy\_27:

(Start: 38 @21656 has 45 MA's), (55, 21740), (65, 21791), (81, 21866), (84, 21878), (88, 21902), (94, 21938), (104, 21980),

Gene: Vine\_28 Start: 22510, Stop: 22830, Start Num: 36

Candidate Starts for Vine\_28:

(Start: 36 @22510 has 12 MA's), (49, 22573), (54, 22594), (70, 22669), (71, 22672), (84, 22711),

Gene: Volt\_59 Start: 32404, Stop: 32760, Start Num: 34

Candidate Starts for Volt\_59:

(Start: 34 @32404 has 15 MA's), (47, 32449), (57, 32512), (62, 32530), (66, 32554), (86, 32641), (99, 32725),

Gene: Whiteclaw\_27 Start: 22291, Stop: 22599, Start Num: 35

Candidate Starts for Whiteclaw\_27:

(Start: 34 @22288 has 15 MA's), (Start: 35 @22291 has 15 MA's), (48, 22354), (82, 22474), (100, 22579),

Gene: Widow\_26 Start: 20931, Stop: 21263, Start Num: 32

Candidate Starts for Widow\_26:

(27, 20925), (Start: 32 @20931 has 2 MA's), (53, 21015), (68, 21090), (75, 21105), (82, 21132), (91, 21174), (99, 21231), (103, 21246),

Gene: Yakult\_29 Start: 21409, Stop: 21735, Start Num: 38

Candidate Starts for Yakult\_29:

(7, 21196), (8, 21232), (11, 21244), (12, 21247), (21, 21334), (22, 21346), (Start: 38 @21409 has 45 MA's), (48, 21466), (54, 21490), (59, 21517), (65, 21541), (97, 21691), (104, 21718),

Gene: Yarn\_25 Start: 21298, Stop: 21639, Start Num: 38

Candidate Starts for Yarn\_25:

(Start: 38 @21298 has 45 MA's), (52, 21367), (54, 21379), (55, 21382), (81, 21508), (94, 21580),

Gene: Yeet412\_27 Start: 22281, Stop: 22592, Start Num: 34

Candidate Starts for Yeet412\_27:

(Start: 34 @22281 has 15 MA's), (Start: 35 @22284 has 15 MA's), (48, 22347), (60, 22398), (82, 22467), (100, 22572),

Gene: Yoshi\_21 Start: 15769, Stop: 16092, Start Num: 33

Candidate Starts for Yoshi\_21:

(Start: 33 @15769 has 12 MA's), (39, 15802), (41, 15805), (92, 16024), (96, 16048), (100, 16069),

Gene: Yucky\_29 Start: 22369, Stop: 22689, Start Num: 36

Candidate Starts for Yucky\_29:

(Start: 36 @22369 has 12 MA's), (49, 22432), (54, 22453), (70, 22528), (71, 22531), (84, 22570),

Gene: Yummy\_27 Start: 21211, Stop: 21552, Start Num: 38

Candidate Starts for Yummy\_27:

(Start: 38 @21211 has 45 MA's), (52, 21280), (54, 21292), (55, 21295), (71, 21367), (81, 21421), (84, 21433), (90, 21466), (94, 21493),

Gene: Zapner\_22 Start: 16294, Stop: 16617, Start Num: 33

Candidate Starts for Zapner\_22:

(Start: 33 @16294 has 12 MA's), (39, 16327), (41, 16330), (92, 16549), (96, 16573), (100, 16594),

Gene: Zareef\_30 Start: 22602, Stop: 22943, Start Num: 38

Candidate Starts for Zareef\_30:

(Start: 38 @22602 has 45 MA's), (48, 22659), (52, 22671), (65, 22737), (71, 22758), (78, 22800), (81, 22812), (88, 22848), (94, 22884),

Gene: Ziko\_60 Start: 32344, Stop: 32700, Start Num: 34

Candidate Starts for Ziko\_60:

(Start: 34 @32344 has 15 MA's), (47, 32389), (57, 32452), (62, 32470), (66, 32494), (86, 32581), (99, 32665),