uvig_332456 9252:22839(+)

16 17 18 19 20

21
22 23 24 25

26
2728 29 30 31 32 33 343536

arsinothricin resistance N-acetyltransferase ArsN1 family A (NF040503.1) (CDS_0037) 38 39 40 41 42 43 44 45 46 47 48

IMGVR_UViG_3300045988_105676|3300045988|Ga0495776_032530 9373:20637(+)

20 22 23 24 25 26 27 28 29 30 31 32 33 34

MGV-GENOME-0343069 10511:22517(+)

21 22 24 25

26
27 28 29 30 31 32 33 34 35 3637 38 39

MGV-GENOME-0343630 10218:22069(+)

20 21 23 24 25 26

27
28 29 30 31 32 33 34 35

arsinothricin resistance N-acetyltransferase ArsN1 family A (NF040503.1) (CDS_0036)

37 38 39 40

MGV-GENOME-0334454 9573:21655(+)

17 18 23 24 25 26

arsinothricin resistance N-acetyltransferase ArsN1 family A (NF040503.1) (CDS_0027)
28 29 30 31 32 33 3435 36 37 38 39

MGV-GENOME-0349886 10005:21479(+)

22 23 24 25 26 27 28 29 30 31

32
33

34
3536 37 38 39 40

MGV-GENOME-0324533 10842:20623(+)

23 24 25 26 2728 29 30 31 32

33
34 35 36 37 38 39 40

uvig_111566 7733:20354(+)

18 19 20 21 2223 24 25 26 27 28

29
3031 32 3334 35 36 37 38 39

MGV-GENOME-0328865 7735:20001(+)

18 19 20 2122 23 24 25 26 27

28
2930 31 3233 34 35 36

MGV-GENOME-0367782 8968:20535(+)

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

MGV-GENOME-0320716 8618:21162(+)

21 22 23 24 25 26 27

host RecBCD nuclease inhibitor (CDS_0028)

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30
31
32 33 34 35 36 37 38

MGV-GENOME-0337188 7921:21971(+)

21 22 23

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25 26 27

anti-CRISPR-Cas (AcrIIA7) (CDS_0028)

29

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32
3334 35 36 37 38 39 40 41

MGV-GENOME-0349321 9643:21332(+)

18 19 20 21

22
23 24 2526 27 28

29
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31
3233 34 35 36 37 38 39 40

MGV-GENOME-0341896 11393:22553(+)

25 28 29 30 31 32 33 34

35
36 3738 39 40 41 42 43 44 45 46

MGV-GENOME-0341611 10713:22373(+)

23 24

25
26 27 28 29 30 31 32

33
34 353637 38 39 40 41 42 43

MGV-GENOME-0337758 10714:23022(+)

23 24

25
26 27 28 29 30 31 32

33
34 35

36
37 38 39 40 41 42 43 46 49

uvig_241214 10698:23526(+)

23 24

25
26 27 28 29 30 31

32
33
34 35 36

37
38 39 40 41 42 43 44 45

MGV-GENOME-0354784 10800:21720(+)

24 2526 27 28 29 30 31 32 33

34
35 36

37
38 39 40 41 42 43 44

uvig_132918 10859:21827(+)

24 2526 27 28 29 30 313233 34 35 36 37 38 39 40 41

MGV-GENOME-0333984 10859:21827(+)

24 2526 27 28 29 30 313233 34 35 36 37 38 39 40 41

MGV-GENOME-0350946 8388:22393(+)

19 20 21 22 23 2425 26 27 28

anti-CRISPR-Cas (AcrIIA7) (CDS_0029)
30 3132

arsinothricin resistance N-acetyltransferase ArsN1 family A (NF040503.1) (CDS_0033)

34 35 36 37 38 39 40 41

MGV-GENOME-0372980 10440:22754(+)

exonuclease (CDS_0021)
23 2425 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

MGV-GENOME-0342841 10218:21940(+)

23 24 2526 27 28 29 30 31 32 33 34

35
36

37
38 39 40 41

MGV-GENOME-0326997 10844:19028(+)

23 24 2526 27 28 29 30 31 32 33 34 35

uvig_421391 10003:22183(+)

22 23 24 25 26 27 28

29
30 31 32 33

34
3536 37 38 39 40 41

MGV-GENOME-0331463 9970:22493(+)

22 2324 25 26 27

anti-CRISPR-Cas (AcrIIA7) (CDS_0028)
29 30 31 32

arsinothricin resistance N-acetyltransferase ArsN1 family A (NF040503.1) (CDS_0033)

34 35 3637 39 40

MGV-GENOME-0368019 10157:21730(+)

22 23 24 25 26 27 28 29 30 31

32
33 34

35
3637 38 39 40

MGV-GENOME-0345429 9852:22999(+)

21 2223 24 25 26 27 28 29

30
31 32

33
3435 36

37
38 39 40 41 47

MGV-GENOME-0330845 10933:22487(+)

24 25 26 27 28 29

30
31 32 33 34 35 36 37 38 43

MGV-GENOME-0342067 7092:17002(+)

20 21 22 23 24 25 26 27 28

29
3031 32 33

MGV-GENOME-0332710 8193:20489(+)

13 18

exonuclease (CDS_0019)
20 21 22 2324 25 26

27
28

anti-CRISPR-Cas (AcrIIA7) (CDS_0029)

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arsinothricin resistance N-acetyltransferase ArsN1 family A (NF040503.1) (CDS_0032)

33 34 35 36 37

MGV-GENOME-0336494 10858:21420(+)

23 24

25
26 27 28 29 30 31 32 33 34

35
36 37

MGV-GENOME-0354957 15797:20251(+)

29 30 31 3233 34

MGV-GENOME-0354509 18029:22787(+)

36 37 38 39 40

MGV-GENOME-0371160 17381:23307(+)

39 40 4142 43 44 45

IMGVR_UViG_3300045988_086181|3300045988|Ga0495776_184331 15605:20439(+)

32 33 34 35 36 37 38 39

IMGVR_UViG_3300045988_055764|3300045988|Ga0495776_176260 17848:22071(+)

38 39 40 41 42

IMGVR_UViG_3300045988_074891|3300045988|Ga0495776_150874 16827:20687(+)

CDS_0038
CDS_0039

CDS_0040

CDS_0041

MGV-GENOME-0349283 16620:20665(+)

36 37 38 39 40

IMGVR_UViG_3300045988_104360|3300045988|Ga0495776_180578 16421:21313(+)

36 37 38 39 40 41

MGV-GENOME-0350563 17136:22233(+)

37 3839 40 41 42 43

uvig_76948 17161:21478(+)

CDS_0037

CDS_0038
CDS_0039

CDS_0040

MGV-GENOME-0350650 18259:21577(+)

CDS_0029 CDS_0030

IMGVR_UViG_3300045988_063732|3300045988|Ga0495776_149989 17353:21309(+)

34 35 36 37 38

MGV-GENOME-0343745 17353:21309(+)

34 35 36 37 38

IMGVR_UViG_3300045988_080660|3300045988|Ga0495776_118411 17805:23067(+)

39 40 41 42 43 44 45 46

IMGVR_UViG_3300045988_081712|3300045988|Ga0495776_004107 16379:21981(+)

36 37 38 39 40 41 42 43

uvig_37958 17153:23044(+)

34 35 3637 38 39 40 41

MGV-GENOME-0347681 14403:20281(+)

26 27 2829 30 31 32 33

MGV-GENOME-0356663 18060:22697(+)

3839 40 41 42 43 44 45

MGV-GENOME-0375588 16494:20035(+)

CDS_0033
CDS_0034

uvig_349143 18579:22883(+)

CDS_0039

CDS_0040
CDS_0041

MGV-GENOME-0356904 17883:21423(+)

CDS_0034

CDS_0035
CDS_0036
CDS_0037

IMGVR_UViG_3300045988_084162|3300045988|Ga0495776_149702 18379:22648(+)

CDS_0034
CDS_0035
CDS_0036

CDS_0037

uvig_29988 8004:21085(+)

21 22 23

24
25 26 27 28 29 3031 32 33 34 35

tRNA splicing ligase (CDS_0036)
37 3839

MGV-GENOME-0334052 7921:21045(+)

20 21 22

23
24 25 26 27 28 29 30

arsinothricin resistance N-acetyltransferase ArsN1 family A (NF040503.1) (CDS_0031)

3233 34

35
36

tRNA splicing ligase (CDS_0037)

38 3940

MGV-GENOME-0368483 15846:21093(+)

35 36

37
38

tRNA splicing ligase (CDS_0039)

40 4142

uvig_589990 18195:22746(+)

CDS_0036

CDS_0037

CDS_0038

CDS_0039

CDS_0041

SAMN11893696_a1_ct21947_vs1 16659:21627(+)

3132 33

34
35

MGV-GENOME-0329500 10005:18711(+)

22 23 24

25
26 27

28
2930 31 32 33

5000 nt

DNA, RNA and nucleotide metabolism head and packaging moron, auxiliary metabolic gene and host takeover unknown function Anti-defence AMR