
Gene presence per genus in Proteobacteria (phylum) (1/12)
Sum
'Geomonas' Khan et al. 2020
'Geomonas' Xu et al. 2019
Abyssibacter
Acetobacter
Achromatium
Achromobacter
Acidibrevibacterium
Acidiferrobacter
Acidihalobacter
Acidimangrovimonas
Acidiphilium
Acidisoma
Acidisphaera
Acidithiobacillus
Acidocella
Acidomonas
Acidovorax
Acinetobacter
Actibacterium
Actinobacillus
Acuticoccus
Advenella
Aeromonas
Aestuariibacter
Aestuariisphingobium
Aestuariispira
Aestuariivirga
Aestuariivita
Afifella
Afipia
Agaribacterium
Agarilytica
Agarivorans
Aggregatibacter
Aggregicoccus
Agrobacterium
Ahniella
Ahrensia
Aidingimonas
Albidovulum
Albimonas
Alcaligenes
Alcanivorax
Algicola
Alginatibacterium
Algiphilus
Aliagarivorans
Alicycliphilus
Aliiarcobacter
Aliidiomarina
Aliiglaciecola
Aliihoeflea
Aliikangiella
Aliiroseovarius
Aliishimia
Aliivibrio
Alishewanella
Alkalilacustris
Alkalilimnicola
Alkalimonas
Alkalispirillum
Alkanindiges
Allochromatium
Allofrancisella
Alsobacter
Altererythrobacter
Alteromonas
Alysiella
Amantichitinum
Amaricoccus
Aminobacter
Amorphus
Amphiplicatus
Amphritea
Amylibacter
Anaerobiospirillum
Anaeromyxobacter
Anaplasma
Ancylobacter
Anderseniella
Andreprevotia
Antarctobacter
Aquabacter
Aquabacterium
Aquamicrobium
Aquaspirillum
Aquicella
Aquicoccus
Aquidulcibacter
Aquimixticola
Aquimonas
Aquincola
Aquisalimonas
Aquitalea
Arboricoccus
Archangium
Arcobacter
Arenicella
Arenimonas
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN2_AB
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1_2
LinkerHistone
Histone
8
6
4
2
0


Gene presence per genus in Proteobacteria (phylum) (2/12)
Arhodomonas
Aromatoleum
Arsenicitalea
Arsenophonus
Arsukibacterium
Asaia
Ascidiaceihabitans
Asticcacaulis
Atlantibacter
Aurantimonas
Aureimonas
Avibacterium
Azoarcus
Azohydromonas
Azomonas
Azonexus
Azorhizobium
Azospira
Azospirillum
Azotobacter
Azovibrio
Bacterioplanes
Bacteriovorax
Balneatrix
Bartonella
Basfia
Basilea
Bauldia
Bdellovibrio
Beggiatoa
Beijerinckia
Belnapia
Bergeriella
Bermanella
Bibersteinia
Bilophila
Biostraticola
Bisgaardia
Blastochloris
Blastomonas
Bombella
Bordetella
Bosea
Boseongicola
Bowmanella
Brachymonas
Brackiella
Bradymonas
Bradyrhizobium
Brenneria
Breoghania
Brevirhabdus
Brevundimonas
Brucella
Buchnera
Budvicia
Burkholderia
Buttiauxella
Caballeronia
Caedibacter
Caedimonas
Caenimonas
Caenispirillum
Caldimonas
Camelimonas
Caminibacter
Campylobacter
Candidatus Accumulibacter
Candidatus Aquarickettsia
Candidatus Berkiella
Candidatus Blochmannia
Candidatus Competibacter
Candidatus Contendobacter
Candidatus Dactylopiibacterium
Candidatus Deianiraea
Candidatus Desulfofervidus
Candidatus Doolittlea
Candidatus Endolissoclinum
Candidatus Finniella
Candidatus Fokinia
Candidatus Fonsibacter
Candidatus Fukatsuia
Candidatus Glomeribacter
Candidatus Gullanella
Candidatus Hamiltonella
Candidatus Hepatobacter
Candidatus Ishikawaella
Candidatus Jidaibacter
Candidatus Kinetoplastibacterium
Candidatus Macondimonas
Candidatus Magnetaquicoccus
Candidatus Marithrix
Candidatus Methylopumilus
Candidatus Methylospira
Candidatus Micropelagos
Candidatus Midichloria
Candidatus Moranella
Candidatus Neoehrlichia
Candidatus Nitrosoglobus
Candidatus Nucleicultrix
0
2
4
6
8
LinkerHistone
Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
Hist_deacetyl
SIR2
DOT1
SET
CupinJmjC
SWIRM
ADD_ATRX
ADD_DNMT3
BAH
BIR
Bromodomain
Chromo
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
zf-CW
YEATS
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCCH
zf-CCCH_4
UBN2_2
Nucleoplasmin
ATF7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
AF9
PCRing
YAF2_RYBP
SAM
SLED
Suz12
CAF1C
Kelch
zf-C2H2
zf-CXXC
WD40

Gene presence per genus in Proteobacteria (phylum) (3/12)
Candidatus Odyssella
Candidatus Paracaedibacter
Candidatus Pelagibacter
Candidatus Phaeomarinobacter
Candidatus Photodesmus
Candidatus Phycorickettsia
Candidatus Phycosocius
Candidatus Profftella
Candidatus Puniceispirillum
Candidatus Regiella
Candidatus Ruthia
Candidatus Schmidhempelia
Candidatus Sneabacter
Candidatus Symbiobacter
Candidatus Tachikawaea
Candidatus Thiodiazotropha
Candidatus Thioglobus
Candidatus Thiosymbion
Candidatus Tokpelaia
Candidimonas
Cardiobacterium
Carideicomes
Carnimonas
Casimicrobium
Castellaniella
Catenovulum
Caulobacter
Caviibacterium
Cedecea
Celeribacter
Celerinatantimonas
Cellvibrio
Cereibacter
Cetia
Chachezhania
Chakrabartia
Chania
Chelativorans
Chelatococcus
Chelonobacter
Chitinibacter
Chitinilyticum
Chitinimonas
Chitiniphilus
Chitinivorax
Chitinolyticbacter
Chondromyces
Chromatium
Chromatocurvus
Chromobacterium
Chromohalobacter
Ciceribacter
Citreicella
Citreimonas
Citrobacter
Citromicrobium
Cobetia
Cocleimonas
Cognatishimia
Cognatiyoonia
Cohaesibacter
Collimonas
Colwellia
Comamonas
Commensalibacter
Conchiformibius
Confluentimicrobium
Congregibacter
Conservatibacter
Consotaella
Corallincola
Corallococcus
Corticibacter
Corticimicrobacter
Cosenzaea
Coxiella
Crenalkalicoccus
Crenobacter
Crenothrix
Cribrihabitans
Cricetibacter
Croceibacterium
Croceicoccus
Cronobacter
Cucumibacter
Cupriavidus
Curvibacter
Cycloclasticus
Cysteiniphilum
Cystobacter
Dakarella
Dankookia
Dasania
Dechloromonas
Deefgea
Defluviimonas
Delftia
Denitratisoma
Denitromonas
Derxia
0
2
4
6
8
LinkerHistone
Histone
Acetyltransf_1
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HatI_N
KAT11
MOZ_SAS
SIR2
Hist_deacetyl
SET
DOT1
CupinJmjC
SWIRM
ADD_DNMT3
ADD_ATRX
BAH
BIR
Chromodomain
Chromo
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
zf-CW
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCHH
UBN_AB
Nucleoplasmin
AT7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
AF9
PCRing
YAF2_RYBP
SAM
SLED
Suz12
CAF1C
Kelch
zf-C2H2
zf-CXXC
WD40

Gene presence per genus in Proteobacteria (phylum) (4/12)
Desulfacinum
Desulfamplus
Desulfarculus
Desulfatibacillum
Desulfatiglans
Desulfatirhabdium
Desulfatitalea
Desulfobacca
Desulfobacter
Desulfobacterium
Desulfobacula
Desulfobotulus
Desulfobulbus
Desulfocapsa
Desulfocarbo
Desulfococcus
Desulfocurvibacter
Desulfocurvus
Desulfofaba
Desulfofustis
Desulfoglaeba
Desulfohalobium
Desulfohalovibrio
Desulfoluna
Desulfomicrobium
Desulfomonile
Desulfonatronospira
Desulfonatronovibrio
Desulfonatronum
Desulfonauticus
Desulfonema
Desulfopila
Desulfoplanes
Desulforegula
Desulforhopalus
Desulfosarcina
Desulfosoma
Desulfospira
Desulfotalea
Desulfothermus
Desulfotignum
Desulfovermiculus
Desulfovibrio
Desulfurella
Desulfurivibrio
Desulfuromonas
Desulfuromusa
Dethiosulfatarculus
Devosia
Diaphorobacter
Dichelobacter
Dichotomicrobium
Dickeya
Dinoroseobacter
Dissulfuribacter
Dissulfurirhabdus
Dokdonella
Donghicola
Dongia
Duganella
Duodenibacillus
Dyella
Ectothiorhodosinus
Ectothiorhodospira
Edaphovirga
Edwardsiella
Ehrlichia
Eikenella
Eilatimonas
Elioraea
Elstera
Emcibacter
Endozoicomonas
Enhydrobacter
Enhygromyxa
Ensifer
Enterobacillus
Enterobacter
Enterovibrio
Enterovirga
Eoetvoesia
Ephemeroptericola
Epibacterium
Erwinia
Erythrobacter
Erythromicrobium
Escherichia
Euryhalocaulis
Ewingella
Extensimonas
Falsirhodobacter
Falsochrobactrum
Fangia
Fastidiosibacter
Ferrimonas
Ferriphaselus
Ferrovum
Ferruginivarius
Fertoebacter
Filomicrobium
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Mmm1
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
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SSrecog
SPT16
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Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TUDOR
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
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GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone
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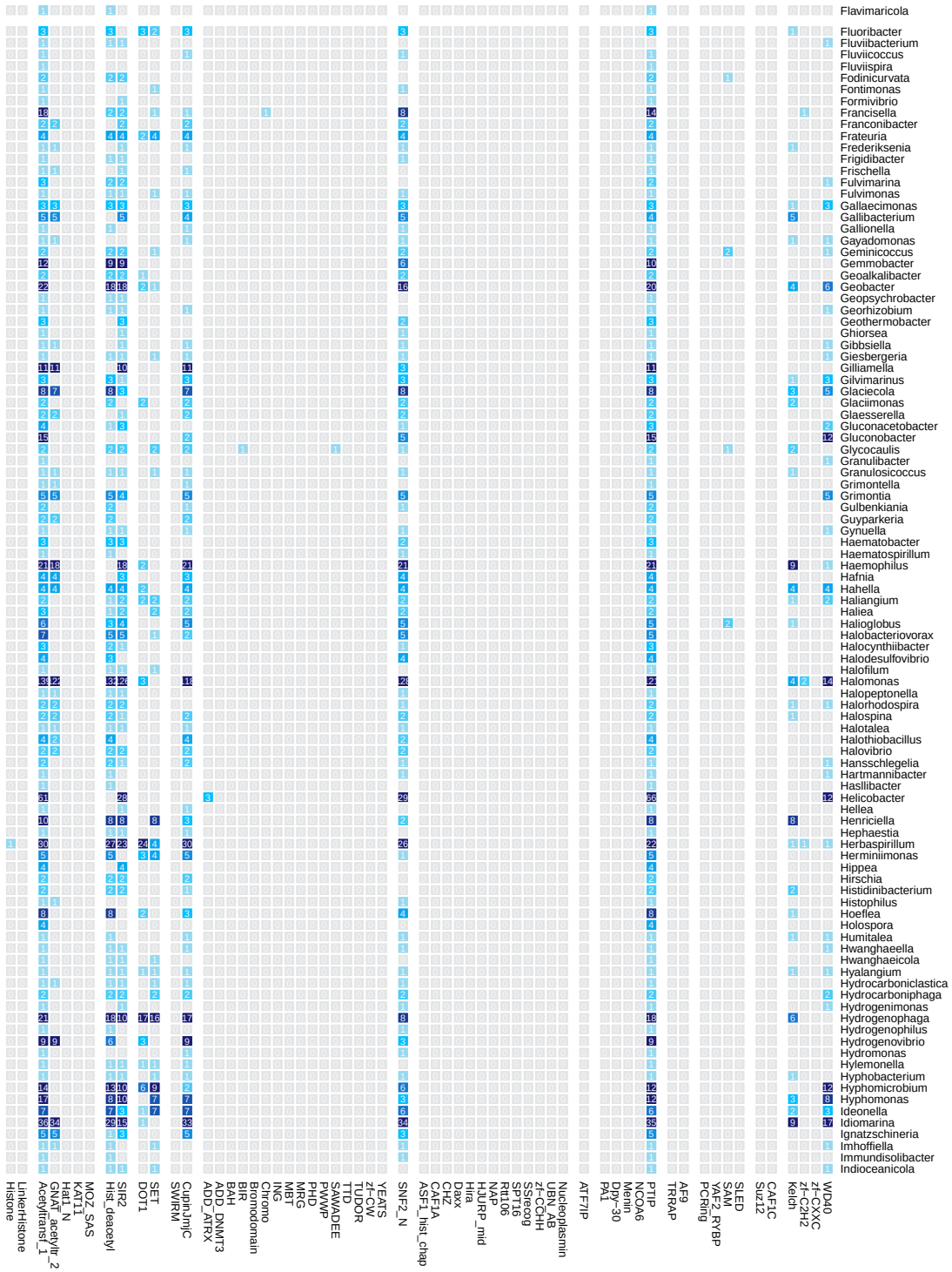
Gene presence per genus in Proteobacteria (phylum) (5/12)
Flavimaricola
Fluoribacter
Fluviibacterium
Fluviicoccus
Fluviispira
Fodinicurvata
Fontimonas
Formivibrio
Francisella
Franconibacter
Frateuria
Frederiksenia
Frigidibacter
Frischella
Fulvimarina
Fulvimonas
Gallaecimonas
Gallibacterium
Gallionella
Gayadomonas
Geminicoccus
Gemmobacter
Geoalkalibacter
Geobacter
Geopsychrobacter
Georhizobium
Geothermobacter
Ghiorsea
Gibbsiella
Giesbergeria
Gilliamella
Gilvimarinus
Glaciecola
Glaciimonas
Glaesserella
Gluconacetobacter
Gluconobacter
Glycocaulis
Granulibacter
Granulosicoccus
Grimontella
Grimontia
Gulbenkiania
Guyparkeria
Gynuella
Haematobacter
Haematospirillum
Haemophilus
Hafnia
Hahella
Haliangium
Haliea
Halioglobus
Halobacteriovorax
Halocynthiibacter
Halodesulfovibrio
Halofilum
Halomonas
Halopeptonella
Halorhodospira
Halospina
Halotalea
Halothiobacillus
Halovibrio
Hansschlegelia
Hartmannibacter
Hasllibacter
Helicobacter
Hellea
Henriciella
Hephaestia
Herbaspirillum
Herminiimonas
Hippea
Hirschia
Histidinibacterium
Histophilus
Hoeflea
Holospora
Humitalea
Hwanghaeella
Hwanghaeicola
Hyalangium
Hydrocarboniclastica
Hydrocarboniphaga
Hydrogenimonas
Hydrogenophaga
Hydrogenophilus
Hydrogenovibrio
Hydromonas
Hylemonella
Hyphobacterium
Hyphomicrobium
Hyphomonas
Ideonella
Idiomarina
Ignatzschineria
Imhoffiella
Immundisolibacter
Indioceanicola
0
2
4
6
8
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
DPY-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MBT
MRG
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
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MOZ_SAS
KAT11
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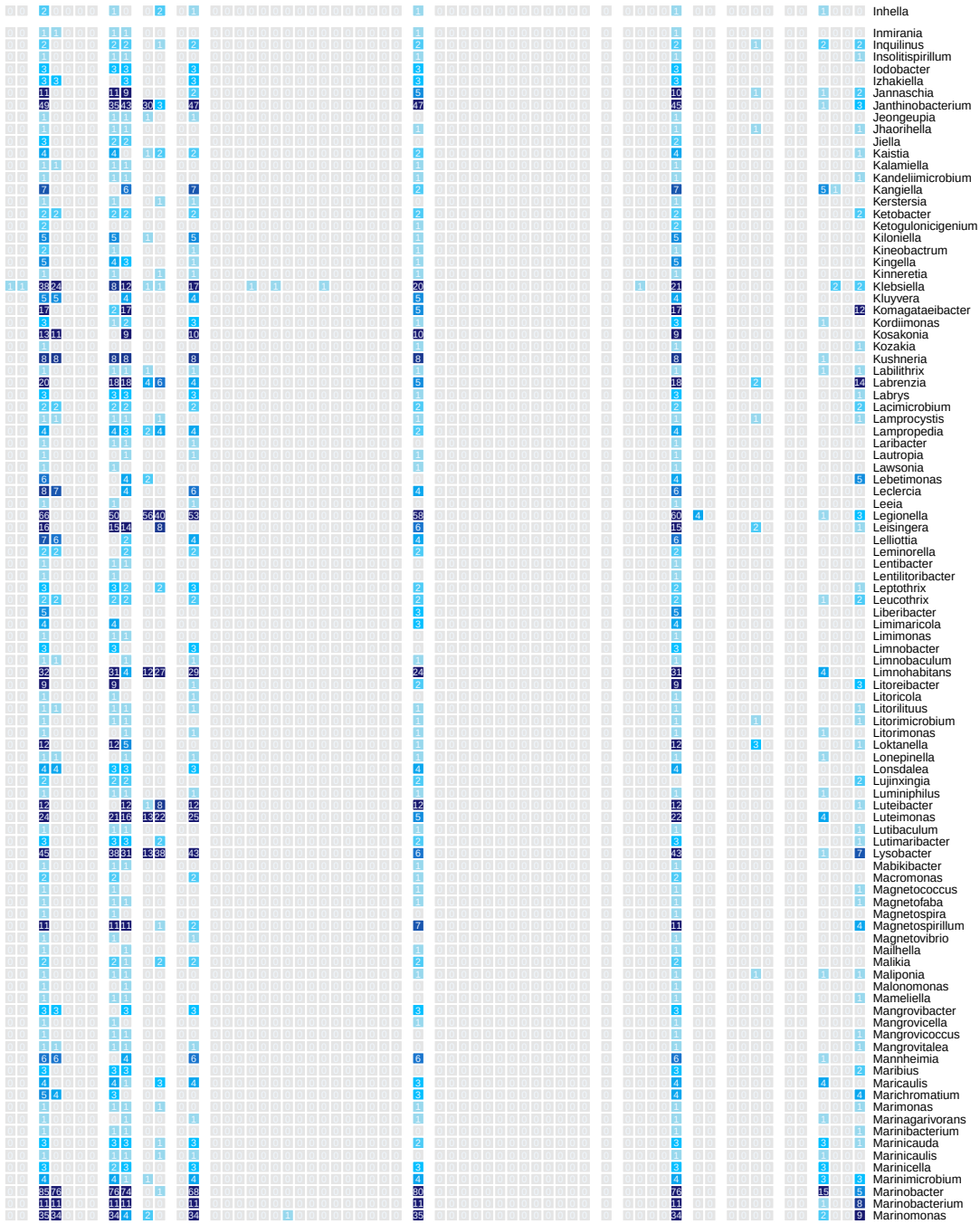
Histone


Gene presence per genus in Proteobacteria (phylum) (6/12)
Inhella
Inmirania
Inquilinus
Insolitispirillum
Iodobacter
Izhakiella
Jannaschia
Janthinobacterium
Jeongeupia
Jhaorihella
Jiella
Kaistia
Kalamiella
Kandeliimicrobium
Kangiella
Kerstersia
Ketobacter
Ketogulonicigenium
Kiloniella
Kineobactrum
Kingella
Kinneretia
Klebsiella
Kluyvera
Komagataeibacter
Kordiimonas
Kosakonia
Kozakia
Kushneria
Labilithrix
Labrenzia
Labrys
Lacimicrobium
Lamprocystis
Lampropedia
Laribacter
Lautropia
Lawsonia
Lebetimonas
Leclercia
Leeia
Legionella
Leisingera
Lelliottia
Leminorella
Lentibacter
Lentilitoribacter
Leptothrix
Leucothrix
Liberibacter
Limimaricola
Limimonas
Limnobacter
Limnobaculum
Limnohabitans
Litoreibacter
Litoricola
Litorilituus
Litorimicrobium
Litorimonas
Loktanella
Lonepinella
Lonsdalea
Lujinxingia
Luminiphilus
Luteibacter
Luteimonas
Lutibaculum
Lutimaribacter
Lysobacter
Mabikibacter
Macromonas
Magnetococcus
Magnetofaba
Magnetospira
Magnetospirillum
Magnetovibrio
Mailhella
Malikia
Maliponia
Malonomonas
Mameliella
Mangrovibacter
Mangrovicella
Mangrovicoccus
Mangrovitalea
Mannheimia
Maribius
Maricaulis
Marichromatium
Marimonas
Marinagarivorans
Marinibacterium
Marinicauda
Marinicaulis
Marinicella
Marinimicrobium
Marinobacter
Marinobacterium
Marinomonas
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Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
Hist_deacetyl
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DOT1
SET
CupinJmjC
SWIRM
ADD_ATRX
ADD_DNMT3
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BIR
Bromodomain
Chromo
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
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CHZ
Daxx
HJURP_mid
Hira
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Rtt106
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zf-CCHC
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Nucleoplasmin
ATF7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
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Suz12
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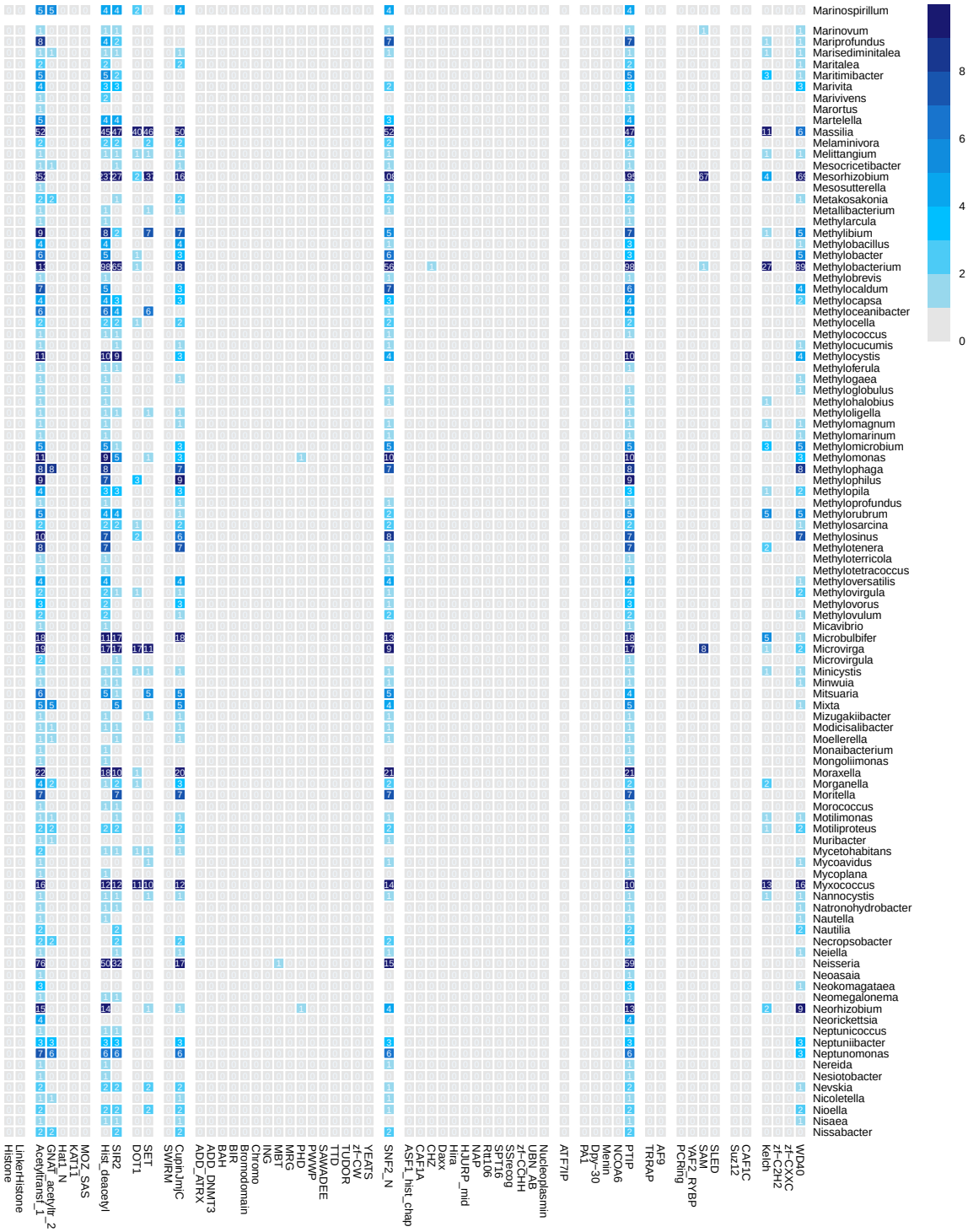
Kelch
zf-C2H2
zf-CXXC
WD40


Gene presence per genus in Proteobacteria (phylum) (7/12)
Marinospirillum
Marinovum
Mariprofundus
Marisediminitalea
Maritalea
Maritimibacter
Marivita
Marivivens
Marortus
Martelella
Massilia
Melaminivora
Melittangium
Mesocricetibacter
Mesorhizobium
Mesosutterella
Metakosakonia
Metallibacterium
Methylarcula
Methylibium
Methylobacillus
Methylobacter
Methylobacterium
Methylobrevis
Methylocaldum
Methylocapsa
Methyloceanibacter
Methylocella
Methylococcus
Methylocucumis
Methylocystis
Methyloferula
Methylogaea
Methyloglobulus
Methylohalobius
Methyloligella
Methylomagnum
Methylomarinum
Methylomicrobium
Methylomonas
Methylophaga
Methylophilus
Methylopila
Methyloprofundus
Methylorubrum
Methylosarcina
Methylosinus
Methylotenera
Methyloterricola
Methylotetracoccus
Methyloversatilis
Methylovirgula
Methylovorus
Methylovulum
Micavibrio
Microbulbifer
Microvirga
Microvirgula
Minicystis
Minwuia
Mitsuaria
Mixta
Mizugakiibacter
Modicisalibacter
Moellerella
Monaibacterium
Mongoliimonas
Moraxella
Morganella
Moritella
Morococcus
Motilimonas
Motiliproteus
Muribacter
Mycetohabitans
Mycoavidus
Mycoplana
Myxococcus
Nannocystis
Natronohydrobacter
Nautella
Nautilia
Necropsobacter
Neiella
Neisseria
Neoasaia
Neokomagataea
Neomegalonema
Neorhizobium
Neorickettsia
Neptunicoccus
Neptuniibacter
Neptunomonas
Nereida
Nesiotobacter
Nevskia
Nicoletella
Niella
Nisaea
Nissabacter
8
6
4
2
0
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
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Rtt106
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Hira
DaxX
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
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zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
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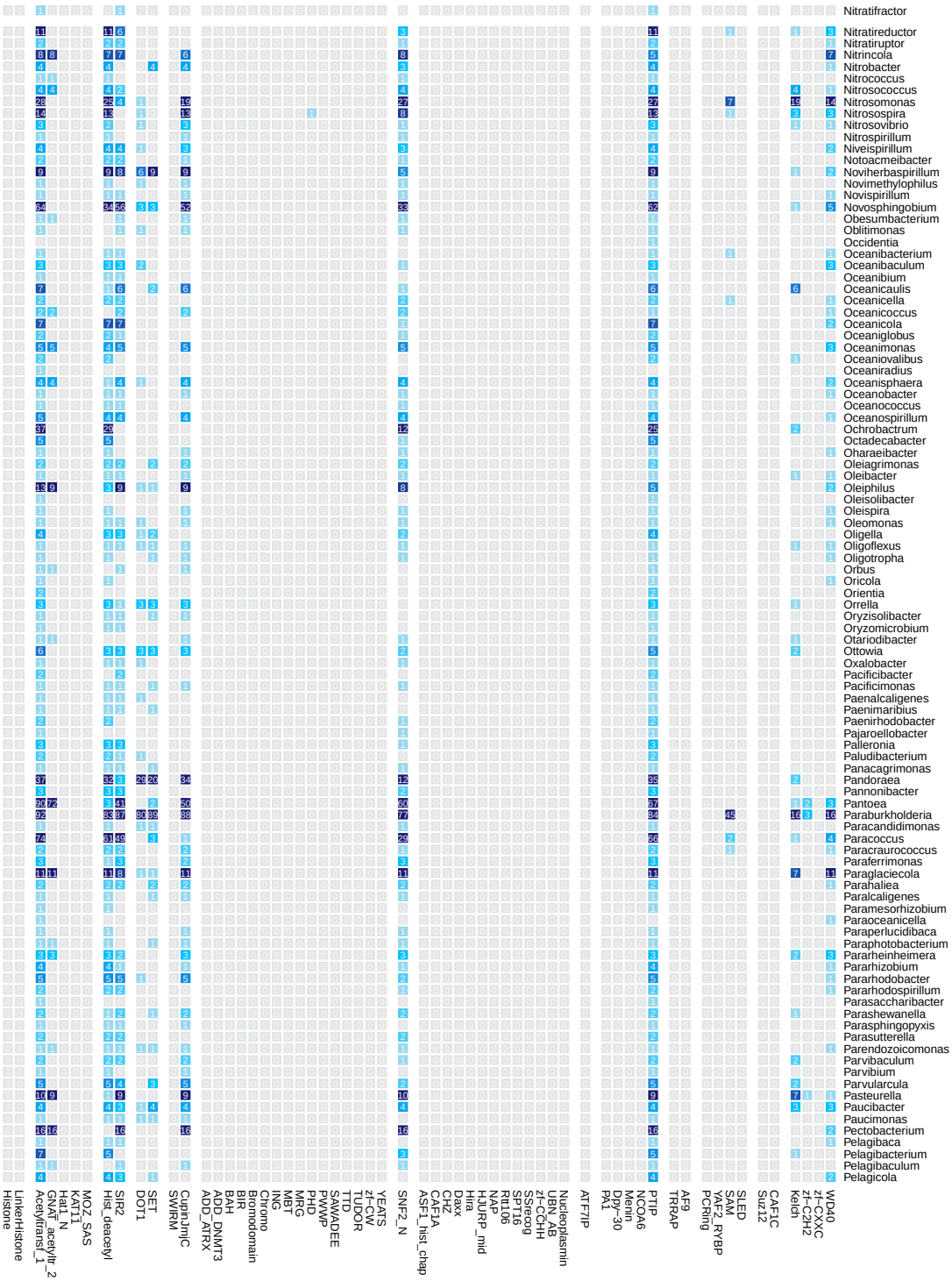
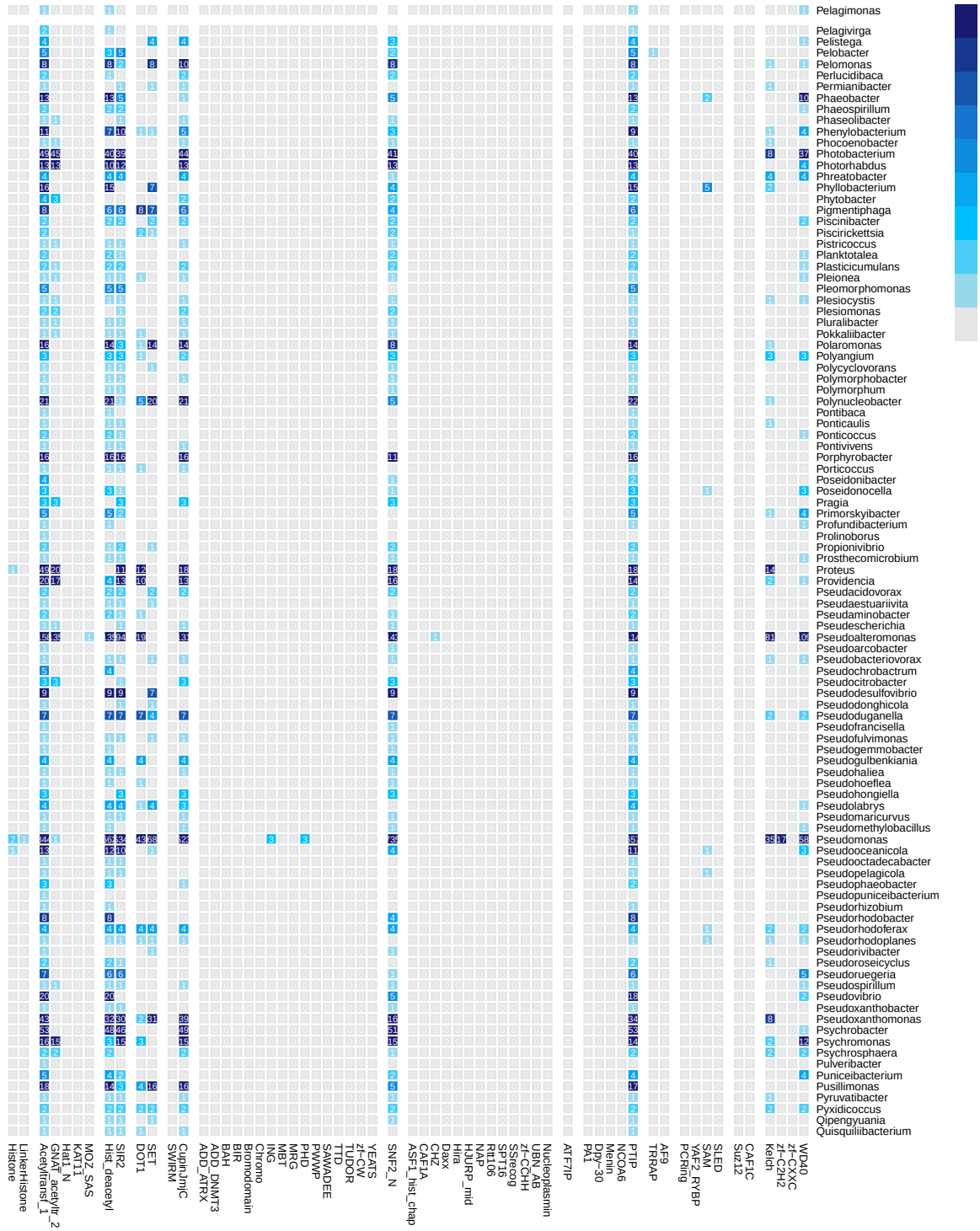
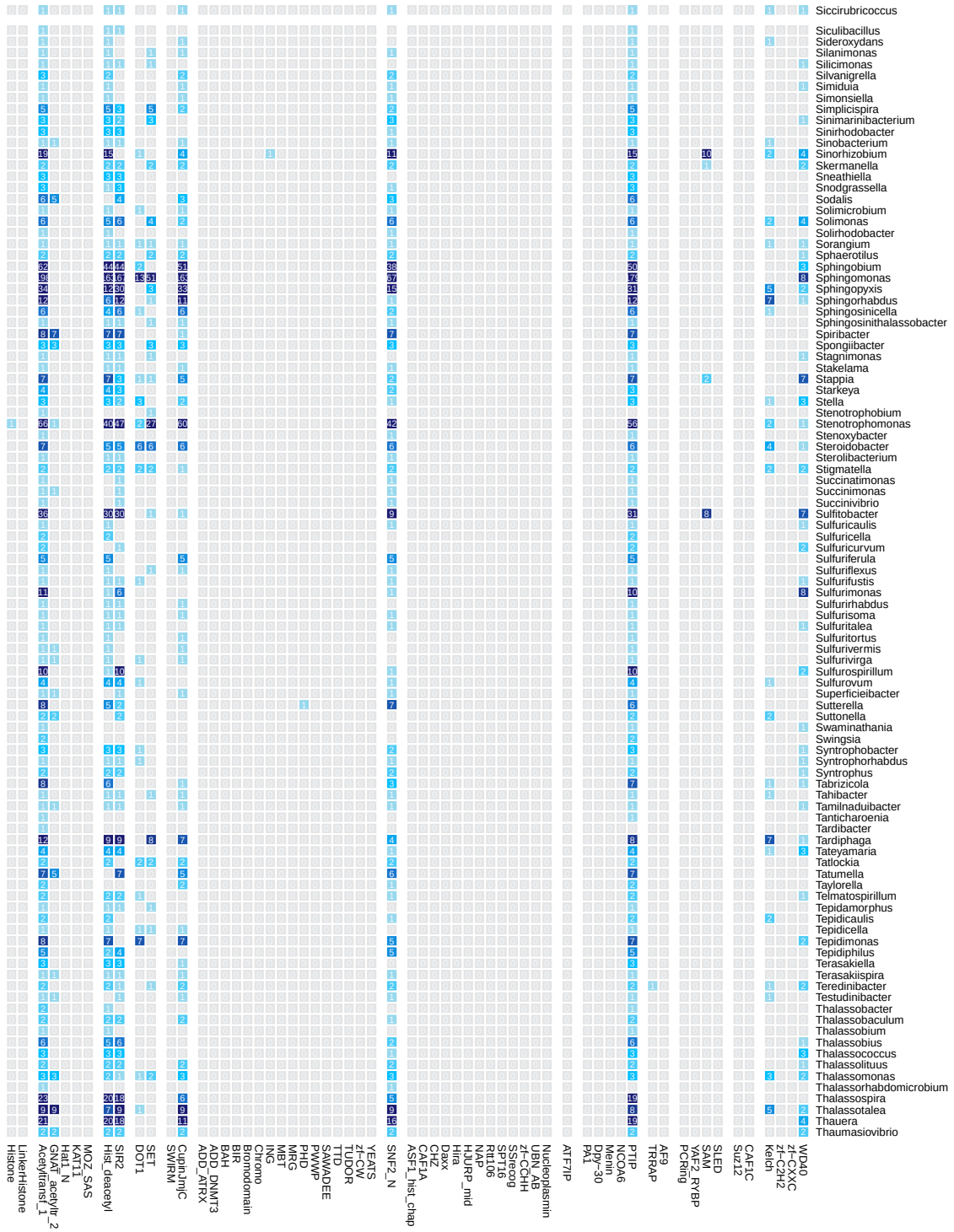
Acetyltransf_1
LinkerHistone
Histone

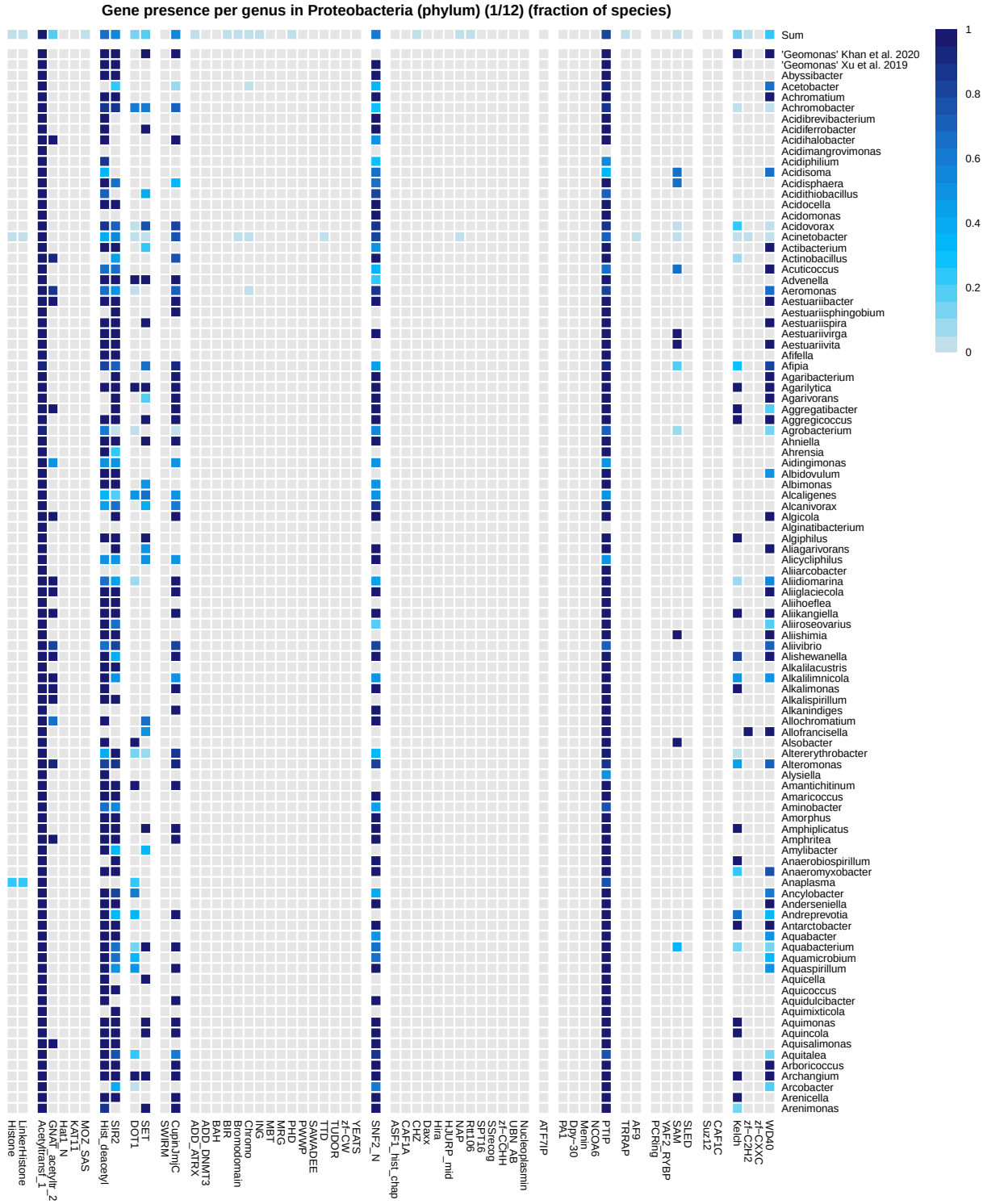

Gene presence per genus in Proteobacteria (phylum) (8/12)
0
2
4
6
8
Nitratifractor
Nitratireductor
Nitratiruptor
Nitrincola
Nitrobacter
Nitrococcus
Nitrosococcus
Nitrosomonas
Nitrosospira
Nitrosovibrio
Nitrospirillum
Niveispirillum
Notoacmeibacter
Noviherbaspirillum
Novimethylophilus
Novispirillum
Novosphingobium
Obesumbacterium
Oblitimonas
Occidentia
Oceanibacterium
Oceanibaculum
Oceanibium
Oceanicaulis
Oceanicella
Oceanicoccus
Oceanicola
Oceaniglobus
Oceanimonas
Oceaniovalibus
Oceaniradius
Oceanisphaera
Oceanobacter
Oceanococcus
Oceanospirillum
Ochrobactrum
Octadecabacter
Oharaeibacter
Oleiagrimonas
Oleibacter
Oleiphilus
Oleisolibacter
Oleispira
Oleomonas
Oligella
Oligoflexus
Oligotropha
Orbus
Oricola
Orientia
Orrella
Oryzisolibacter
Oryzomicrobium
Otariodibacter
Ottowia
Oxalobacter
Pacificibacter
Pacificimonas
Paenalcaligenes
Paenimaribius
Paenirhodobacter
Pajaroellobacter
Palleronia
Paludibacterium
Panacagrimonas
Pandoraea
Pannonibacter
Pantoea
Paraburkholderia
Paracandidimonas
Paracoccus
Paracraurococcus
Paraferrimonas
Paraglaciecola
Parahaliea
Paralcaligenes
Paramesorhizobium
Paraoceanicella
Paraperlucidibaca
Paraphotobacterium
Pararheinheimera
Pararhizobium
Pararhodobacter
Pararhodospirillum
Parasaccharibacter
Parashewanella
Parasphingopyxis
Parasutterella
Parendozoicomonas
Parvibaculum
Parvibium
Parvularcula
Pasteurella
Paucibacter
Paucimonas
Pectobacterium
Pelagibaca
Pelagibacterium
Pelagibaculum
Pelagicola
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
RRM_DBD
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
HAT1_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone


Gene presence per genus in Proteobacteria (phylum) (9/12)
Pelagimonas
Pelagivirga
Pelistega
Pelobacter
Pelomonas
Perlucidibaca
Permianibacter
Phaeobacter
Phaeospirillum
Phaseolibacter
Phenylobacterium
Phocoenobacter
Photobacterium
Photorhabdus
Phreatobacter
Phyllobacterium
Phytobacter
Pigmentiphaga
Piscinibacter
Piscirickettsia
Pistricoccus
Planktotalea
Plasticicumulans
Pleionea
Pleomorphomonas
Plesiocystis
Plesiomonas
Pluralibacter
Pokkaliibacter
Polaromonas
Polyangium
Polycyclovorans
Polymorphobacter
Polymorphum
Polynucleobacter
Pontibaca
Ponticaulis
Ponticoccus
Pontivivens
Porphyrobacter
Porticoccus
Poseidonibacter
Poseidonocella
Pragia
Primorskyibacter
Profundibacterium
Prolinoborus
Propionivibrio
Prosthecomicrobium
Proteus
Providencia
Pseudacidovorax
Pseudaestuariivita
Pseudaminobacter
Pseudescherichia
Pseudoalteromonas
Pseudoarcobacter
Pseudobacteriovorax
Pseudochrobactrum
Pseudocitrobacter
Pseudodesulfovibrio
Pseudodonghicola
Pseudoduganella
Pseudofrancisella
Pseudofulvimonas
Pseudogemmobacter
Pseudogulbenkiania
Pseudohaliea
Pseudohoeflea
Pseudohongiella
Pseudolabrys
Pseudomaricurvus
Pseudomethylobacillus
Pseudomonas
Pseudooceanicola
Pseudooctadecabacter
Pseudopelagicola
Pseudophaeobacter
Pseudopuniceibacterium
Pseudorhizobium
Pseudorhodobacter
Pseudorhodoferax
Pseudorhodoplanes
Pseudorivibacter
Pseudoroseicyclus
Pseudoruegeria
Pseudospirillum
Pseudovibrio
Pseudoxanthobacter
Pseudoxanthomonas
Psychrobacter
Psychromonas
Psychrosphaera
Pulveribacter
Puniceibacterium
Pusillimonas
Pyruvatibacter
Pyxidicoccus
Qipengyuania
Quisquiliibacterium
0
2
4
6
8
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSF109
RtL106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone

Gene presence per genus in Proteobacteria (phylum) (10/12)
Rahnella
Ralstonia
Ramlibacter
Raoultella
Rappaport
Reinekea
Reyranella
Rheinheimera
Rhizobacter
Rhizobium
Rhizorhabdus
Rhodanobacter
Rhodobaca
Rhodobacter
Rhodobium
Rhodoblastus
Rhodocyclus
Rhodoferax
Rhodoligotrophos
Rhodomicrobium
Rhodophyticola
Rhodopila
Rhodoplanes
Rhodopseudomonas
Rhodosalinus
Rhodospira
Rhodospirillum
Rhodothalassium
Rhodovarius
Rhodovastum
Rhodovibrio
Rhodovulum
Rickettsia
Rickettsiella
Rivibacter
Rivicola
Robbsia
Robiginitomaculum
Rodentibacter
Roseateles
Roseiarcus
Roseibaca
Roseibacterium
Roseibium
Roseicitreum
Roseicyclus
Roseinatronobacter
Roseisalinus
Roseitalea
Roseivivax
Rosenbergiella
Roseobacter
Roseococcus
Roseomonas
Roseospira
Roseospirillum
Roseovarius
Rouxiella
Rubellimicrobium
Rubrimonas
Rubritepida
Rubrivivax
Rudaea
Ruegeria
Rugamonas
Ruminobacter
Saccharibacter
Saccharophagus
Saccharospirillum
Saezia
Sagittula
Salaquimonas
Salinarimonas
Salinibius
Salinicola
Salinihabitans
Salinimonas
Saliniradius
Salinisphaera
Salinivibrio
Salipiger
Salmonella
Samsonia
Sandaracinobacter
Sandaracinus
Sandarakinorhabdus
Sansalvadorimonas
Sapientia
Schlegelella
Sedimenticola
Sedimentitalea
Sediminimonas
Serpentinomonas
Serratia
Shewanella
Shigella
Shimia
Shimwellia
Shinella
Siccibacter
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
PTIP
NCOA6
Menin
DDB_G
PA1
AF9
TRRAP
YAF2_RYBP
PCRing
SLED
SAM
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HAUSP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MBT
MRG
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone
0
2
4
6
8


Gene presence per genus in Proteobacteria (phylum) (11/12)
Siccirubricoccus
Siculibacillus
Sideroxydans
Silanimonas
Silicimonas
Silvanigrella
Simiduia
Simonsiella
Simplicispira
Sinimarinibacterium
Sinirhodobacter
Sinobacterium
Sinorhizobium
Skermanella
Sneathiella
Snodgrassella
Sodalis
Solimicrobium
Solimonas
Solirhodobacter
Sorangium
Sphaerotilus
Sphingobium
Sphingomonas
Sphingopyxis
Sphingorhabdus
Sphingosinicella
Sphingosinithalassobacter
Spiribacter
Spongiibacter
Stagnimonas
Stakelama
Stappia
Starkeya
Stella
Stenotrophobium
Stenotrophomonas
Stenoxybacter
Steroidobacter
Sterolibacterium
Stigmatella
Succinatimonas
Succinimonas
Succinivibrio
Sulfitobacter
Sulfuricaulis
Sulfuricella
Sulfuricurvum
Sulfuriferula
Sulfuriflexus
Sulfurifustis
Sulfurimonas
Sulfurirhabdus
Sulfurisoma
Sulfuritalea
Sulfuritortus
Sulfurivermis
Sulfurivirga
Sulfurospirillum
Sulfurovum
Superficieibacter
Sutterella
Suttonella
Swaminathania
Swingsia
Syntrophobacter
Syntrophorhabdus
Syntrophus
Tabrizicola
Tahibacter
Tamilnaduibacter
Tanticharoenia
Tardibacter
Tardiphaga
Tateyamaria
Tatlockia
Tatumella
Taylorella
Telmatospirillum
Tepidamorphus
Tepidicaulis
Tepidicella
Tepidimonas
Tepidiphilus
Terasakiella
Terasakiispira
Teredinibacter
Testudinibacter
Thalassobacter
Thalassobaculum
Thalassobium
Thalassobius
Thalassococcus
Thalassolituus
Thalassomonas
Thalassorhabdomicrobium
Thalassospira
Thalassotalea
Thauera
Thaumasiovibrio
8
6
4
2
0
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
AT7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HJURP_mid
Hira
Daxx
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone


Gene presence per genus in Proteobacteria (phylum) (12/12)
Thermithiobacillus
Thermochromatium
Thermodesulforhabdus
Thermomonas
Thermopetrobacter
Thioalbus
Thioalkalivibrio
Thiobaca
Thiobacillus
Thiocapsa
Thioclava
Thiocystis
Thiodictyon
Thiofilum
Thioflavicoccus
Thioflexothrix
Thiogranum
Thiohalobacter
Thiohalocapsa
Thiohalomonas
Thiohalophilus
Thiohalorhabdus
Thiohalospira
Thiolapillus
Thiolinea
Thiomicrorhabdus
Thiomicrospira
Thiomonas
Thioploca
Thiopseudomonas
Thiorhodococcus
Thiorhodospira
Thiorhodovibrio
Thiothrix
Thorsellia
Tibeticola
Tistlia
Tistrella
Tolumonas
Trabulsiella
Tranquillimonas
Trinickia
Tritonibacter
Tropicibacter
Tropicimonas
Turicimonas
Uliginosibacterium
Umboniibacter
Undibacterium
Ursidibacter
Uruburuella
Variibacter
Variovorax
Varunaivibrio
Ventosimonas
Verminephrobacter
Verticiella
Vespertiliibacter
Vibrio
Vitiosangium
Vitreoscilla
Vogesella
Volucribacter
Vulcaniibacterium
Vulgatibacter
Wenxinia
Wenzhouxiangella
Wigglesworthia
Woeseia
Wohlfahrtiimonas
Wolbachia
Wolinella
Woodsholea
Xanthobacter
Xanthomonas
Xenophilus
Xenorhabdus
Xinfangfangia
Xylella
Xylophilus
Yangia
Yersinia
Yokenella
Yoonia
Youhaiella
Youngimonas
Zavarzinia
Zhengella
Zhizhonghella
Zhongshania
Zobellella
Zoogloea
Zooshikella
Zymobacter
Zymomonas
8
6
4
2
0
LinkerHistone
Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
Hist_deacetyl
SIR2
DOT1
SET
SWIRM
CupinJmjC
ADD_ATRX
ADD_DNMT3
BAH
BIR
Bromodomain
Chromo
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
zf-CW
YEATS
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HUURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCHH
UBN_AB
Nucleoplasmin
ATF7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
AF9
PCRing
YAF2_RYBP
SAM
SLED
Suz12
CAF1C
Kelch
zf-CXXC
zf-CXH2
WD40


Gene presence per genus in Proteobacteria (phylum) (1/12) (fraction of species)
Sum
'Geomonas' Khan et al. 2020
'Geomonas' Xu et al. 2019
Abyssibacter
Acetobacter
Achromatium
Achromobacter
Acidibrevibacterium
Acidiferrobacter
Acidihalobacter
Acidimangrovimonas
Acidiphilium
Acidisoma
Acidisphaera
Acidithiobacillus
Acidocella
Acidomonas
Acidovorax
Acinetobacter
Actibacterium
Actinobacillus
Acuticoccus
Advenella
Aeromonas
Aestuariibacter
Aestuariisphingobium
Aestuariispira
Aestuariivirga
Aestuariivita
Afifella
Afipia
Agaribacterium
Agarilytica
Agarivorans
Aggregatibacter
Aggregicoccus
Agrobacterium
Ahniella
Ahrensia
Aidingimonas
Albidovulum
Albimonas
Alcaligenes
Alcanivorax
Algicola
Alginatibacterium
Algiphilus
Aliagarivorans
Alicycliphilus
Aliiarcobacter
Aliidiomarina
Aliiglaciecola
Aliihoeflea
Aliikangiella
Aliiroseovarius
Aliishimia
Aliivibrio
Alishewanella
Alkalilacustris
Alkalilimnicola
Alkalimonas
Alkalispirillum
Alkanindiges
Allochromatium
Allofrancisella
Alsobacter
Altererythrobacter
Alteromonas
Alysiella
Amantichitinum
Amaricoccus
Aminobacter
Amorphus
Amphiplicatus
Amphritea
Amylibacter
Anaerobiospirillum
Anaeromyxobacter
Anaplasma
Ancylobacter
Anderseniella
Andreprevotia
Antarctobacter
Aquabacter
Aquabacterium
Aquamicrobium
Aquaspirillum
Aquicella
Aquicoccus
Aquidulcibacter
Aquimixticola
Aquimonas
Aquincola
Aquisalimonas
Aquitalea
Arboricoccus
Archangium
Arcobacter
Arenicella
Arenimonas
1
0.8
0.6
0.4
0.2
0
LinkerHistone
Histone
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Hat1_N
KAT11
MOZ_SAS
SIR2
Hist_deacetyl
SET
DOT1
CupinJmjC
SWIRM
ADD_DNMT3
ADD_ATRX
BAH
BIP
Bromodomain
Chromo
CNG
IMS
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
zf-CW
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCHH
UBN_AB
Nucleoplasmin
AT7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
AF9
PCRing
YAF2_RYBP
SAM
SLED
Suz12
CAF1C
Kelch
zf-C2H2
zf-CXXC
WD40


Gene presence per genus in Proteobacteria (phylum) (2/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Arhodomonas
Aromatoleum
Arsenicitalea
Arsenophonus
Arsukibacterium
Asaia
Ascidiaceihabitans
Asticcacaulis
Atlantibacter
Aurantimonas
Aureimonas
Avibacterium
Azoarcus
Azohydromonas
Azomonas
Azonexus
Azorhizobium
Azospira
Azospirillum
Azotobacter
Azovibrio
Bacterioplanes
Bacteriovorax
Balneatrix
Bartonella
Basfia
Basilea
Bauldia
Bdellovibrio
Beggiatoa
Beijerinckia
Belnapia
Bergeriella
Bermanella
Bibersteinia
Bilophila
Biostraticola
Bisgaardia
Blastochloris
Blastomonas
Bombella
Bordetella
Bosea
Boseongicola
Bowmanella
Brachymonas
Brackiella
Bradymonas
Bradyrhizobium
Brenneria
Breoghania
Brevirhabdus
Brevundimonas
Brucella
Buchnera
Budvicia
Burkholderia
Buttiauxella
Caballeronia
Caedibacter
Caedimonas
Caenimonas
Caenispirillum
Caldimonas
Camelimonas
Caminibacter
Campylobacter
Candidatus Accumulibacter
Candidatus Aquarickettsia
Candidatus Berkiella
Candidatus Blochmannia
Candidatus Competibacter
Candidatus Contendobacter
Candidatus Dactylopiibacterium
Candidatus Deianiraea
Candidatus Desulfofervidus
Candidatus Doolittlea
Candidatus Endolissoclinum
Candidatus Finniella
Candidatus Fokinia
Candidatus Fonsibacter
Candidatus Fukatsuia
Candidatus Glomeribacter
Candidatus Gullanella
Candidatus Hamiltonella
Candidatus Hepatobacter
Candidatus Ishikawaella
Candidatus Jidaibacter
Candidatus Kinetoplastibacterium
Candidatus Macondimonas
Candidatus Magnetaquicoccus
Candidatus Marithrix
Candidatus Methylopumilus
Candidatus Methylospira
Candidatus Micropelagos
Candidatus Midichloria
Candidatus Moranella
Candidatus Neoehrlichia
Candidatus Nitrosoglobus
Candidatus Nucleicultrix
LinkerHistone
Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
SIR2
Hist_deacetyl
SET
DOT1
CupinJmjC
SWIRM
ADD_DNMT3
ADD_ATRX
BAH
BIR
Bromodomain
Chromo
IMS
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
zf-CW
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCHH
UBN_AB
Nucleoplasmin
AT7IP
PTIP
NCOA6
Menin
Dpy-30
PA1
AF9
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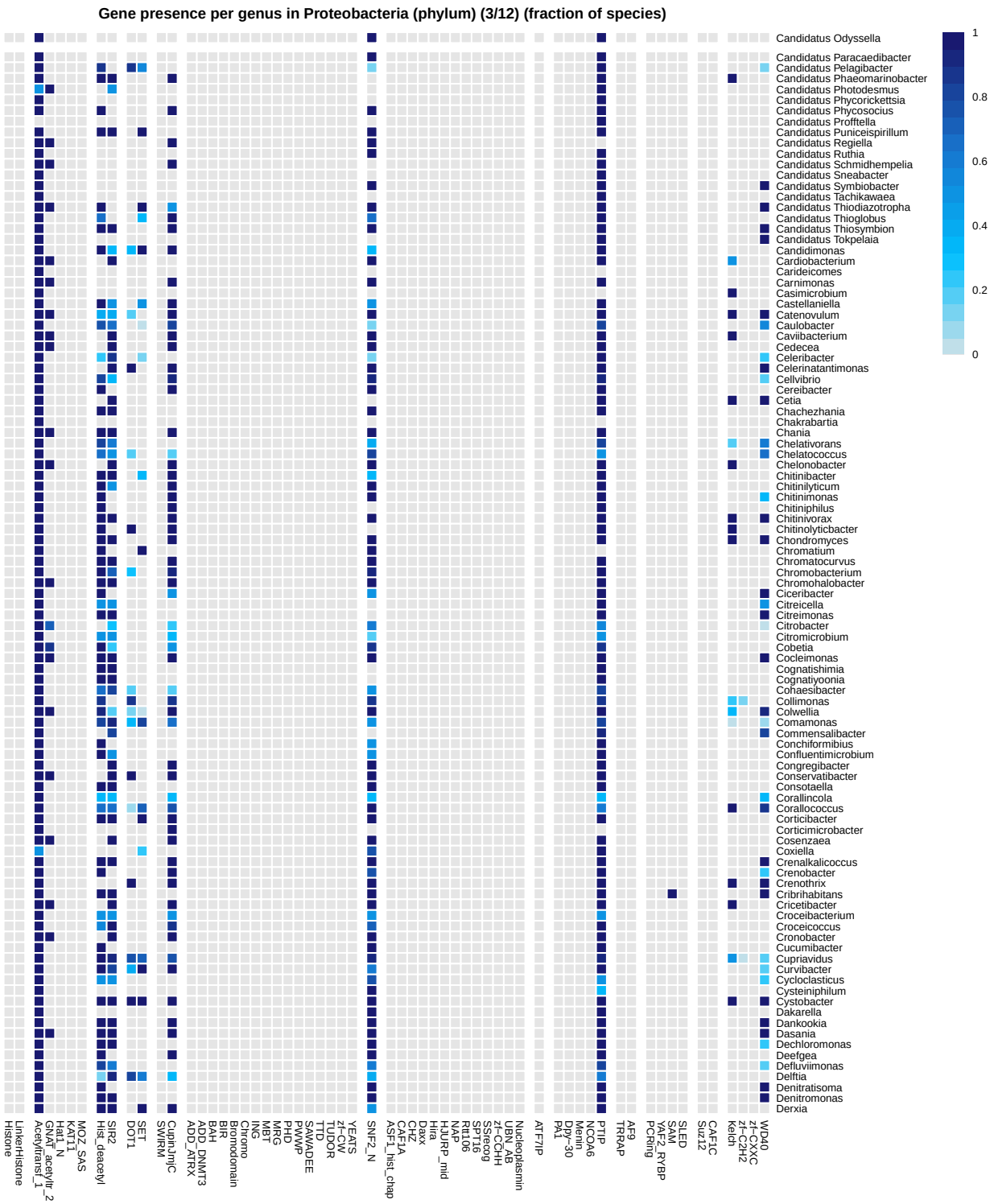
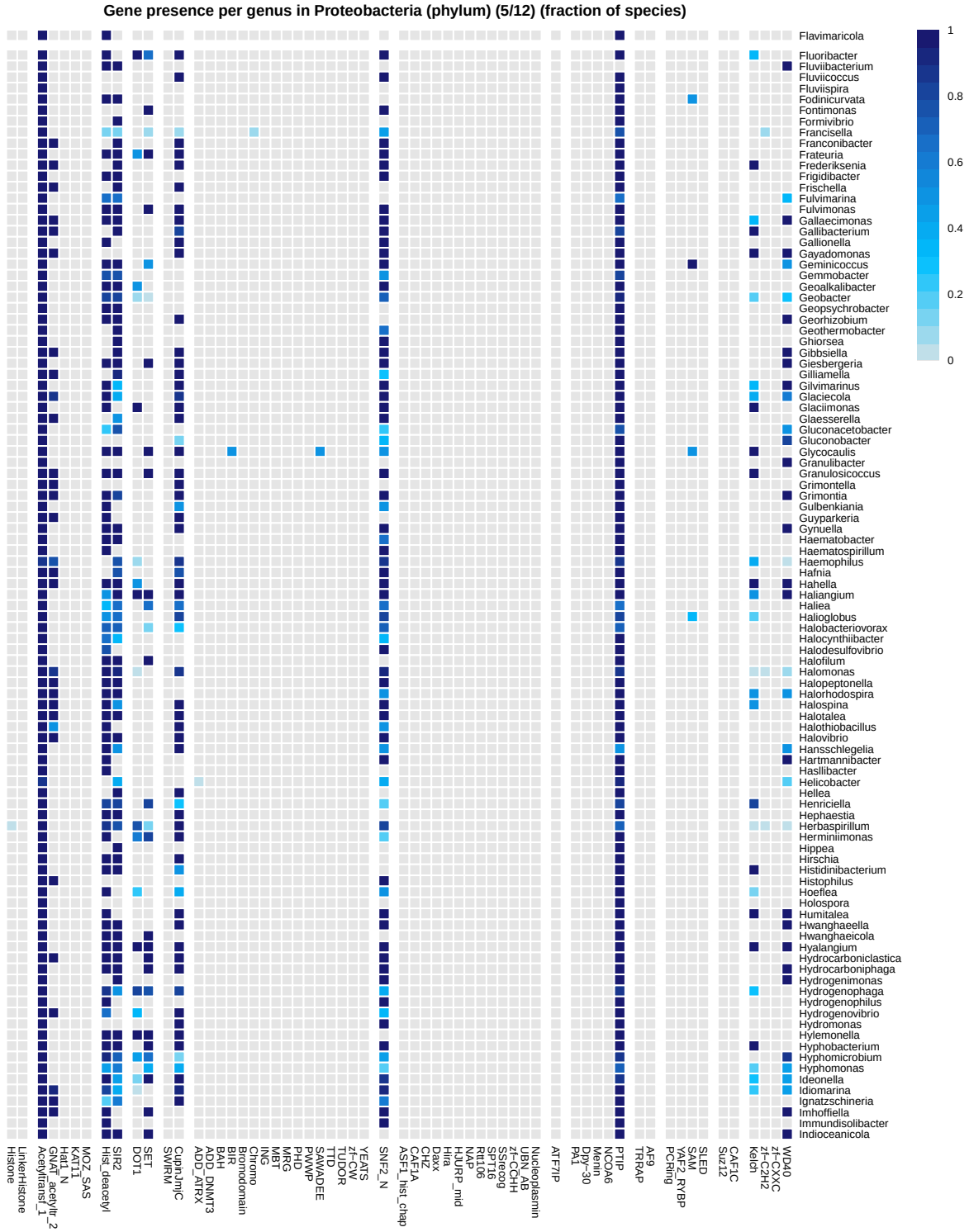
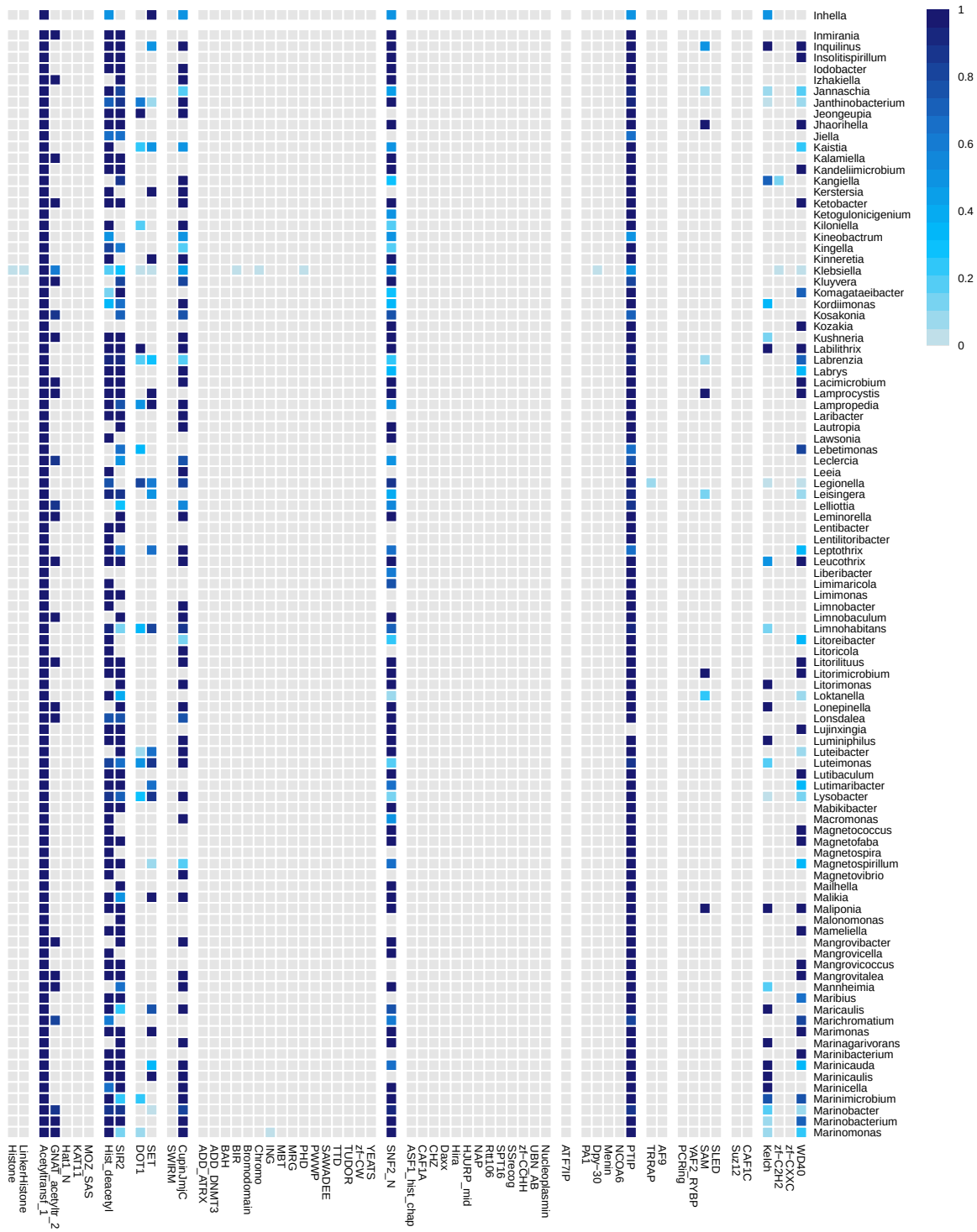
YAF2_RYBP
SLED
SAM
Suz12
CAF1C
Kelch
zf-C2H2
zf-CXXC
WD40

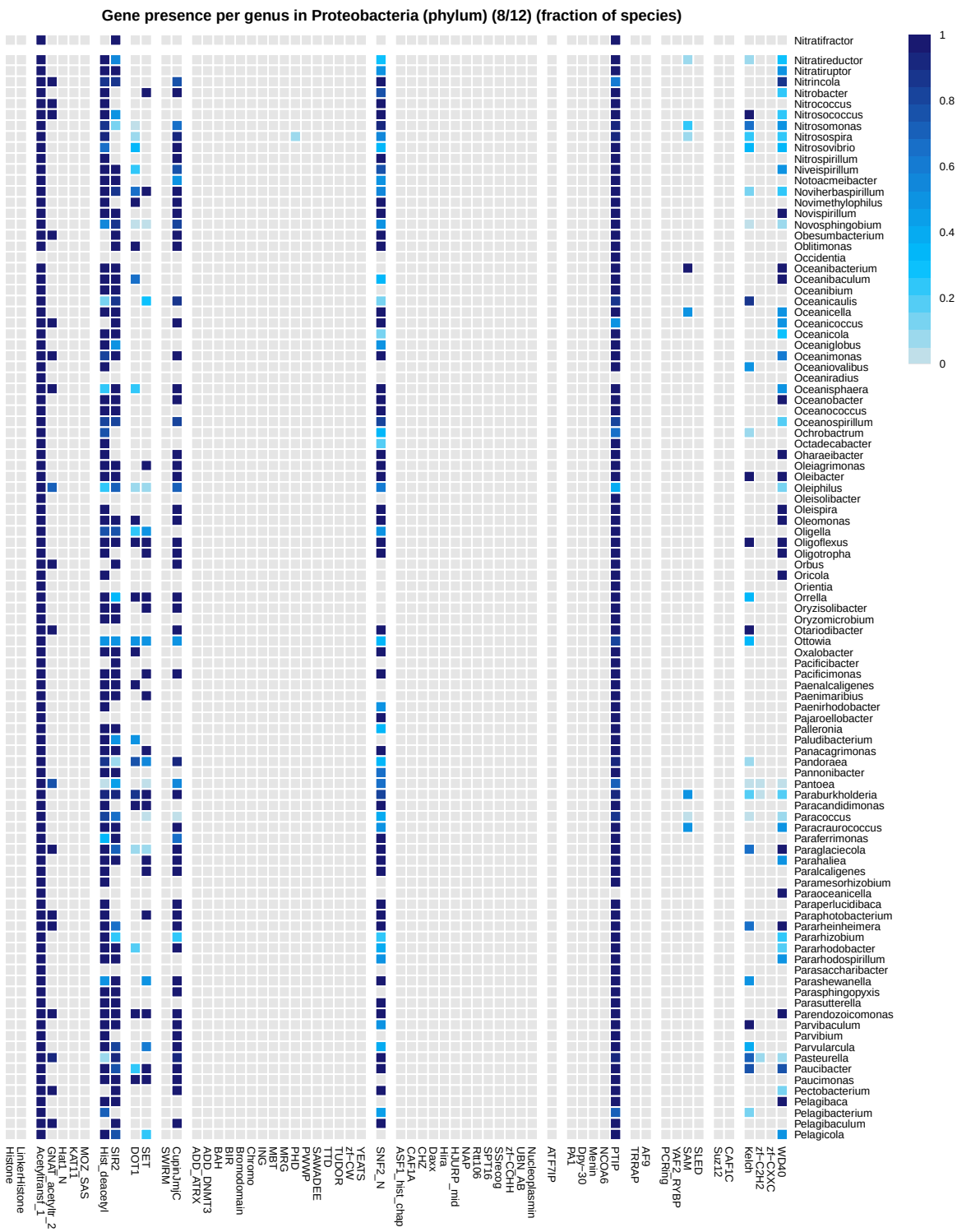

Gene presence per genus in Proteobacteria (phylum) (3/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Candidatus Odyssella
Candidatus Paracaedibacter
Candidatus Pelagibacter
Candidatus Phaeomarinobacter
Candidatus Photodesmus
Candidatus Phycorickettsia
Candidatus Phycosocius
Candidatus Profftella
Candidatus Puniceispirillum
Candidatus Regiella
Candidatus Ruthia
Candidatus Schmidhempelia
Candidatus Sneabacter
Candidatus Symbiobacter
Candidatus Tachikawaea
Candidatus Thiodiazotropha
Candidatus Thioglobus
Candidatus Thiosymbion
Candidatus Tokpelaia
Candidimonas
Cardiobacterium
Carideicomes
Carnimonas
Casimicrobium
Castellaniella
Catenovulum
Caulobacter
Caviibacterium
Cedecea
Celeribacter
Celerinatantimonas
Cellvibrio
Cereibacter
Cetia
Chachezhania
Chakrabartia
Chania
Chelativorans
Chelatococcus
Chelonobacter
Chitinibacter
Chitinilyticum
Chitinimonas
Chitiniphilus
Chitinivorax
Chitinolyticbacter
Chondromyces
Chromatium
Chromatocurvus
Chromobacterium
Chromohalobacter
Ciceribacter
Citreicella
Citreimonas
Citrobacter
Citromicrobium
Cobetia
Cocleimonas
Cognatishimia
Cognatiyoonia
Cohaesibacter
Collimonas
Colwellia
Comamonas
Commensalibacter
Conchiformibius
Confluentimicrobium
Congregibacter
Conservatibacter
Consotaella
Corallincola
Corallococcus
Corticibacter
Corticimicrobacter
Cosenzaea
Coxiella
Crenalkalicoccus
Crenobacter
Crenothrix
Cribrihabitans
Cricetibacter
Croceibacterium
Croceicoccus
Cronobacter
Cucumibacter
Cupriavidus
Curvibacter
Cycloclasticus
Cysteiniphilus
Cystobacter
Dakarella
Dankookia
Dasania
Dechloromonas
Deefgea
Defluviimonas
Delftia
Denitratisoma
Denitromonas
Derxia
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SPT6009
SPT1109
Rtt106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11_N
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone

Gene presence per genus in Proteobacteria (phylum) (4/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Desulfacinum
Desulfamplus
Desulfarculus
Desulfatibacillum
Desulfatiglans
Desulfatirhabdium
Desulfatitalea
Desulfobacca
Desulfobacter
Desulfobacterium
Desulfobacula
Desulfobotulus
Desulfobulbus
Desulfocapsa
Desulfocarbo
Desulfococcus
Desulfocurvibacter
Desulfocurvus
Desulfofaba
Desulfofustis
Desulfoglaeba
Desulfohalobium
Desulfohalovibrio
Desulfoluna
Desulfomicrobium
Desulfomonile
Desulfonatronospira
Desulfonatronovibrio
Desulfonatronum
Desulfonauticus
Desulfonema
Desulfopila
Desulfoplanes
Desulforegula
Desulforhopalus
Desulfosarcina
Desulfosoma
Desulfospira
Desulfotalea
Desulfothermus
Desulfotignum
Desulfovermiculus
Desulfovibrio
Desulfurella
Desulfurivibrio
Desulfuromonas
Desulfuromusa
Dethiosulfatarculus
Devosia
Diaphorobacter
Dichelobacter
Dichotomicrobium
Dickeya
Dinoroseobacter
Dissulfuribacter
Dissulfurirhabdus
Dokdonella
Donghicola
Dongia
Duganella
Duodenibacillus
Dyella
Ectothiorhodosinus
Ectothiorhodospira
Edaphovirga
Edwardsiella
Ehrlichia
Eikenella
Eilatimonas
Elioraea
Elstera
Emcibacter
Endozoicomonas
Enhydrobacter
Enhygromyxa
Ensifer
Enterobacillus
Enterobacter
Enterovibrio
Enterovirga
Eoetvoesia
Ephemeropterícola
Epibacterium
Erwinia
Erythrobacter
Erythromicrobium
Escherichia
Euryhalocaulis
Ewingella
Extensimonas
Falsirhodobacter
Falsochrobactrum
Fangia
Fastidiosibacter
Ferrimonas
Ferriphaselus
Ferrovum
Ferruginivarius
Fertoebacter
Filomicrobium
LinkerHistone
Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
SIR2
His_deacetyl
SET
DOT1
CupinJmjC
SWIRM
ADD_DNMT3
ADD_ATRX
BAH
BIR
Bromodomain
Chromo
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
zf-CW
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
Nucleoplasmin
UBN_AB
zf-CCHH
ATF7IP
PTIP
NCOA6
Menin
Dpy-30
PA1
AF9
TRRAP
PCRing
YAF2_RYBP
SAM
SLED
CAF1C
Suz12
Kelch
zf-C2H2
zf-CXXC
WD40

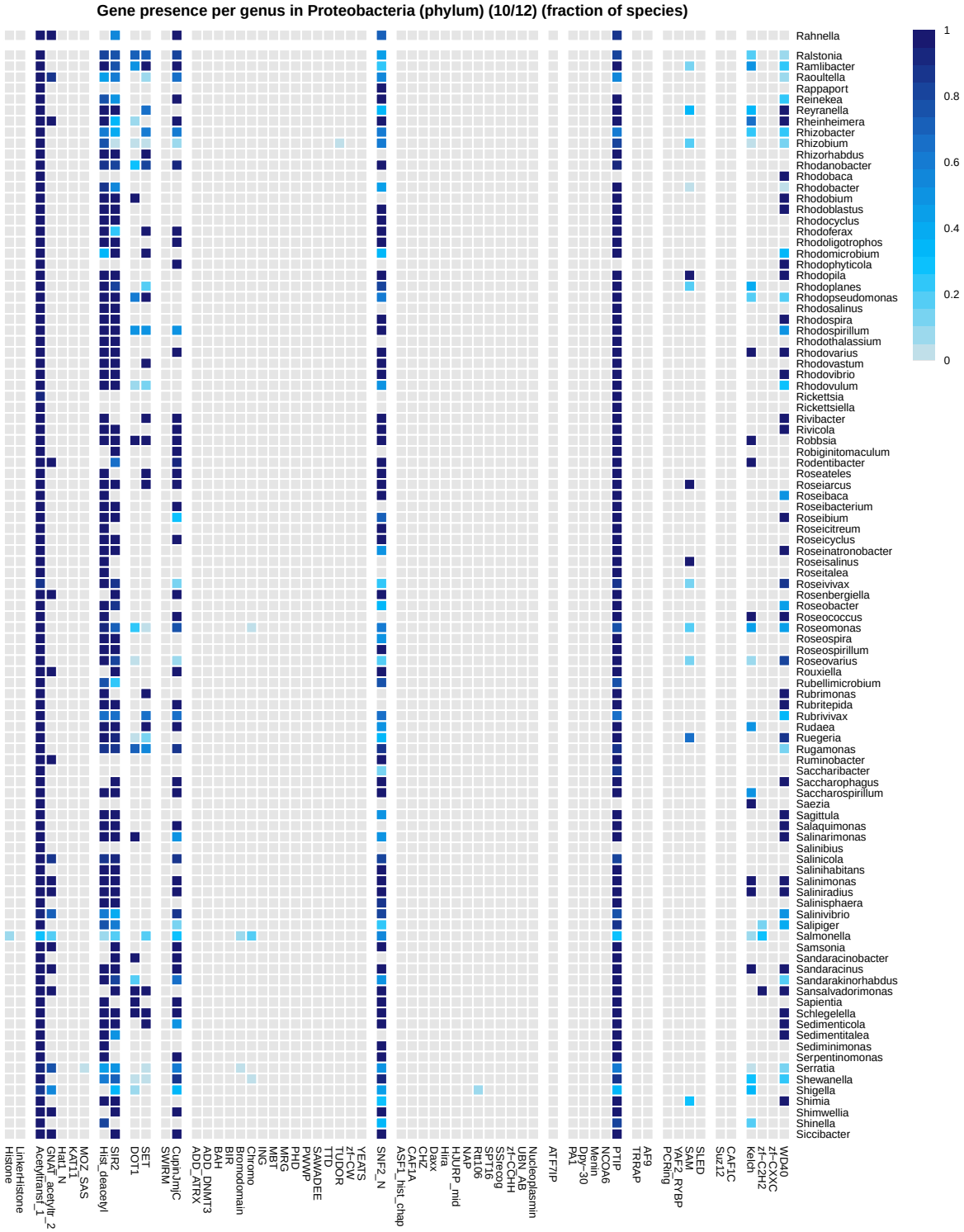

Gene presence per genus in Proteobacteria (phylum) (5/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Flavimaricola
Fluoribacter
Fluviibacterium
Fluviicoccus
Fluviispira
Fodinicurvata
Fontimonas
Formivibrio
Francisella
Franconibacter
Frateuria
Frederiksenia
Frigidibacter
Frischella
Fulvimarina
Fulvimonas
Gallaecimonas
Gallibacterium
Gallionella
Gayadomonas
Geminicoccus
Gemmobacter
Geoalkalibacter
Geobacter
Geopsychrobacter
Georhizobium
Geothermobacter
Ghiorsea
Gibbsiella
Giesbergeria
Gilliamella
Gilvimarinus
Glaciecola
Glaciimonas
Glaesserella
Gluconacetobacter
Gluconobacter
Glycocaulis
Granulibacter
Granulosicoccus
Grimontella
Grimontia
Gulbenkiania
Guyparkeria
Gynuella
Haematobacter
Haematospirillum
Haemophilus
Hafnia
Hahella
Haliangium
Haliea
Halioglobus
Halobacteriovorax
Halocynthiibacter
Halodesulfovibrio
Halofilum
Halomonas
Halopeptonella
Halorhodospira
Halospina
Halotalea
Halothiobacillus
Halovibrio
Hansschlegelia
Hartmannibacter
Hasllibacter
Helicobacter
Hellea
Henriciella
Hephaestia
Herbaspirillum
Herminiimonas
Hippea
Hirschia
Histidinibacterium
Histophilus
Hoeflea
Holospora
Humitalea
Hwanghaeella
Hwanghaeicola
Hyalangium
Hydrocarboniclastica
Hydrocarboniphaga
Hydrogenimonas
Hydrogenophaga
Hydrogenophilus
Hydrogenovibrio
Hydromonas
Hylemonella
Hyphobacterium
Hyphomicrobium
Hyphomonas
Ideonella
Idiomarina
Ignatzschineria
Imhoffiella
Immundisolibacter
Indioceanicola
WD40
zf-CXXC
zf-C2H2
Kelch
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
His_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1_2
LinkerHistone
Histone
CAF1C
Suz12

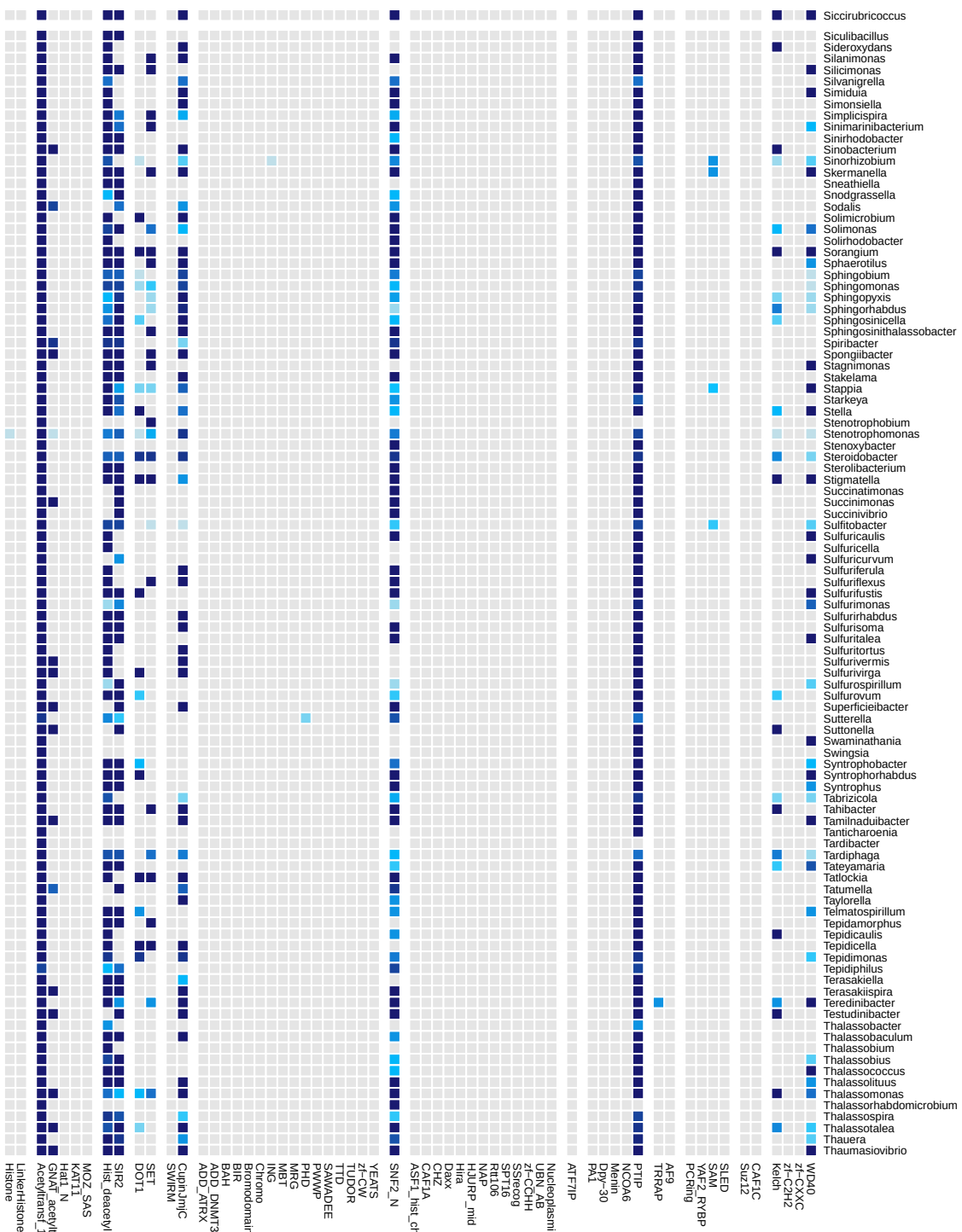

Gene presence per genus in Proteobacteria (phylum) (6/12) (fraction of species)
Inhella
Inmirania
Inquilinus
Insolitispirillum
Iodobacter
Izhakiella
Jannaschia
Janthinobacterium
Jeongeupia
Jhaorihella
Jiella
Kaistia
Kalamiella
Kandeliimicrobium
Kangiella
Kerstersia
Ketobacter
Ketogulonicigenium
Kiloniella
Kineobactrum
Kingella
Kinneretia
Klebsiella
Kluyvera
Komagataeibacter
Kordiimonas
Kosakonia
Kozakia
Kushneria
Labilithrix
Labrenzia
Labrys
Lacimicrobium
Lamprocystis
Lampropedia
Laribacter
Lautropia
Lawsonia
Lebetimonas
Leclercia
Leeia
Legionella
Leisingera
Lelliottia
Leminorella
Lentibacter
Lentilitoribacter
Leptothrix
Leucothrix
Liberibacter
Limimaricola
Limimonas
Limnobacter
Limnobaculum
Limnohabitans
Litoreibacter
Litoricola
Litorilituus
Litorimicrobium
Litorimonas
Loktanella
Lonepinella
Lonsdalea
Lujinxingia
Luminiphilus
Luteibacter
Luteimonas
Lutibaculum
Lutimaribacter
Lysobacter
Mabikibacter
Macromonas
Magnetococcus
Magnetofaba
Magnetospira
Magnetospirillum
Magnetovibrio
Mailhella
Malikia
Maliponia
Malonomonas
Mameliella
Mangrovibacter
Mangrovicella
Mangrovicoccus
Mangrovitalea
Mannheimia
Maribius
Maricaulis
Marichromatium
Marimonas
Marinagarivorans
Marinibacterium
Marinicauda
Marinicaulis
Marinicella
Marinimicrobium
Marinobacter
Marinobacterium
Marinomonas
1
0.8
0.6
0.4
0.2
0
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
HAT_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone

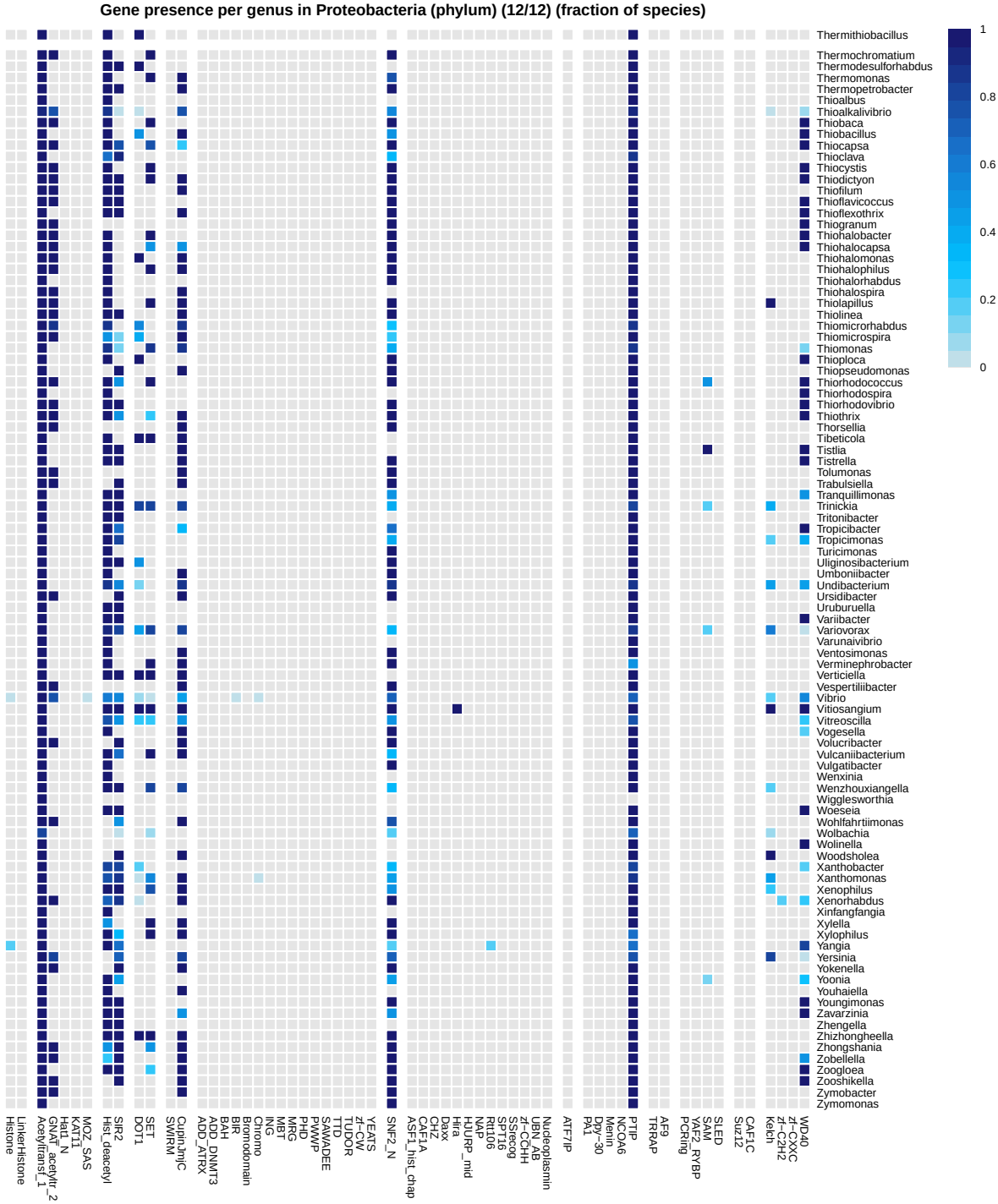
Gene presence per genus in Proteobacteria (phylum) (7/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Marinospirillum
Marinovum
Mariprofundus
Marisediminitalea
Maritalea
Maritimibacter
Marivita
Marivivens
Marortus
Martelella
Massilia
Melaminivora
Melittangium
Mesocricetibacter
Mesorhizobium
Mesosutterella
Metakosakonia
Metallibacterium
Methylarcula
Methylibium
Methylobacillus
Methylobacter
Methylobacterium
Methylobrevis
Methylocaldum
Methylocapsa
Methyloceanibacter
Methylocella
Methylococcus
Methylocucumis
Methylocystis
Methyloferula
Methylogaea
Methyloglobulus
Methylohalobius
Methyloligella
Methylomagnum
Methylomarinum
Methylomicrobium
Methylomonas
Methylophaga
Methylophilus
Methylopila
Methyloprofundus
Methylorubrum
Methylosarcina
Methylosinus
Methylotenera
Methyloterricola
Methylotetracoccus
Methyloversatilis
Methylovirgula
Methylovorus
Methylovulum
Micavibrio
Microbulbifer
Microvirga
Microvirgula
Minicystis
Minwuia
Mitsuaria
Mixta
Mizugakiibacter
Modicisalibacter
Moellerella
Monaibacterium
Mongoliimonas
Moraxella
Morganella
Moritella
Morococcus
Motilimonas
Motiliproteus
Muribacter
Mycetohabitans
Mycoavidus
Mycoplana
Myxococcus
Nannocystis
Natronohydrobacter
Nautella
Nautilia
Necropsobacter
Neiella
Neisseria
Neoasaia
Neokomagataea
Neomegalonema
Neorhizobium
Neorickettsia
Neptunicoccus
Neptuniibacter
Neptunomonas
Nereida
Nesiotobacter
Nevskia
Nicoletella
Nioella
Nisaea
Nissabacter
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
BRCT
Bromodomain
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone


Gene presence per genus in Proteobacteria (phylum) (8/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Nitratifractor
Nitratireductor
Nitratiruptor
Nitrincola
Nitrobacter
Nitrococcus
Nitrosococcus
Nitrosomonas
Nitrosospira
Nitrosovibrio
Nitrospirillum
Niveispirillum
Notoacmeibacter
Noviherbaspirillum
Novimethylophilus
Novispirillum
Novosphingobium
Obesumbacterium
Oblitimonas
Occidentia
Oceanibacterium
Oceanibaculum
Oceanibium
Oceanicaulis
Oceanicella
Oceanicoccus
Oceanicola
Oceaniglobus
Oceanimonas
Oceaniovalibus
Oceaniradius
Oceanisphaera
Oceanobacter
Oceanococcus
Oceanospirillum
Ochrobactrum
Octadecabacter
Oharaeibacter
Oleiagrimonas
Oleibacter
Oleiphilus
Oleisolibacter
Oleispira
Oleomonas
Oligella
Oligoflexus
Oligotropha
Orbus
Oricola
Orientia
Orrella
Oryzisolibacter
Oryzomicrobium
Otariodibacter
Ottowia
Oxalobacter
Pacificibacter
Pacificimonas
Paenalcaligenes
Paenimaribius
Paenirhodobacter
Pajaroellobacter
Palleronia
Paludibacterium
Panacagrimonas
Pandoraea
Pannonibacter
Pantoea
Paraburkholderia
Paracandidimonas
Paracoccus
Paracraurococcus
Paraferrimonas
Paraglaciecola
Parahaliea
Paralcaligenes
Paramesorhizobium
Paraoceanicella
Paraperlucidibaca
Paraphotobacterium
Pararheinheimera
Pararhizobium
Pararhodobacter
Pararhodospirillum
Parasaccharibacter
Parashewanella
Parasphingopyxis
Parasutterella
Parendozoicomonas
Parvibaculum
Parvibium
Parvularcula
Pasteurella
Paucibacter
Paucimonas
Pectobacterium
Pelagibaca
Pelagibacterium
Pelagibaculum
Pelagicola
LinkerHistone
Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
SIR2
His_deacetyl
SET
DOT1
CupinJmjC
SWIRM
ADD_ATRX
ADD_DNMT3
BAH
BR
Bromodomain
Chromo
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
zf-CW
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCHH
Nucleoplasmin
UBN_AB
ATF7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
AF9
PCRing
YAF2_RYBP
SAM
SLED
Suz12
CAF1C
Kelch
zf-C2H2
zf-CXXC
WD40


Gene presence per genus in Proteobacteria (phylum) (9/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Pelagimonas
Pelagivirga
Pelistega
Pelobacter
Pelomonas
Perlucidibaca
Permianibacter
Phaeobacter
Phaeospirillum
Phaselibacter
Phenylobacterium
Phocoenobacter
Photobacterium
Photorhabdus
Phreatobacter
Phyllobacterium
Phytobacter
Pigmentiphaga
Piscinibacter
Piscirickettsia
Pistricoccus
Planktotalea
Plasticicumulans
Pleionea
Pleomorphomonas
Plesiocystis
Plesiomonas
Pluralibacter
Pokkaliibacter
Polaromonas
Polyangium
Polycyclovorans
Polymorphobacter
Polymorphum
Polynucleobacter
Pontibaca
Ponticaulis
Ponticoccus
Pontivivens
Porphyrobacter
Porticoccus
Poseidonibacter
Poseidonocella
Pragia
Primorskyibacter
Profundibacterium
Prolinoborus
Propionivibrio
Prosthecomicrobium
Proteus
Providencia
Pseudacidovorax
Pseudaestuariivita
Pseudaminobacter
Pseudescherichia
Pseudoalteromonas
Pseudoarcobacter
Pseudobacteriovorax
Pseudochrobactrum
Pseudocitrobacter
Pseudodesulfovibrio
Pseudodonghicola
Pseudoduganella
Pseudofrancisella
Pseudofulvimonas
Pseudogemmobacter
Pseudogulbenkiania
Pseudohaliea
Pseudohoeflea
Pseudohongiella
Pseudolabrys
Pseudomaricurvus
Pseudomethylobacillus
Pseudomonas
Pseudooceanicola
Pseudooctadecabacter
Pseudopelagicola
Pseudophaeobacter
Pseudopuniceibacterium
Pseudorhizobium
Pseudorhodobacter
Pseudorhodoferax
Pseudorhodoplanes
Pseudorivibacter
Pseudoroseicyclus
Pseudoruegeria
Pseudospirillum
Pseudovibrio
Pseudoxanthobacter
Pseudoxanthomonas
Psychrobacter
Psychromonas
Psychrosphaera
Pulveribacter
Puniceibacterium
Pusillimonas
Pyruvatibacter
Pyxidicoccus
Qipengyuania
Quisquiliibacterium
LinkerHistone
Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
SIR2
Hist_deacetyl
SET
DOT1
CupinJmjC
SWIRM
ADD_ATRX
ADD_DNMT3
BAH
Bromodomain
CHROMO
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
zf-CW
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCHH
UBN_AB
Nucleoplasmin
AT7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
AF9
PCRing
YAF2_RYBP
SAM
SLED
Suz12
CAF1C
Kelch
zf-C2H2
zf-CXXC
WD40


Gene presence per genus in Proteobacteria (phylum) (10/12) (fraction of species)
Rahnella
Ralstonia
Ramlibacter
Raoultella
Rappaport
Reinekea
Reyranella
Rheinheimera
Rhizobacter
Rhizobium
Rhizorhabdus
Rhodanobacter
Rhodobaca
Rhodobacter
Rhodobium
Rhodoblastus
Rhodocyclus
Rhodoferax
Rhodoligotrophos
Rhodomicrobium
Rhodophyticola
Rhodopila
Rhodoplanes
Rhodopseudomonas
Rhodosalinus
Rhodospira
Rhodospirillum
Rhodothalassium
Rhodovarius
Rhodovastum
Rhodovibrio
Rhodovulum
Rickettsia
Rickettsiella
Rivibacter
Rivicola
Robbsia
Robiginitomaculum
Rodentibacter
Roseateles
Roseiarcus
Roseibaca
Roseibacterium
Roseibium
Roseicitreum
Roseicyclus
Roseinatronobacter
Roseisalinus
Roseitalea
Roseivivax
Rosenbergiella
Roseobacter
Roseococcus
Roseomonas
Roseospira
Roseospirillum
Roseovarius
Rouxiella
Rubellimicrobium
Rubrimonas
Rubritepida
Rubrivivax
Rudaea
Ruegeria
Rugamonas
Ruminobacter
Saccharibacter
Saccharophagus
Saccharospirillum
Saezia
Sagittula
Salaquimonas
Salinarimonas
Salinibius
Salinicola
Salinihabitans
Salinimonas
Saliniradius
Salinisphaera
Salinivibrio
Salipiger
Salmonella
Samsonia
Sandaracinobacter
Sandaracinus
Sandarakinorhabdus
Sansalvadorimonas
Sapientia
Schlegelella
Sedimenticola
Sedimentitalea
Sediminimonas
Serpentinomonas
Serratia
Shewanella
Shigella
Shimia
Shimwellia
Shinella
Siccibacter
1
0.8
0.6
0.4
0.2
0
LinkerHistone
Histone
Acetyltransf_1
GNAT_acetyltr_2
Hat1_N
KAT11
MOZ_SAS
SIR2
His_deacetyl
SET
DOT1
CupinJmjC
SWIRM
ADD_DNMT3
ADD_ATRX
BAH
BIR
Bromodomain
Chromo
ING
MBT
MRG
PHD
PWWP
SAWADEE
TTD
TUDOR
YEATS
zf-CW
SNF2_N
ASF1_hist_chap
CAF1A
CHZ
Daxx
Hira
HJURP_mid
NAP
Rtt106
SPT16
SSrecog
zf-CCHH
UBN_AB
Nucleoplasmin
AT7IP
PA1
Dpy-30
Menin
NCOA6
PTIP
TRRAP
AF9
PCRing
YAF2_RYBP
SAM
SLED
Suz12
CAF1C
Kelch
zf-C2H2
zf-CXXC
WD40


Gene presence per genus in Proteobacteria (phylum) (11/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Siccirubricoccus
Siculibacillus
Sideroxydans
Silanimonas
Silicimonas
Silvanigrella
Simiduia
Simonsiella
Simplicispira
Sinimarinibacterium
Sinirhodobacter
Sinobacterium
Sinorhizobium
Skermanella
Sneathiella
Snodgrassella
Sodalis
Solimicrobium
Solimonas
Solirhodobacter
Sorangium
Sphaerotilus
Sphingobium
Sphingomonas
Sphingopyxis
Sphingorhabdus
Sphingosinicella
Sphingosinithalassobacter
Spiribacter
Spongiibacter
Stagnimonas
Stakelama
Stappia
Starkeya
Stella
Stenotrophobium
Stenotrophomonas
Stenoxybacter
Steroidobacter
Sterolibacterium
Stigmatella
Succinatimonas
Succinimonas
Succinivibrio
Sulfitobacter
Sulfuricaulis
Sulfuricella
Sulfuricurvum
Sulfuriferula
Sulfuriflexus
Sulfurifustis
Sulfurimonas
Sulfurirhabdus
Sulfurisoma
Sulfuritalea
Sulfuritortus
Sulfurivermis
Sulfurivirga
Sulfurospirillum
Sulfurovum
Superficieibacter
Sutterella
Suttonella
Swaminathania
Swingsia
Syntrophobacter
Syntrophorhabdus
Syntrophus
Tabrizicola
Tahibacter
Tamilnaduibacter
Tanticharoenia
Tardibacter
Tardiphaga
Tateyamaria
Tatlockia
Tatumella
Taylorella
Telmatospirillum
Tepidamorphus
Tepidicaulis
Tepidicella
Tepidimonas
Tepidiphilus
Terasakiella
Terasakiispira
Teredinibacter
Testudinibacter
Thalassobacter
Thalassobaculum
Thalassobium
Thalassobius
Thalassococcus
Thalassolituus
Thalassomonas
Thalassorhabdomicrobium
Thalassospira
Thalassotalea
Thauera
Thaumasiovibrio
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
Dpy-30
PA1
ATF7IP
Nucleoplasmin
UBN2_AB
UBN2_2
zf-CCHH
SSrecog
SPT16
Rtt106
NAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltransf_1
LinkerHistone
Histone


Gene presence per genus in Proteobacteria (phylum) (12/12) (fraction of species)
1
0.8
0.6
0.4
0.2
0
Thermithiobacillus
Thermochromatium
Thermodesulforhabdus
Thermomonas
Thermopetrobacter
Thioalbus
Thioalkalivibrio
Thiobaca
Thiobacillus
Thiocapsa
Thioclava
Thiocystis
Thiodictyon
Thiofilum
Thioflavicoccus
Thioflexothrix
Thiogranum
Thiohalobacter
Thiohalocapsa
Thiohalomonas
Thiohalophilus
Thiohalorhabdus
Thiohalospira
Thiolapillus
Thiolinea
Thiomicrorhabdus
Thiomicrospira
Thiomonas
Thioploca
Thiopseudomonas
Thiorhodococcus
Thiorhodospira
Thiorhodovibrio
Thiothrix
Thorsellia
Tibeticola
Tistlia
Tistrella
Tolumonas
Trabulsiella
Tranquillimonas
Trinickia
Tritonibacter
Tropicibacter
Tropicimonas
Turicimonas
Uliginosibacterium
Umboniibacter
Undibacterium
Ursidibacter
Uruburuella
Variibacter
Variovorax
Varunaivibrio
Ventosimonas
Verminephrobacter
Verticiella
Vespertiliibacter
Vibrio
Vitiosangium
Vitreoscilla
Vogesella
Volucribacter
Vulcaniibacterium
Vulgatibacter
Wenxinia
Wenzhouxiangella
Wigglesworthia
Woeseia
Wohlfahrtiimonas
Wolbachia
Wolinella
Woodsholea
Xanthobacter
Xanthomonas
Xenophilus
Xenorhabdus
Xinfangfangia
Xylella
Xylophilus
Yangia
Yersinia
Yokenella
Yoonia
Youhaiella
Youngimonas
Zavarzinia
Zhengella
Zhizhongheella
Zhongshania
Zobellella
Zoogloea
Zooshikella
Zymobacter
Zymomonas
WD40
zf-CXXC
zf-C2H2
Kelch
CAF1C
Suz12
SLED
SAM
YAF2_RYBP
PCRing
AF9
TRRAP
PTIP
NCOA6
Menin
DPY-30
PA1
ATF7IP
Nudeoplasmin
UBN_AB
zf-CCHH
SSrecog
SPT16
Rtt106
HAP
HJURP_mid
Hira
Daxx
CHZ
CAF1A
ASF1_hist_chap
SNF2_N
YEATS
zf-CW
TUDOR
TTD
SAWADEE
PWWP
PHD
MRG
MBT
ING
Chromo
Bromodomain
BIR
BAH
ADD_DNMT3
ADD_ATRX
CupinJmjC
SWIRM
SET
DOT1
SIR2
Hist_deacetyl
MOZ_SAS
KAT11
Hat1_N
GNAT_acetyltr_2
Acetyltrans_1
LinkerHistone
Histone

num species per group