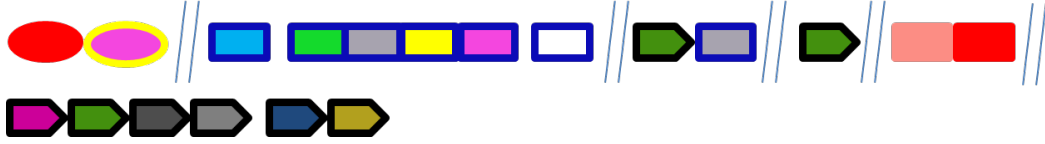
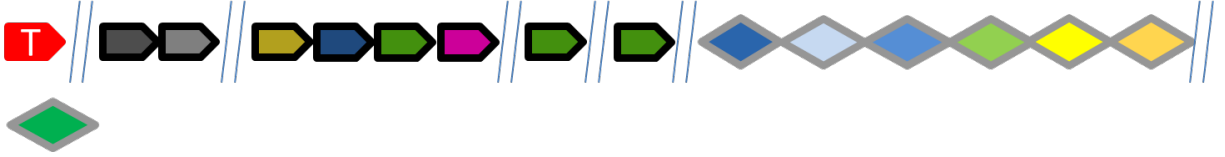


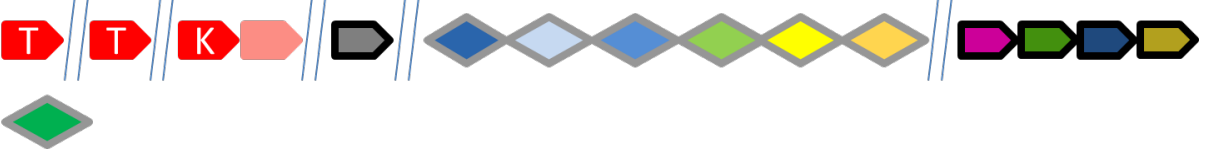
Acetonema
longum APO-1
DSM 6540



Acidaminococcus
fermentans VR4
DSM 20731



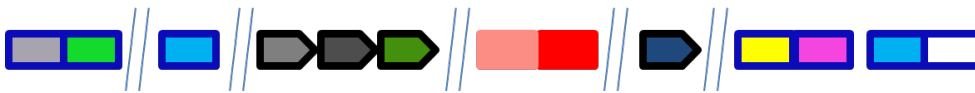
Acidaminococcus
sp. D21



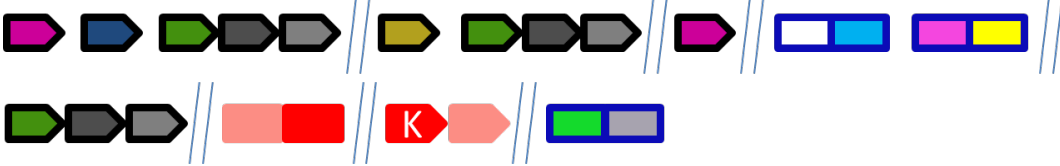
Alistipes
putredinis
DSM 17216



Alkaliphilus
metalliredigens
QYMF



Alkaliphilus
oremlandii
OhILAs



Anaerococcus
hydrogenalis
ACS-025-V-Sch4



Anaerococcus
hydrogenalis
DSM 7454



Anaerococcus
lactolyticus
ATCC 51172



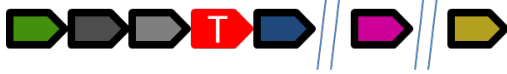
Anaerococcus
prevotii PC 1
DSM 20548



Anaerococcus
tetradius ATCC
35098



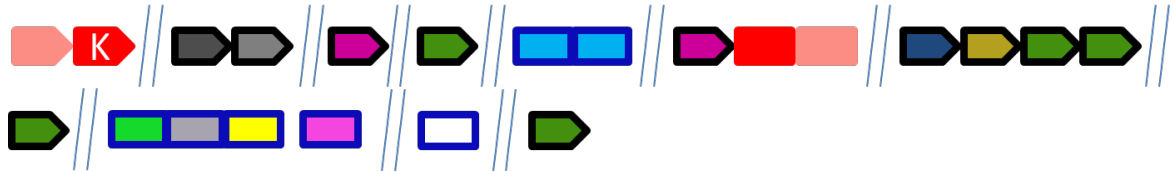
Anaerococcus
vaginalis ATCC
51170



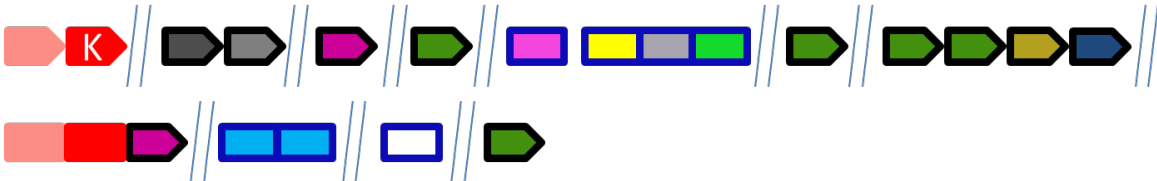
Anaerofustis
stercorihominis
DSM 17244



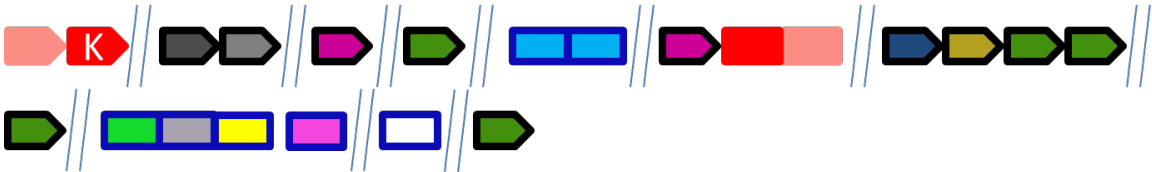
Anaeromyxobact
er dehalogenans
2CP-1



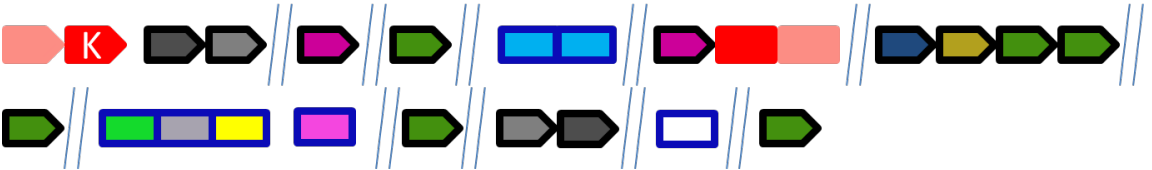
Anaeromyxobact
er dehalogenans
2CP-C



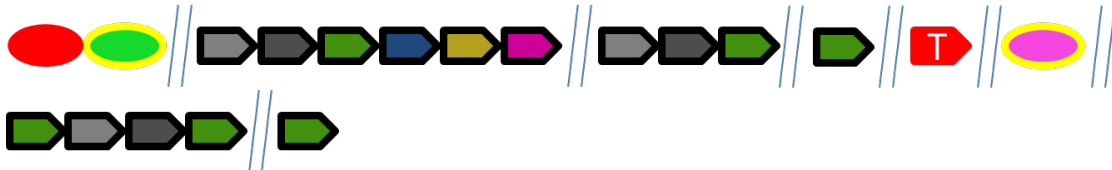
Anaeromyxobact
er sp K



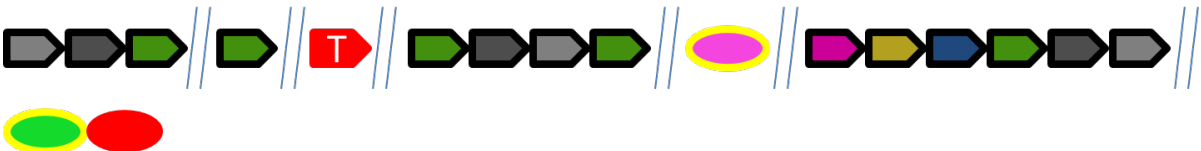
Anaeromyxobact
er sp. Fw109-5



Anaerostipes
caccae
DSM 14662



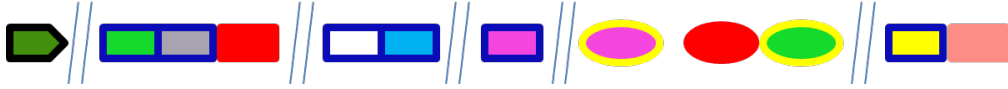
Anaerostipes sp.
3_2_56FAA



Anaerotruncus
colihominis DSM
17241



Bacteroidetes
sp. F0058



Brachyspira
hyodysenteriae
WA1,
ATCC 49526



Brachyspira
murdochii
56-150,
DSM 12563



Brachyspira
pilosicoli
95/1000



Butyrivibrio
crossotus
DSM 2876



Butyrivibrio
fibrisolvens 16/4



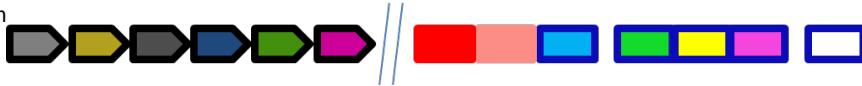
Butyrivibrio
proteoclasticus
B316



Candidatus
Cloacamonas
acidaminovorans



Carboxydibrachium
pacificum JM,
DSM 12653



Carboxydotherrmus
hydrogeno-
formans Z-2901



Carnobacterium
sp:
• 17-4
• AT7



Clostridiales sp.
SS3/4



Clostridiales sp.
SSC/2



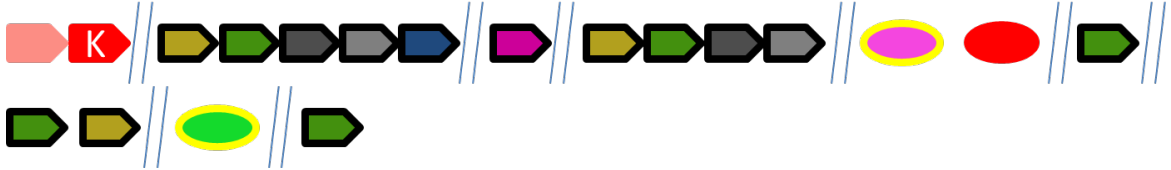
Clostridium
acetobutylicum
• ATCC 824
• DSM 1731



Clostridium
acetobutylicum
EA 2018



Clostridium
beijerinckii
NCIMB 8052



Clostridium
botulinum:

- A2 Kyoto-F
- Ba4 657
- Bf
- BoNT/A1 Hall
- BoNT/A1, ATCC 19397
- BoNT/A3 Loch Maree
- BoNT/B1 Okra
- F Langeland
- H04402 065
- F 230613
- NCTC 2916
- type A - Hall



Clostridium
botulinum:

- B Eklund 17B
- E1 BoNT E Beluga
- E3 Alaska E43



Clostridium
botulinum
BKT015925



Clostridium
botulinum D
1873



Clostridium
botulinum type C
- Eklund



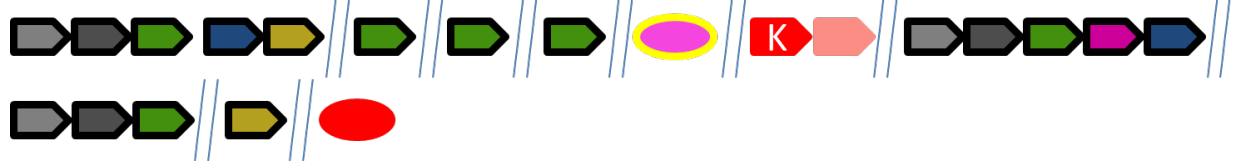
Clostridium butyricum 5521



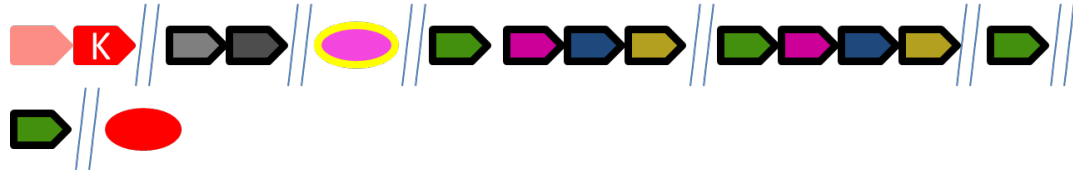
Clostridium butyricum E4, BoNT E BL5262



Clostridium carboxidivorans P7, DSM 15243 (1)



Clostridium carboxidivorans P7, DSM 15243 (2)



Clostridium cellulovorans 743B, ATCC 35296 (1)



Clostridium cellulovorans 743B, ATCC 35296 (2)



Clostridium cf. saccharolyticum K10



Clostridium difficile 630 (epidemic type X)

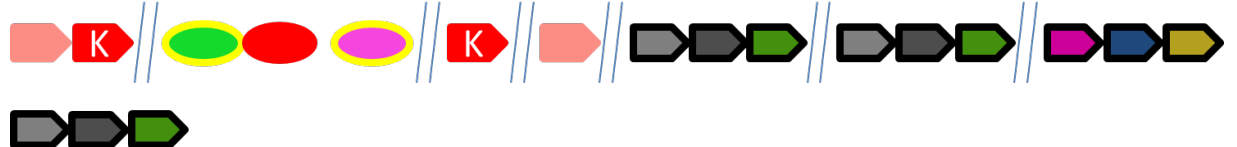


Clostridium difficile:

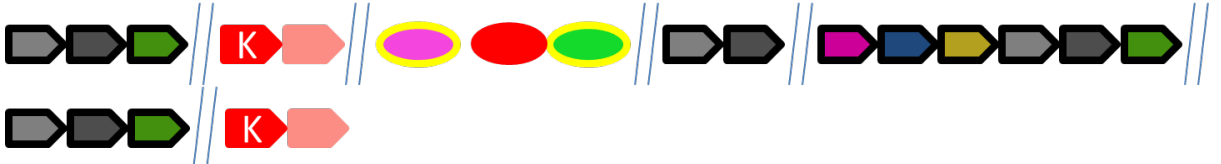
- BI9
- CD196
- QCD 32g58
- QCD 66c26
- QCD R20291



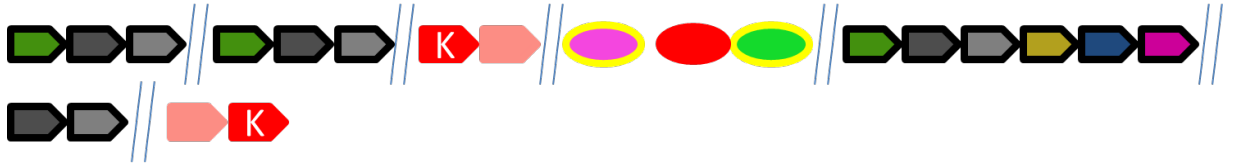
Clostridium difficile CIP 107932



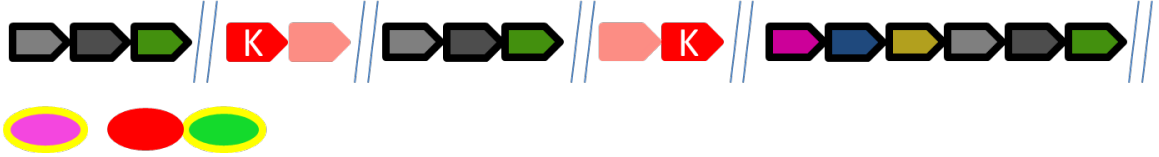
Clostridium difficile NAP07



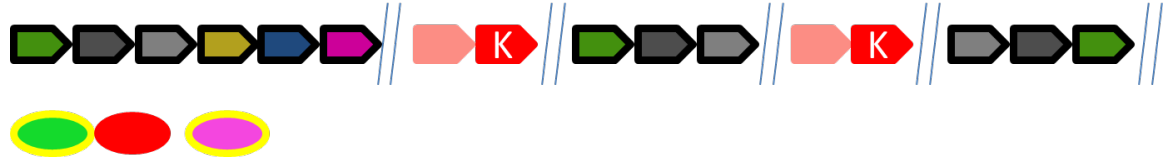
Clostridium
difficile NAP08



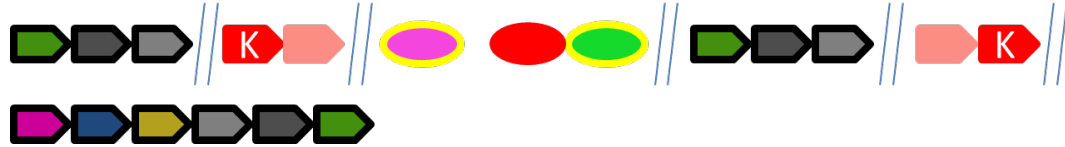
Clostridium
difficile
QCD-23m63



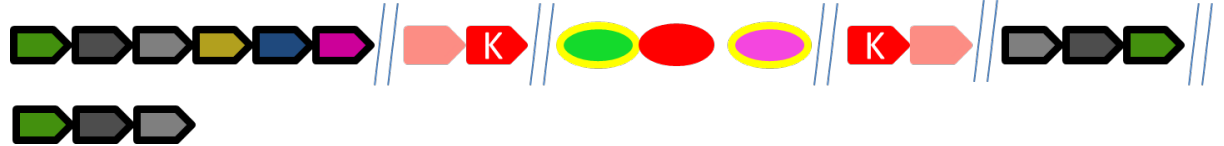
Clostridium
difficile
QCD-37x79,
NAP1a/001



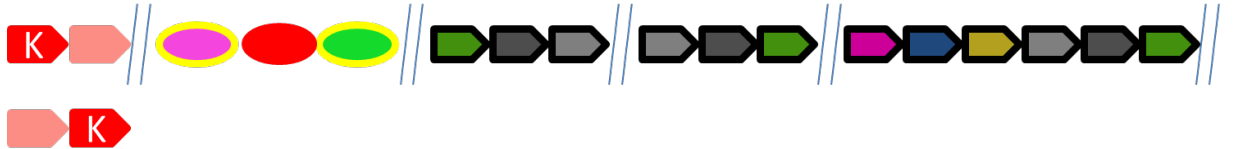
Clostridium
difficile
QCD-63q42



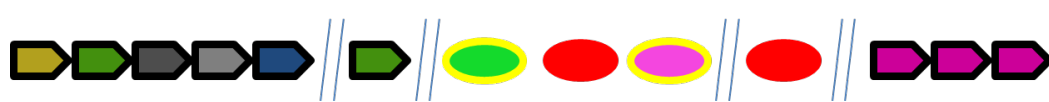
Clostridium
difficile
QCD-76w55,
NAP1



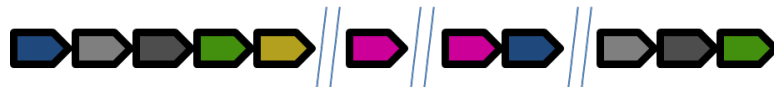
Clostridium
difficile
QCD-97b34,
NAP1b/006



Clostridium
kluyveri:
• DSM 555
• NBRC12016



Clostridium
novyi
NT



Clostridium
perfringens
• 13
• ATCC 13124
• CPE F4969
• NCTC 8239
• SM101
• type C -
JGS1495
• type D -
JGS1721



Clostridium
perfringens:

- type B - ATCC 3626
- type E - JGS1987



Clostridium sp.
M62/1



Clostridium sp.
7_2_43FAA



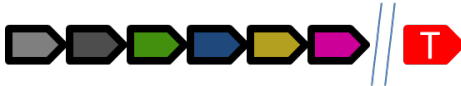
Clostridium sp.
HGF2



Clostridium sp.
L2-50



Clostridium sp.
SS2/1



Clostridium sp.
SY8519



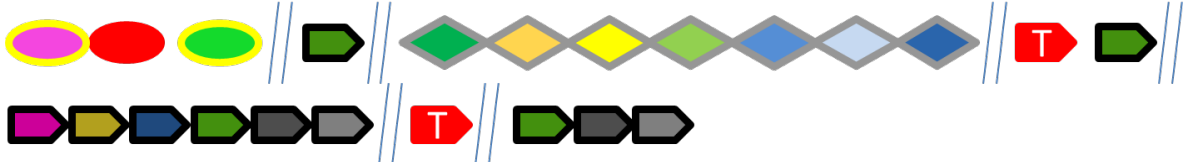
Clostridium
sporogenes
ATCC 15579



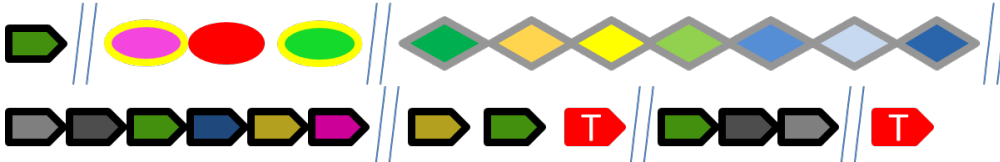
Clostridium
sticklandii
DSM 519



Clostridium
symbiosum
WAL-14163



Clostridium
symbiosum
WAL-14673



Clostridium
tetani
Massachusetts
E88



Coprococcus
catus GD/7



Coprococcus
comes
ATCC 27758



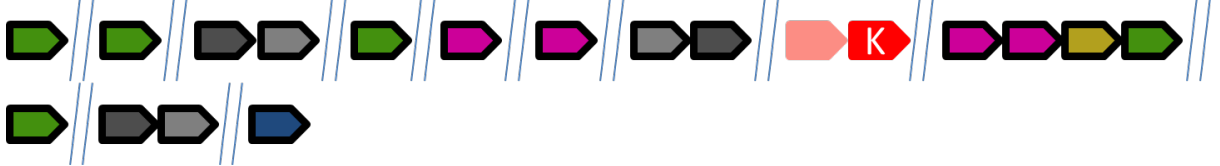
Coprococcus
eutactus
ATCC 27759



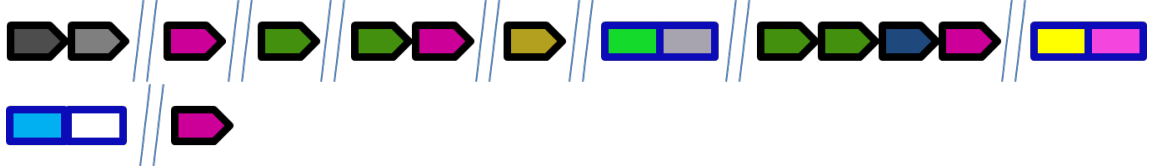
Deferribacter
desulfuricans
SSM1,
DSM 14783



Delta
proteobacterium
NaphS2



Desmospora sp.
8437



Desulfarculus
baarsii 2st14,
DSM 2075



Desulfitobacterium
hafniense DCB-2



Desulfitobacterium
hafniense Y51



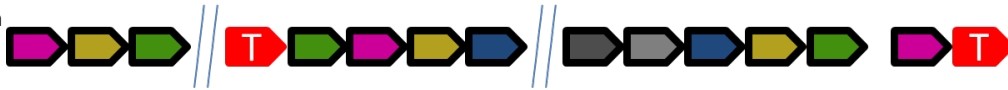
Desulfobulbus
propionicus 1pr3,
DSM 2032



Desulfotomaculum
acetoxidans 5575,
DSM 771



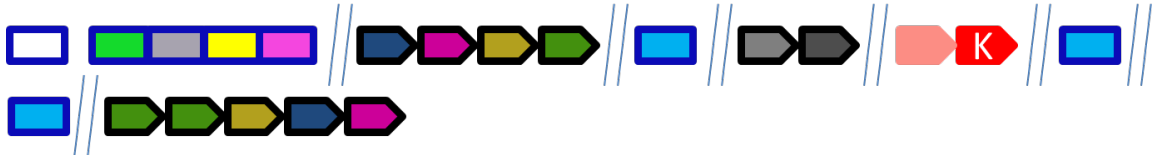
Desulfotomaculum
reducens MI-1



Desulfurispirillum
indicum S5



Dethiobacter
alkaliphilus AHT1



Erysipelotrichaceae
bacterium
5_2_54FAA



Erysipelotrichaceae
bacterium
sp. 3_1_53



Eubacterium
biforme
DSM 3989



Eubacterium
cellulosolvens 6



Eubacterium
dolichum
DSM 3991



Eubacterium
hallii
DSM 3353



Eubacterium
limosum KIST612



Eubacterium
rectale
ATCC 33656



Eubacterium
rectale
DSM 17629



Eubacterium
rectale M104/1



Eubacterium
saburreum DSM
3986



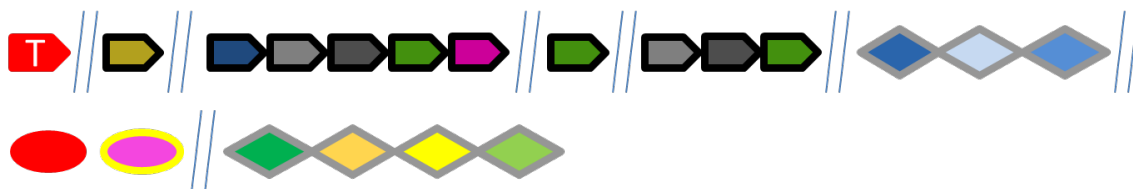
Eubacterium
saphenum ATCC
49989



Eubacterium
ventriosum ATCC
27560



Eubacterium
yurii margaretiae
ATCC 43715



Faecalibacterium
cf. prausnitzii
KLE1255



Faecalibacterium
prausnitzii

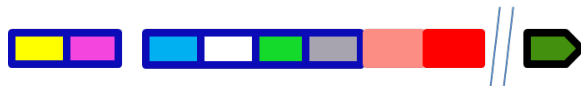
- A2-165
- SL3/3

Faecalibacterium
prausnitzii

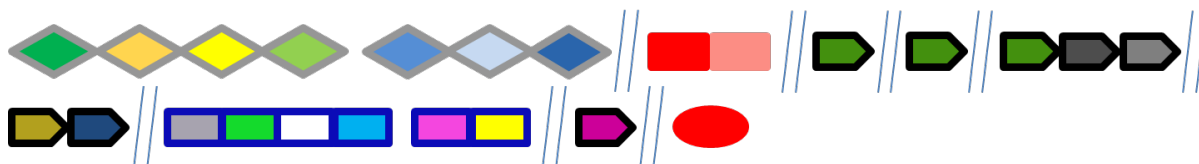
- L2-6
- M21/2



Fervidobacteriu
m nodosum
Rt17-B1



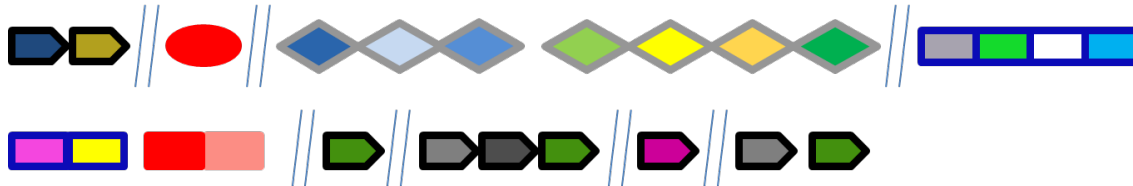
Fusobacterium
gonidiaformans
ATCC 25563



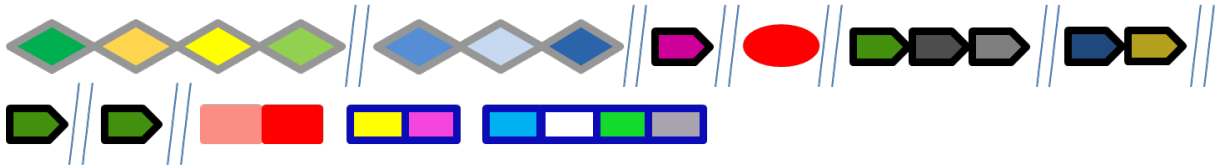
Fusobacterium
mortiferum
ATCC 9817



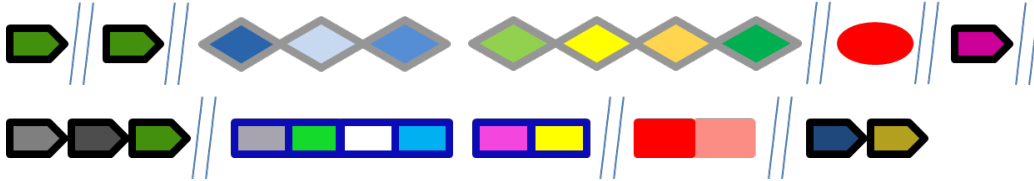
Fusobacterium
nucleatum
nucleatum ATCC
23726



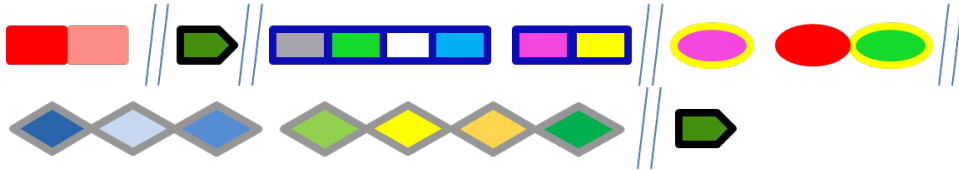
Fusobacterium
nucleatum
nucleatum
ATCC 25586



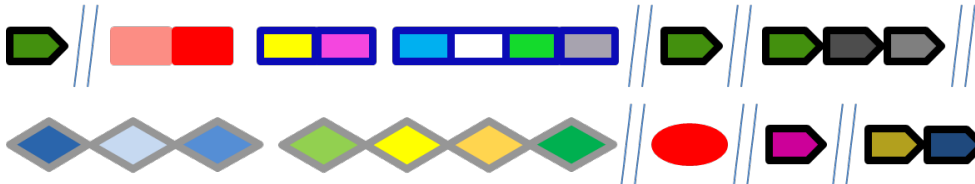
Fusobacterium
nucleatum
polymorphum
ATCC 10953



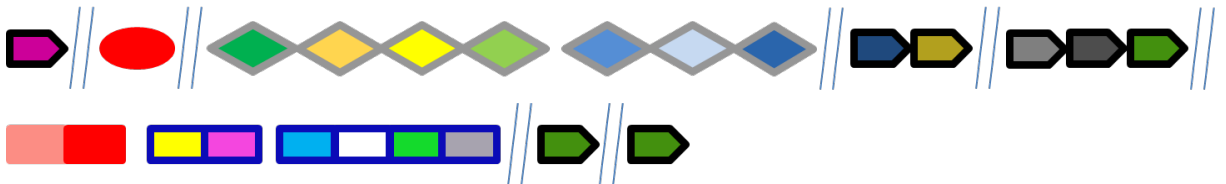
Fusobacterium
nucleatum
vincentii
ATCC 49256



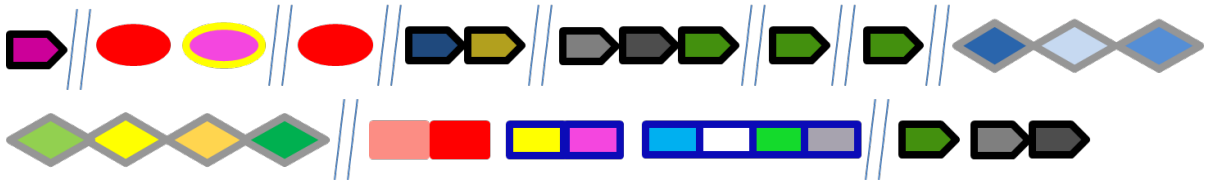
Fusobacterium
periodonticum
ATCC 33693



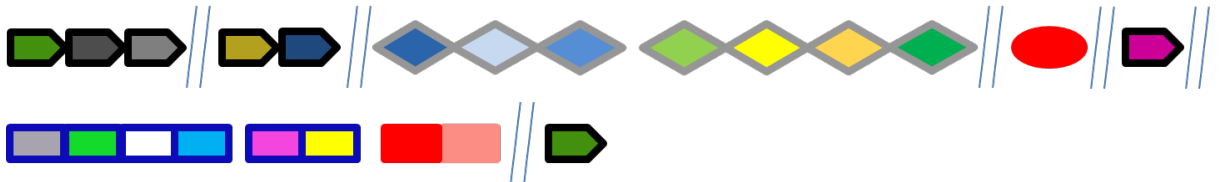
Fusobacterium
sp. 1_1_41FAA



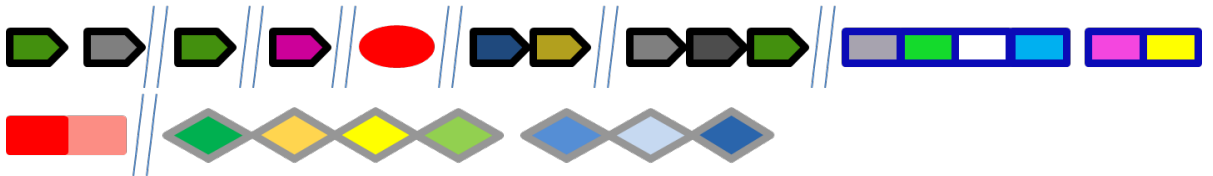
Fusobacterium
sp. 11_3_2



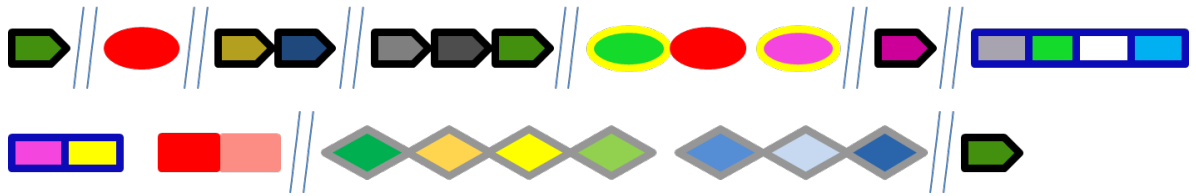
Fusobacterium
sp. 2_1_31



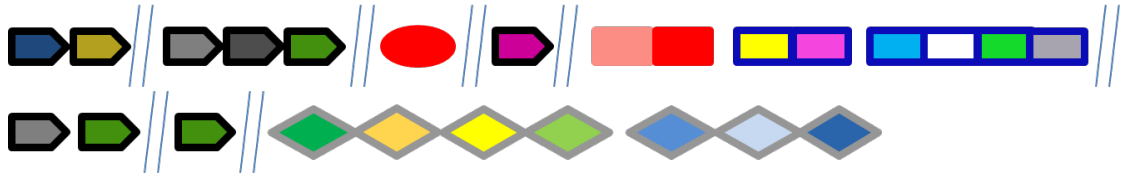
Fusobacterium
sp. 21_1A



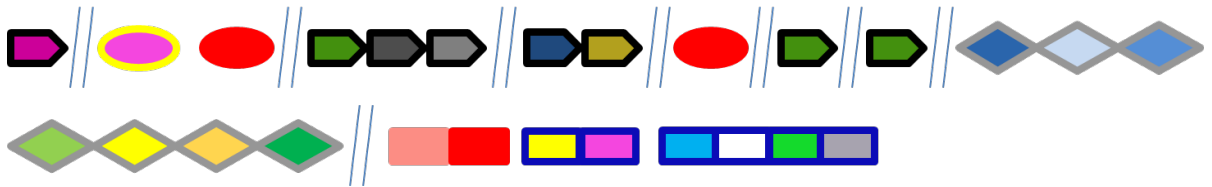
Fusobacterium
sp. 3_1_27



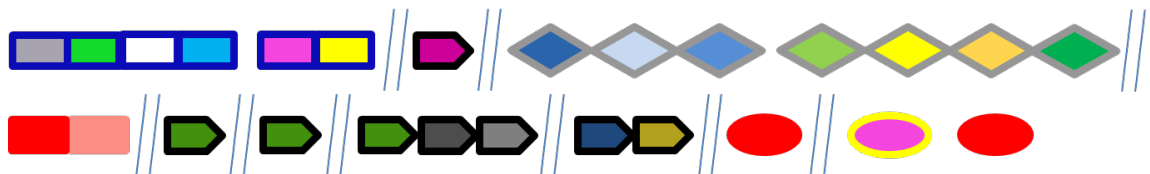
Fusobacterium
sp. 3_1_33



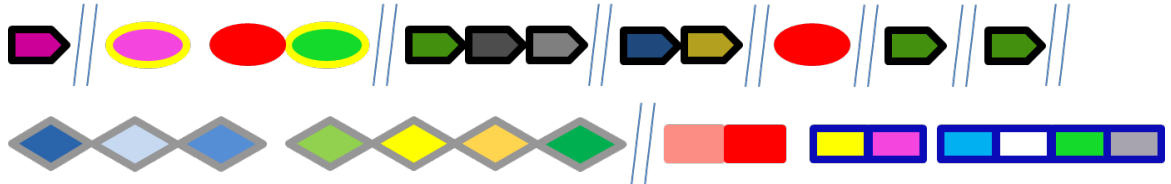
Fusobacterium
sp. 3_1_36A2



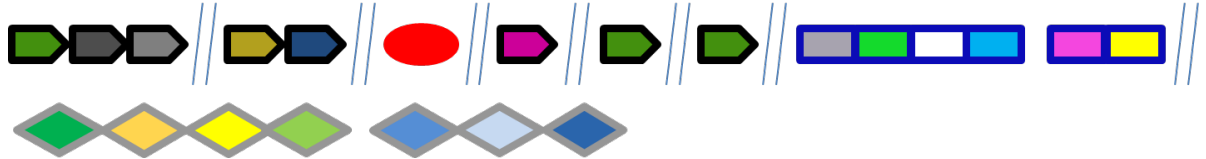
Fusobacterium
sp. 3_1_5R



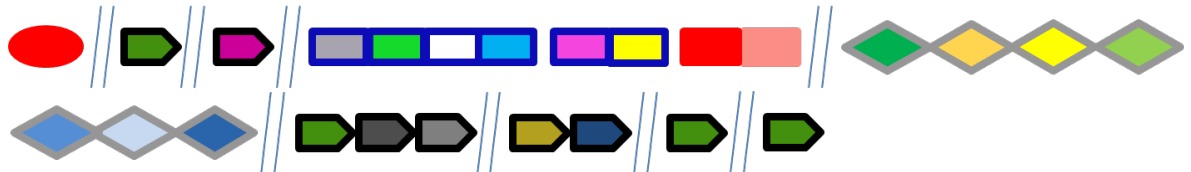
Fusobacterium
sp. 4_1_13



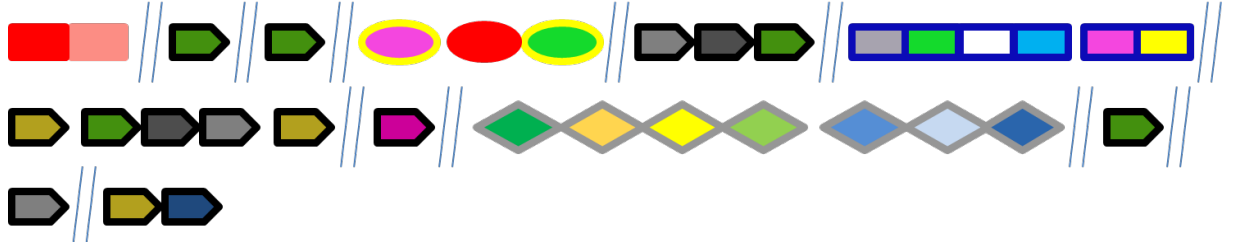
Fusobacterium
sp. 7_1



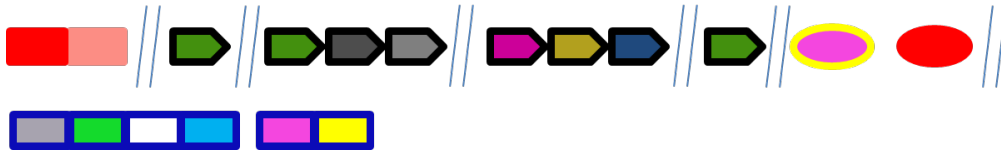
Fusobacterium
sp. D11



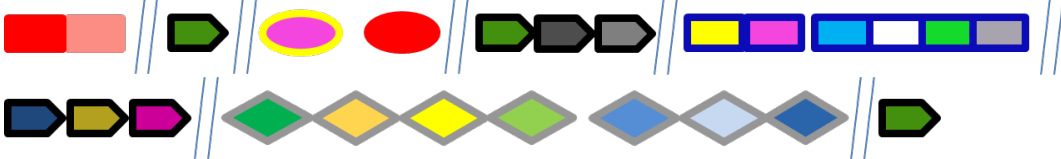
Fusobacterium
sp. D12



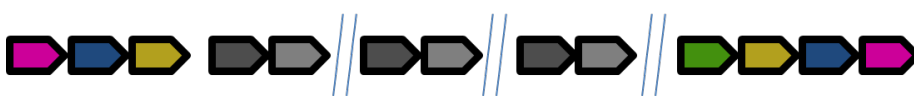
Fusobacterium
ulcerans
ATCC 49185



Fusobacterium
varium
ATCC 27725



Geobacter
bemidjensis
Bem,
DSM 16622



Geobacter
metallireducens
GS-15



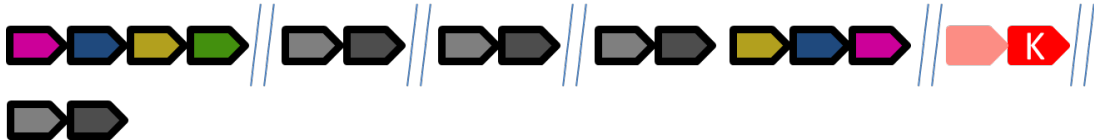
Geobacter sp.
FRC-32



Geobacter sp.
M18



Geobacter sp.
M21



Geobacter
uraniireducens
Rf4



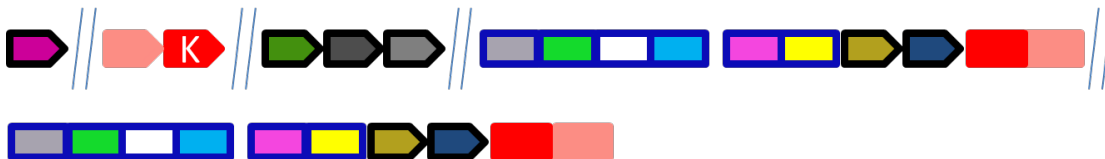
Halanaerobium
praevalens GSL,
DSM 2228



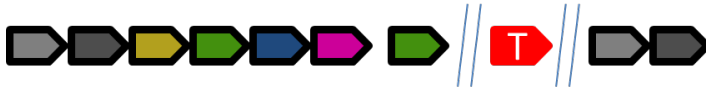
Haliangium
ochraceum
SMP-2,
DSM 14365



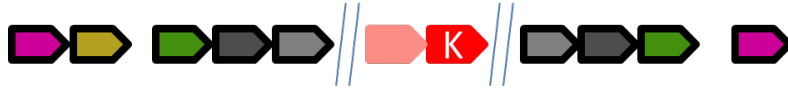
Haloplasma
contractile
SSD-17B



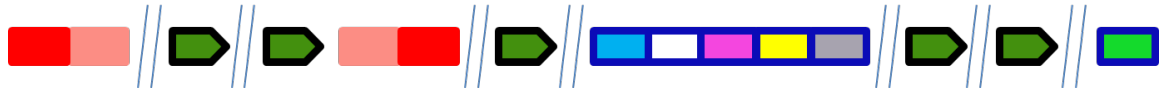
Heliobacterium
modesticaldum
Ice1



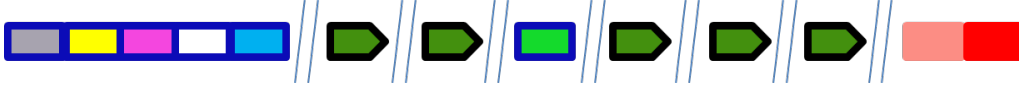
Ilyobacter
polytropus
CuHBu1,
DSM 2926



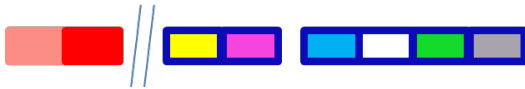
Intrasporangium
calvum 7KIP,
DSM 43043



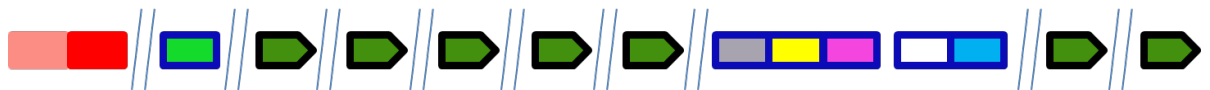
Janibacter sp.
HTCC2649



Kosmotoga
olearia TBF
19.5.1



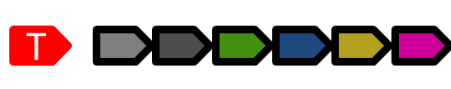
Kribbella flavida
IFO 14399, DSM
17836



Lachnospiraceae
bacterium
3_1_57FAA_CT1



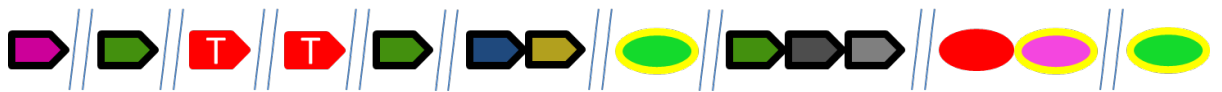
Lachnospiraceae
bacterium sp.
5_1_63FAA



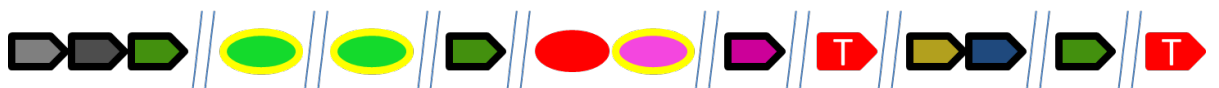
Lachnospiraceae
sp. F0167



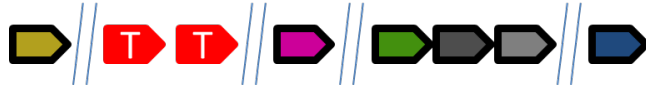
Megasphaera
genomosp.
type_1 28L



Megasphaera
genomosp. UPII
199-6



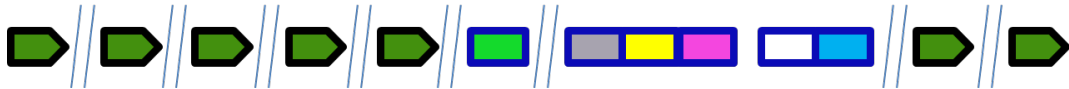
Megasphaera
micronuciformis
F0359



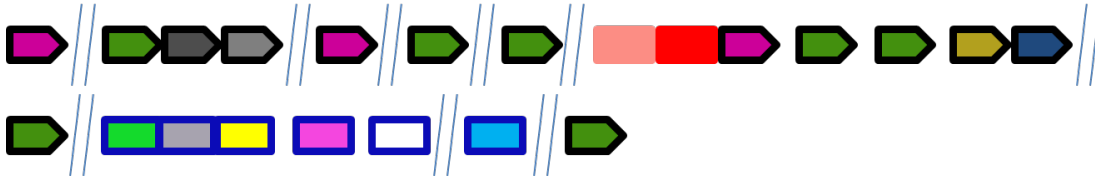
Micromonospora
aurantiaca
ATCC 27029



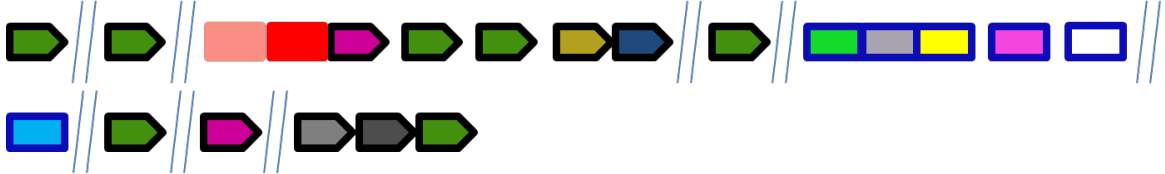
Micromonospora
sp. L5



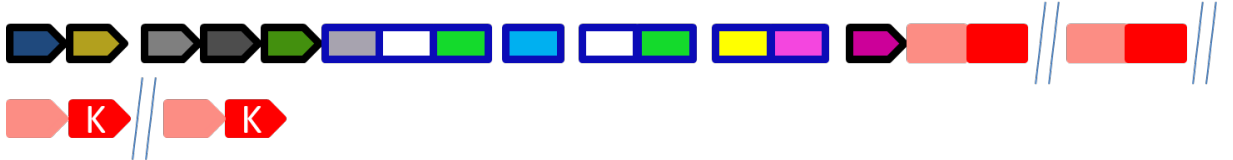
Myxococcus
fulvus HW-1



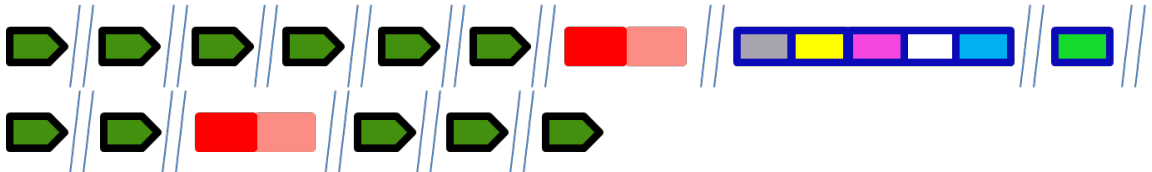
Myxococcus
xanthus DK 1622



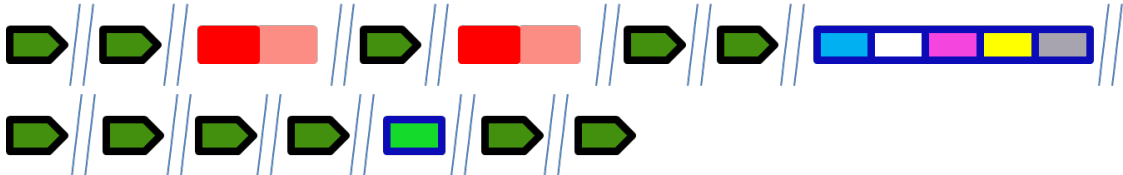
Natranaerobius
thermophilus JW/
NM-WN-LF



Nocardioideae
bacterium
Broad-1



Nocardioides sp.
JS614



Odoribacter
splanchnicus
1651/6
DSM 20712



Peptoniphilus
duerdenii
ATCC BAA-1640



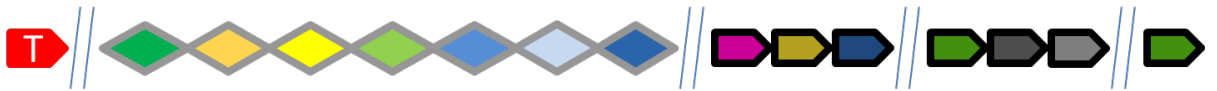
Peptoniphilus
harei ACS-146-V-
Sch2b



Peptoniphilus
lacrimalis 315-B



Peptoniphilus sp.
F0131



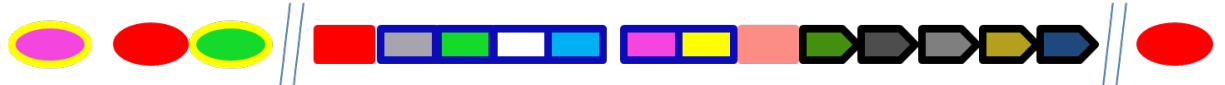
Peptoniphilus
sp. F0141



Petrotoga
mobilis SJ95



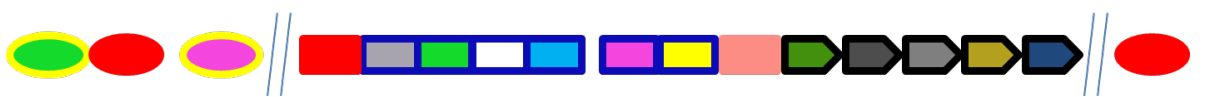
Porphyromonas
asaccharolytica
PR426713P-I



Porphyromonas
endodontalis
ATCC 35406



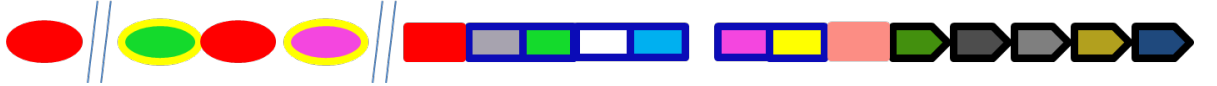
Porphyromonas
gingivalis
• ATCC 33277
• W83



Porphyromonas
gingivalis TDC60



Porphyromonas
uenonis 60-3



Propionibacterium
acidifaciens
F0233



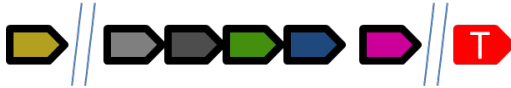
Pseudoramibacter
alactolyticus
ATCC 23263



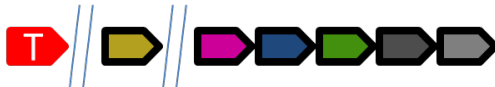
Rhodoferrax
ferrireducens
T118



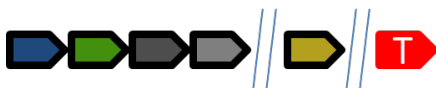
Roseburia
intestinalis
L1-82



Roseburia
intestinalis
M50/1



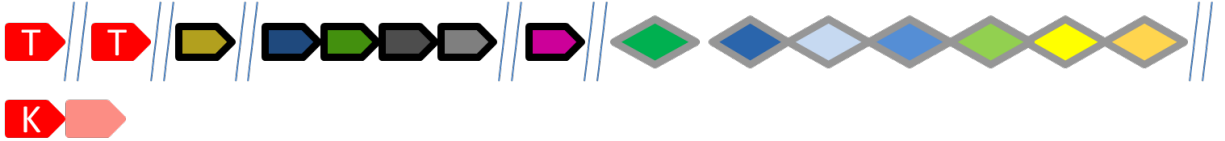
Roseburia
intestinalis
XB6B4



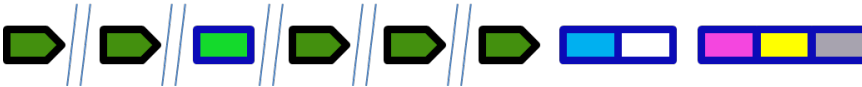
Roseburia
inulinivorans
DSM 16841



Ruminococcaceae
bacterium D16



Salinispora
arenicola
CNS-205



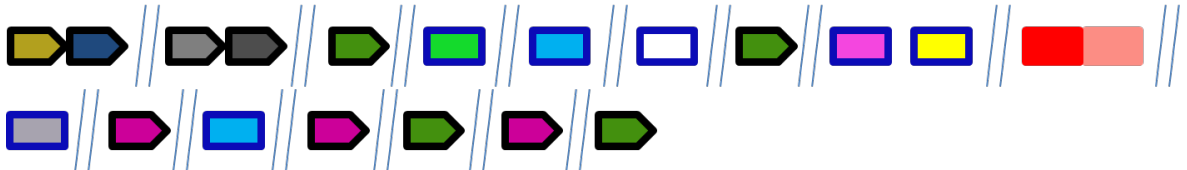
Salinispora
tropica CNB-440



Shuttleworthia
satelles DSM
14600



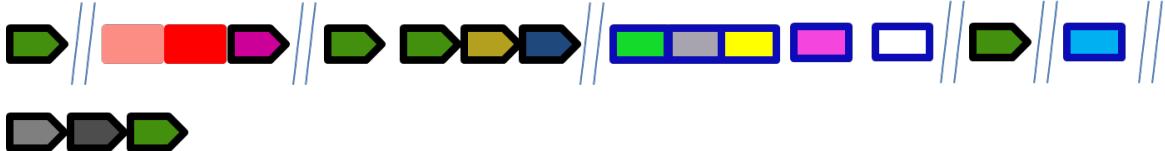
Sorangium
cellulosum
So ce 56



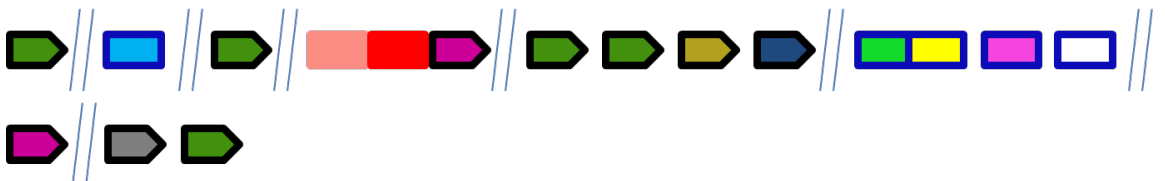
Stackebrandtia
nassauensis
LLR-40K-21
DSM 44728



Stigmatella
aurantiaca
DW4/3-1 (1)



Stigmatella
aurantiaca
DW4/3-1 (2)



Subdoligranulum
variabile
DSM 15176



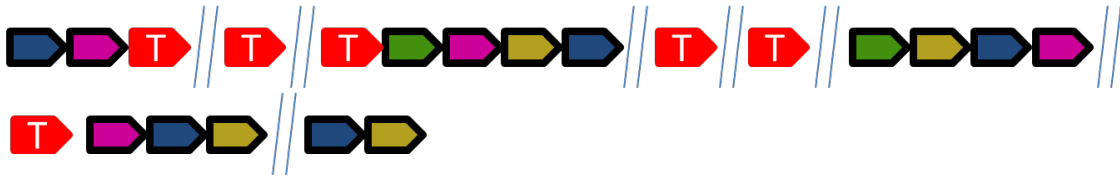
Symbiobacterium
thermophilum
14863



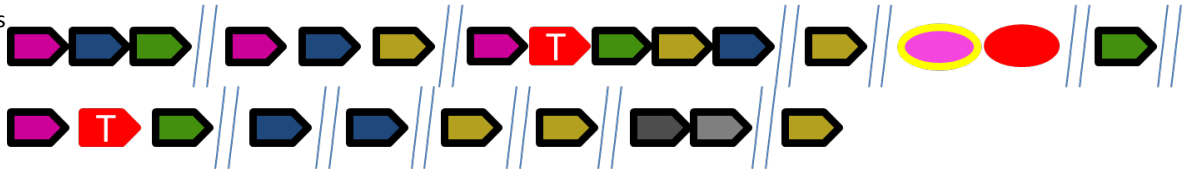
Syntrophobacter
fumaroxidans
MPOB



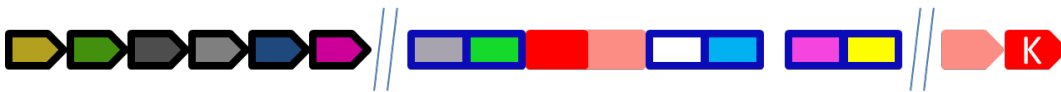
Syntrophomonas
wolfei
Goettingen,
DSM 2245B



Syntrophothermus
lipocalidus
DSM 12680



Thermoanaerob
acter
tengcongensis
MB4T



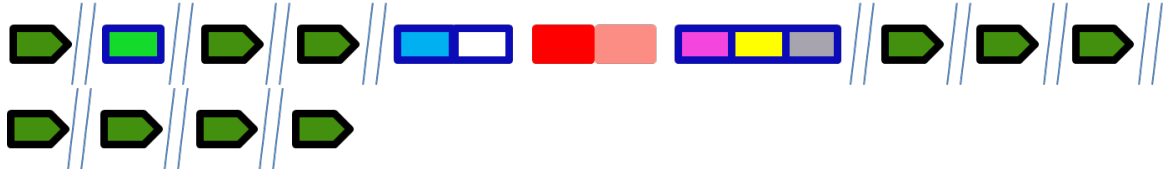
Thermoanaeroba
acter wiegellii
Rt8.B1



Thermoanaerob
acterium
thermosaccharo
lyticum
DSM 571



Thermomonospo
ra curvata
DSM 43183



Thermosinus
carboxydivorans
Nor1



Thermosipho
africanus TCF52B



Thermosipho
melanesiensis
BI429



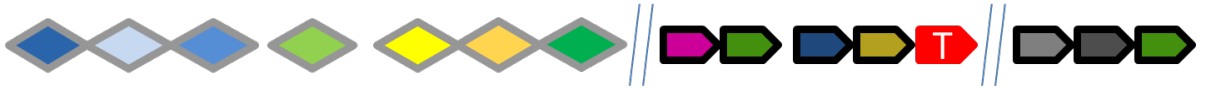
Thermotoga
lettingae TMO



Thermotogales
sp. mesG1.Ag.4.2



Treponema
phagedenis
F0421



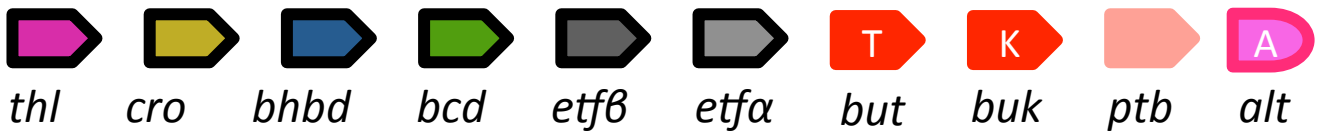
Treponema
vincentii
ATCC 35580



Verrucosipora
maris
AB-18-032



Acetyl-CoA Pathway



Glutarate Pathway



4-Aminobutyrate Pathway



Lysine Pathway

