FIG S9. *Rickettsia* transport and metabolism of host-acquired ribonucletoides.

(A) Current knowledge of *Rickettsia* ribonucleotide transport. The five Tlc ribonucleotide transporters are shown as previously characterized (1, 2). The substrates of Tlc2 and Tlc3, as well as the transport mechanism(s) for UMP, AMP and GMP (3–5), remain unknown.

(B) Rickettsiae acquire host UMP, UTP and CTP to drive the synthesis of additional pyrimidine ribonucleotides, as well as all pyrimidine deoxyribonucleotides.

(C) Host-acquired guanosine (GMP, GDP and GTP) and adenosine (AMP and ATP) ribonucleotides independently drive the synthesis of guanosine and adenosine deoxyribonucleotides. Regarding GTP metabolism, rickettsiae encode stringent response regulatory proteins, including SpoT hydrolases and synthetases (highly variable in number across rickettsial species), as well as the guanosine-5'-triphosphate,3'-diphosphate pyrophosphatase GppA (highly conserved across *Rickettsia* genomes) (6). Rickettsiae also contain deoxyguanosinetriphosphate triphosphohydrolase (Dgt), which hydrolyzes dGTP to form deoxyguanosine, the functional significance of which is not clear. Finally, rickettsiae harbor SAICAR synthetase (PurC), which typically functions in both purine and thiamine metabolism. As these pathways are disintegrated in rickettsiae, PurC is an orphan enzyme with unknown functional significance. CAIR, 1-(5-Phospho-D-ribosyl)-5-amino-4-imidazolecarboxylate; SAICAR, 1-(5'-Phosphoribosyl)-5-amino-4-(N-succinocarboxamide)-imidazole.

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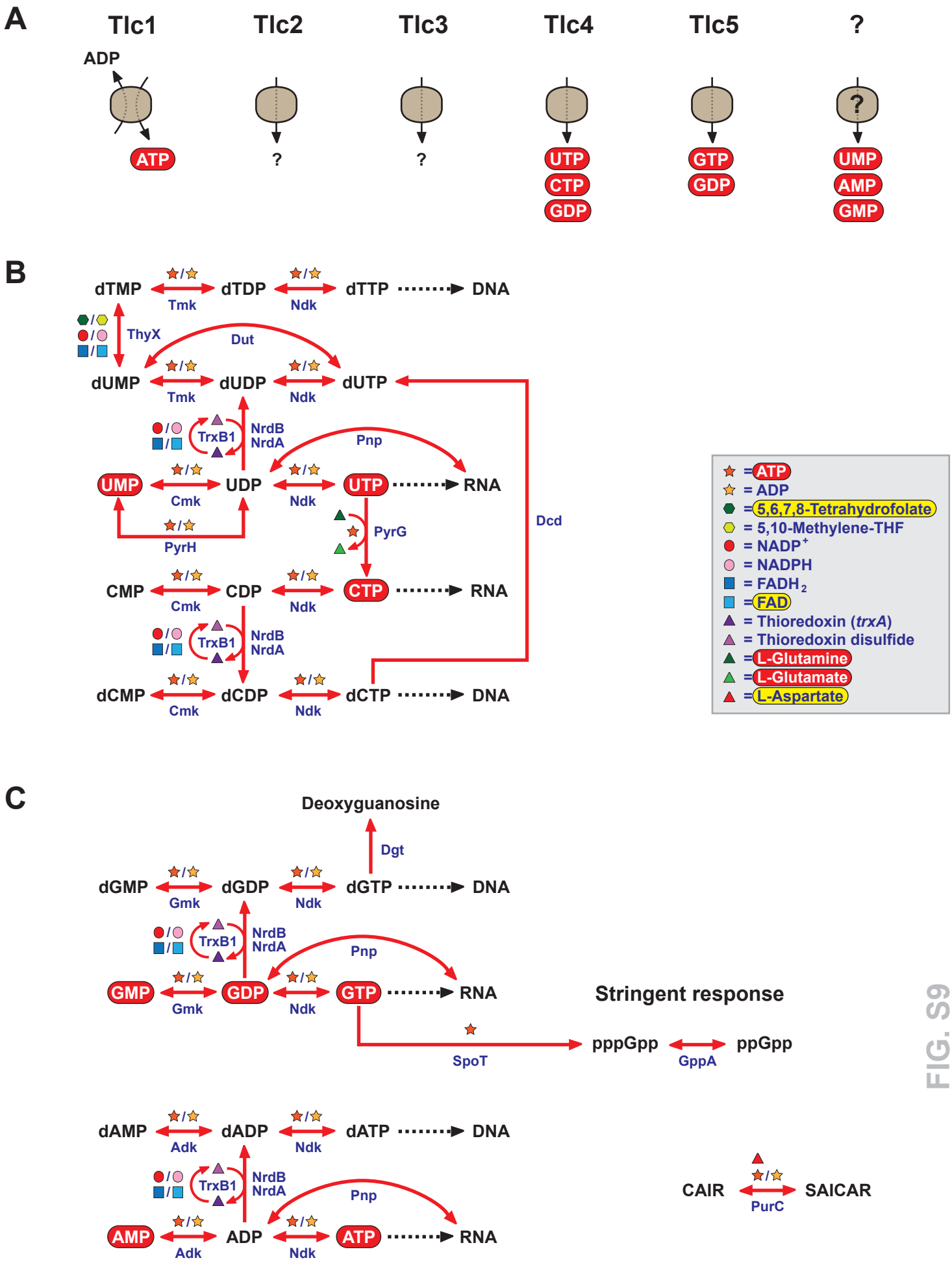
A
Tlc1
Tlc2
Tlc3
Tlc4
Tlc5
?
ADP
ATP
?
?
UTP
CTP
GDP
GTP
GDP
?
UMP
AMP
GMP
B
dTMP
dTDP
dTTP
DNA
Tmk
Ndk
ThyX
Dut
dUMP
dUDP
dUTP
NrdB
NrdA
TrxB1
Pnp
UMP
UDP
UTP
RNA
Cmk
PyrH
PyrG
Dcd
CMP
CDP
CTP
dCMP
dCDP
dCTP
= ATP
= ADP
= 5,6,7,8-Tetrahydrofolate
= 5,10-Methylene-THF
= NADP+
= NADPH
= FADH2
= FAD
= Thioredoxin (trxA)
= Thioredoxin disulfide
= L-Glutamine
= L-Glutamate
= L-Aspartate
C
Deoxyguanosine
Dgt
dGMP
dGDP
dGTP
Gmk
GMP
GDP
GTP
Stringent response
pppGpp
ppGpp
SpoT
GppA
dAMP
dADP
dATP
Adk
AMP
ADP
ATP
CAIR
SAICAR
PurC

FIG. S9