

# **Genome Analyses of Spirochetes: A Study of the Protein Structures, Functions and Metabolic Pathways in *Treponema pallidum* and *Borrelia burgdorferi***

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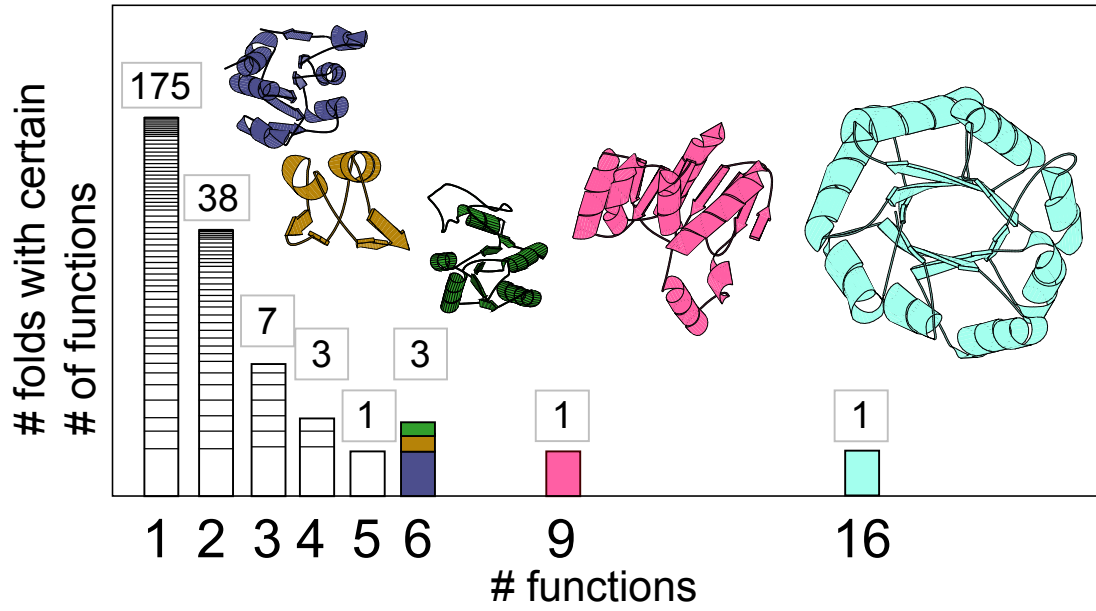


Figure 1.

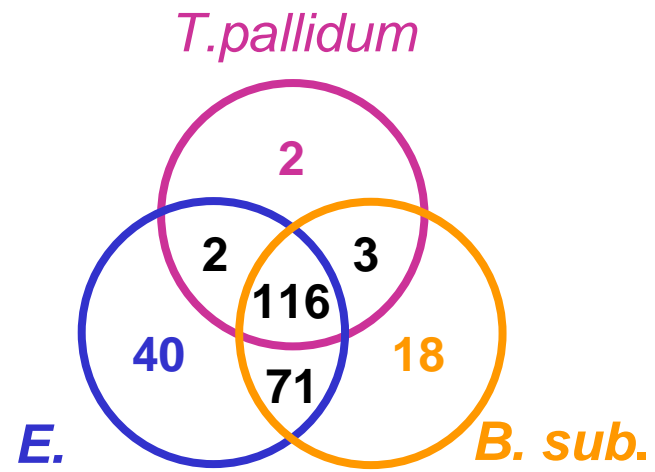
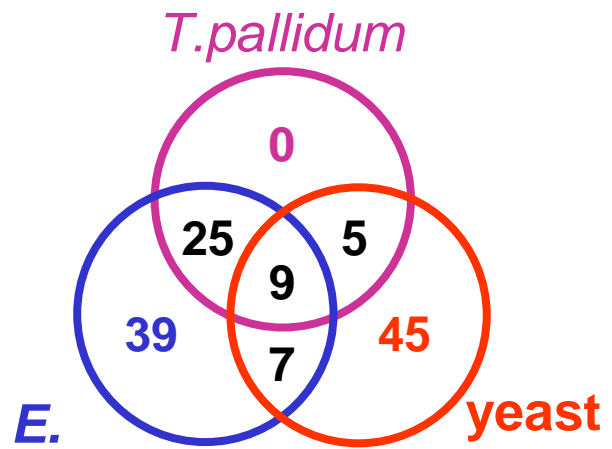
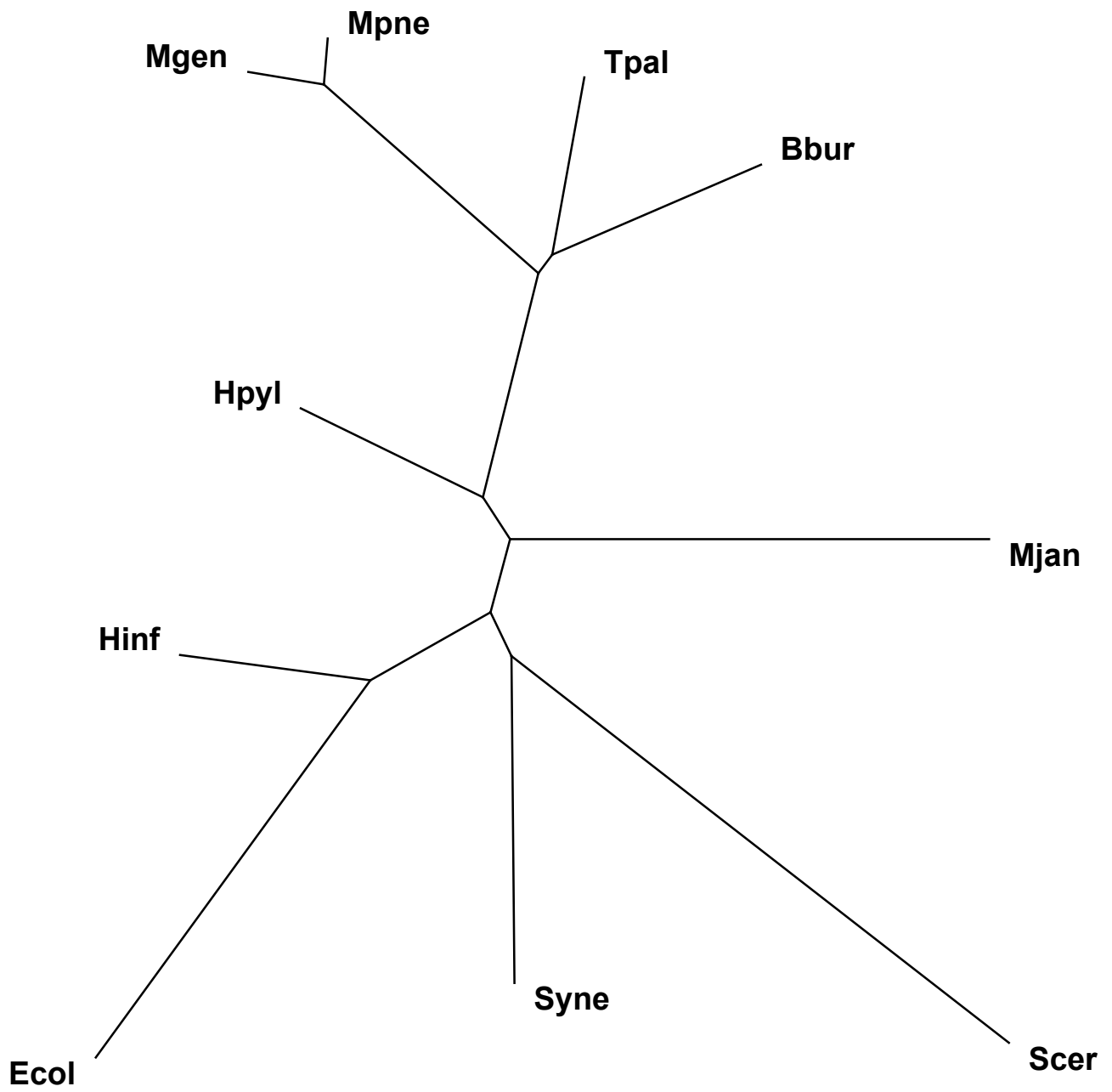
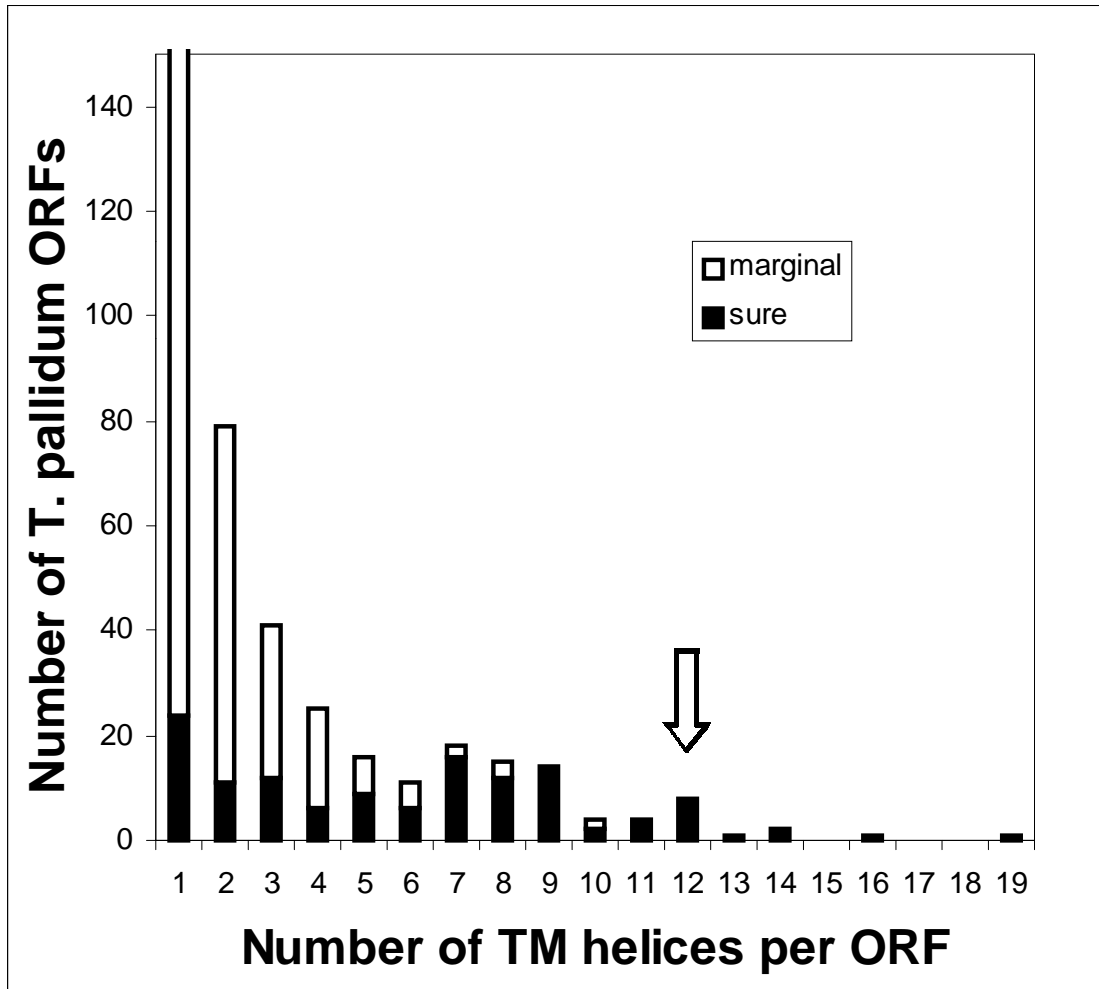


Figure 2.

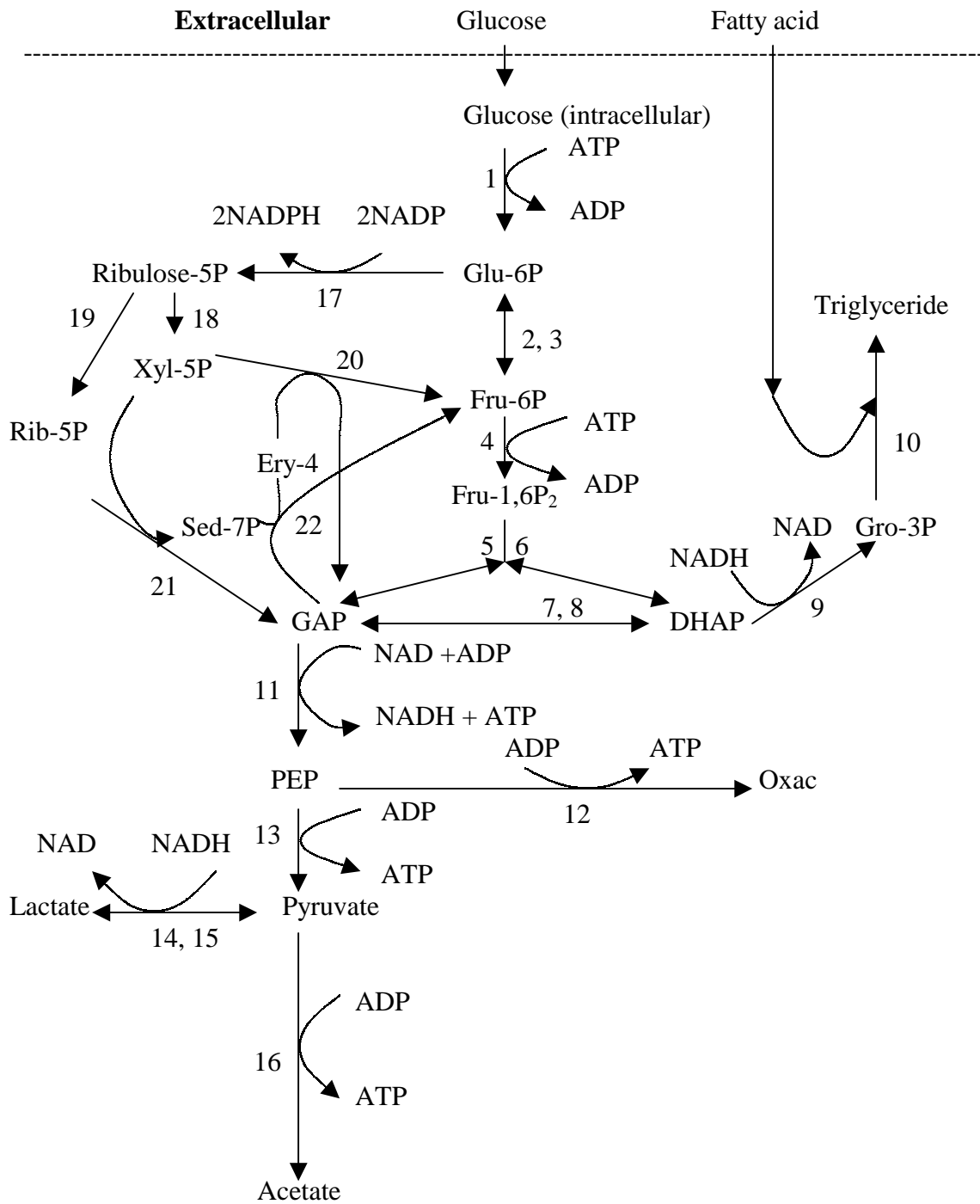


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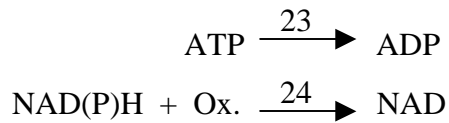
Figure 3



**Figure 4.**



**Figure 5.**



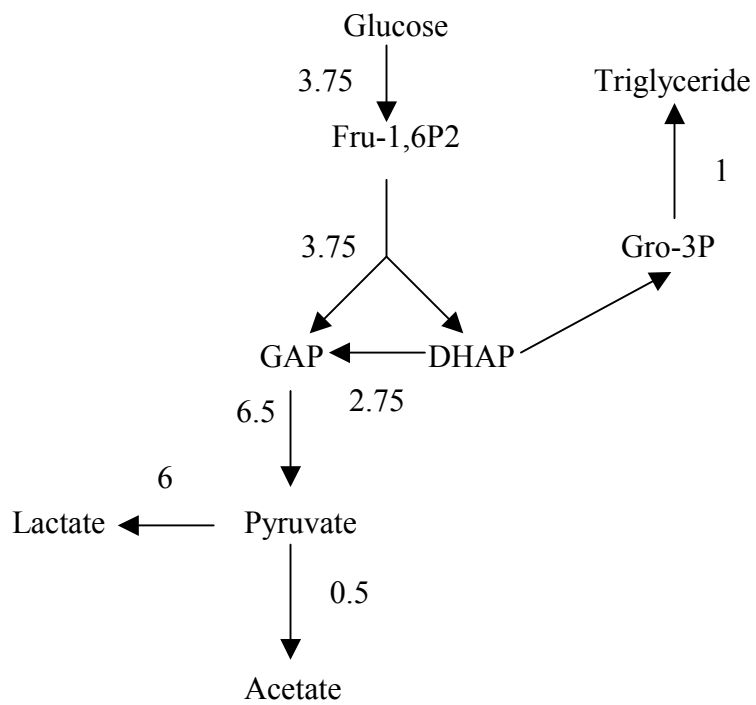
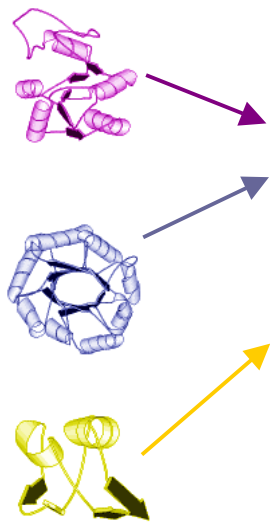


Figure 6.



Fold		Number in <b>T. pallidum</b>	Number in <b>B. burgdorferi</b>	Number in <b>E. coli</b>
Name	ID			
P-loop NTP hydrolase	3.24	43	67	72(4)
TIM Barrel	3.1	14	20	93(1)
like Ribonuclease H	3.47	13	12	50(6)
class II aaRS synthetases	4.61	13	10	15(28)
alpha-alpha superhelix	1.91	11	6	6(62)
like Ferredoxin	4.34	11	6	82(2)
adenine NT alpha hydrolase	3.17	7	10	16(27)
FAD/NAD(P)-binding domain	3.4	6	4	38(7)
Periplasmic binding proteins - like II	3.82	7	9	36(9)
long helix oligomers	1.105	6	6	5(70)

**Table 1.**



<b>Pathways</b>	<b>Enzyme</b>	<b>EC number</b>	<i>T pallidum</i>	<i>B. burgdorferi</i>
<b>Glycolysis</b>	hexoinase	2.7.1.1	+	--
	glucose-6-phosphate isomerase	5.3.1.9	+	+
	aldolase	4.1.2.13	+	+
	triosphosphate isomerase	5.3.1.1	+	+
	glyceraldehyde-phosphate dehydrogenase	1.2.1.12	+	+
	phosphoglycerate kinase	2.7.2.3	+	+
	phosphoglycerate mutase	5.4.2.1	+	+
	enolase	4.2.1.11	+	+
	pyruvate kinase	2.7.1.40	--	+
<b>Pentose Phosphate Pathway</b>	glucose-6-phosphate dehydrogenase	1.1.1.49	+	+
	6-phosphoglucono lactonase	3.1.1.31	--	--
	phosphogluconate dehydrogenase	1.1.1.44	+	+
	ribulose-phosphate 3-epimerase	5.1.3.1	+	--
	ribose-5-phosphate isomerase	5.3.1.6	+	+
	transketolase	2.2.1.1	+	--
	transaldolase	2.2.1.2	--	--
<b>Others</b>	lactate dehydrogenase	1.1.1.28 1.1.1.27	+(28)	+(27)
	phosphoenolpyruvate carboxykinase	4.1.1.32	+	--
	glycerol-3-phosphate dehydrogenase	1.1.1.94	+	+
	pyruvate synthase	1.2.7.1	+	--
	phosphate acetyltransferase	2.3.1.8	+	+
	acetate kinase	2.7.2.1	+	+
	NADH oxidase	1.6.-.-	+	+

**Table 2.**