

**Table S1.** Experimentally characterised bacterial AT3 acetyltransferases

Protein Name	SGNH fused	Species	Accession number	Reference
OafA STM	Y	<i>Salmonella</i>	WP_000639473	(Slauch <i>et al.</i> 1996)
OafB STM (F2GtrC)	Y	<i>Salmonella</i>	SIU02679	(Kintz <i>et al.</i> 2015)
HI_OafA	Y	<i>Haemophilus</i>	AAX87447	(Fox <i>et al.</i> 2005)
OatA (LMO129)	Y	<i>Listeria</i>	CAC99369	(Aubry <i>et al.</i> 2011)
Lot3 (PurB)	Y	<i>Neisseria</i>	WP_002245844	(Kahler <i>et al.</i> 2006)
OatA (Ip_0856)	Y	<i>Lactobacillus</i>	WP_011101182	(Bernard <i>et al.</i> 2011)
OatB (Ip_0925)	Y	<i>Lactobacillus</i>	YP_004888877	(Bernard <i>et al.</i> 2011)
OatA	Y	<i>Staphylococcus</i>	WP_000379821	(Bera <i>et al.</i> 2005)
yvhB (OatA)	Y	<i>Lactococcus</i>	WP_021723064	(Veiga <i>et al.</i> 2007)
Adr (OatA)	Y	<i>Streptococcus</i>	WP_001220853	(Crisóstomo <i>et al.</i> 2006)
PgII	Y	<i>Neisseria</i>	WP_003687310.1	(Aas <i>et al.</i> 2007; Anonsen <i>et al.</i> 2017)
OatB (BAS5308)	N	<i>Bacillus</i>	YP_031545	(Laaberki <i>et al.</i> 2011)
ExoZ	N	<i>Rhizobium</i>	WP_010975904	(Buendia <i>et al.</i> 1991)
GumF	N	<i>Xanthomonas</i>	WP_011037591	(Katzen <i>et al.</i> 1998)
GumG	N	<i>Xanthomonas</i>	AAA86375	(Katzen <i>et al.</i> 1998)
Lag1	N	<i>Legionella</i>	AAA75102	(Zou <i>et al.</i> 1999)
NodX	N	<i>Rhizobium</i>	P08888	(Davis, Evans and Johnston 1988; Firmin <i>et al.</i> 1993)
NolL	N	<i>Rhizobium</i>	Q52778	(Pacios Bras <i>et al.</i> 2000)
OacA	N	<i>Shigella</i>	P23214	(Verma <i>et al.</i> 1991)
OacA Bt	N	<i>Burkholderia</i>	WP_009895914	(Brett <i>et al.</i> 2011)
OacA Bp	N	<i>Burkholderia</i>	WP_004545264	(Brett <i>et al.</i> 2011)
OacB	N	<i>Shigella</i>	NP_706267	(Wang <i>et al.</i> 2014)
OacC	N	<i>Shigella</i>	EFW62204	(Knirel <i>et al.</i> 2014)
OacD	N	<i>Shigella</i>	WP_000282635	(Sun <i>et al.</i> 2014)
WbaK	N	<i>Salmonella</i>	Q54131	(Hong <i>et al.</i> 2013)
WbiA	N	<i>Burkholderia</i>	WP_004194788	(Brett, Burtnick and Woods 2003)
WciG	N	<i>Streptococcus</i>	WP_001230914	(Geno, Saad and Nahm 2017)
WcjE	N	<i>Streptococcus</i>	WP_000170108	(Calix and Nahm 2010)
WechH (YiaH)	N	<i>Escherichia</i>	P37669	(Kajimura <i>et al.</i> 2006)
CmmA	N	<i>Streptomyces</i>	Q70J69	(Menendez <i>et al.</i> , 2004)

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