

TRIPLE SUGAR IRON AGAR: INTERPRETATION OF RESULTS

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After you have scored your TSI Agar slants (slant quality/butt quality...black + or -), you should suggest a species of bacterium which matches those metabolic traits discovered. While by no means definitive, the following are TSI Agar reactions typical of a number of prominent species which can be distinguished by this medium. Note that, for a given set of TSI traits, there are many more possible species than only those listed.

TYPICAL REACTIONS OF ENTERIC BACTERIA ON TSI AGAR:

<u>BACTERIUM</u>	<u>SLANT</u>	<u>BUTT</u>	<u>H₂S</u>	<u>COMMENTS:</u>
<i>Pseudomonas aeruginosa</i>	R	R	-	GI inhabitant, causes wound, GU infections
<i>Alcaligenes faecalis</i>	R	R	-	GI inhabitant, opportunistic pathogen if GU
<i>Shigella dysenteriae</i>	R	Y	-	Causes food infection dysentery
<i>Shigella schmitzii</i>	R	Y	-	
<i>Shigella boydi</i>	R	Y	-	
<i>Shigella flexneri</i>	R	Y	-	
<i>Shigella flexneri, Newcastle</i>	R	Y/YG	-	
<i>Salmonella paratyphi A</i>	R	YG	-	
<i>Salmonella choleraesuis</i>	R	YG	-	Causes "hog cholera"
<i>Salmonella gallinarum</i>	R	Y	+	
<i>Salmonella pullorum</i>	R	YG	+	
<i>Salmonella enteritidis</i>	R	YG	+	
<i>Salmonella typhimurium</i>	R	YG	+	Causes food poisoning
<i>Salmonella typhi</i>	R	Y	+	Causes typhoid fever
<i>Proteus mirabilis</i>	R(+)	Y/YG	+	black-green butt, slant can be black
<i>Klebsiella pneumoniae</i>	Y	Y or YG	-	Pneumonia in debilitated patients (nosocomial)
<i>Enterobacter aerogenes</i>	Y	YG	-	
<i>Enterobacter cloacae</i>	Y	YG	-	
<i>Aerobacter aerogenes</i>	Y	YG	-	Similar to <i>Klebsiella</i> , but non-respiratory
<i>Escherichia coli</i>	Y	YG	-	Most common of GI flora
<i>Citrobacter freundii</i>	Y	YG	+	one of "paracolon" group (non-pathogenic)
<i>Proteus vulgaris</i>	Y	YG	+	Causes GU infections, highly motile.