

## Sub-typing of isolates

**Table. Overview of available and commonly used typing methods for the following agents: Salmonella (Typhimurium, Enteritidis and remaining serotypes), Campylobacter spp, STEC (same as VTEC), Listeria monocytogenes, Yersinia enterocolitica, Shigella spp, norovirus, Hepatitis A, Cryptosporidium spp and Giardia.**

Typing method	Salmonella Enteritidis	Salmonella Typhimurium	All other Salmonella serotypes	STEC (VTEC)	Shigella spp	Campylobacter spp	Yersinia enterocolitica	Listeria monocytogenes	Norovirus	Hepatitis A	Cryptosporidium spp	Giardia
Determine species <sup>1</sup>					X	X <sup>2</sup>					X	
Determine serotype	X	X	X	X			X <sup>3</sup>	X				
Determine group (sero or geno)					X			X	X <sup>4</sup>	X <sup>4</sup>		
PFGE	(X) <sup>5</sup>	(X) <sup>4</sup>	X	X	X	X	X	X				
Sequence typing						X <sup>6</sup>			X	X	X	X
Phage typing	X	X										
Resistance typing	X	X	X									
MLVA		X <sup>7</sup>		X <sup>8</sup>	X <sup>9</sup>		X <sup>9</sup>	X <sup>9</sup>				
Determine virulence gene profile				X								

<sup>1</sup> Strictly speaking not a typing method, but included as some bacteria may only be routinely diagnosed to the genus level (in principle relevant for all types of bacteria).

<sup>2</sup> In several countries *Campylobacter* is only routine typed to the level of genus.

<sup>3</sup> Biotype determination also used for *Y. enterocolitica*

<sup>4</sup> Geno group or type

<sup>5</sup> May give limited additional information if phage typing has already been performed.

<sup>6</sup> *flaA*-SVR typing.

<sup>7</sup> If available, this will be the method of choice for this serotype, using the Lindstedt et al protocol.

<sup>8</sup> Protocols in use for O157 (at least two protocols in use). Protocols for non-O157 STECs are also in use in some countries.

<sup>9</sup> Methods exist, but a standard protocol is not currently in use. This means that at present data are not being compared between countries.

Note. Typing methods of choice change over time and this table will need periodic revisions.

Note. 'STEC' is also called 'VTEC'. These names are completely synonymous. 'EHEC' is also sometimes used to denote STEC/VTEC.