



### Faecal Source - PCR Marker Assay Specificity

The specificity of the assays, as tested against known faecal samples is shown in the table below. These assays have all been tested against at least 200 known faecal samples

Marker Assay	Recommended	Sensitivity	Detected in faeces from:	Low level non-specificity	Negative in faeces from:	Target
General GenBac	yes	High	Human, Cow, Sheep, Deer, Goat, Pig, Rabbit, Possum, Cat, Dog, Horse, Duck, Swan, Seagull, Geese, Chicken		(can be low in seagull and geese faeces)	Bacteroides 16S rRNA
Human BiADO	Yes (2 <sup>nd</sup> preference for human)	Medium - less sensitive than BacH	Human, Seagulls	Possum, Dog, Duck, Swan	Cow, Sheep, Deer, Horse, Goat, Pig, Rabbit, Geese, Chicken Cat	Bifido adolensentis
Human BacH	Yes (1 <sup>st</sup> preference for human)	Medium - most sensitive human assay	Human, Cat, Dog, Rabbit, Possum, Chicken, Goat	Swans, Geese, Seagulls, Pigs	Cow, Sheep, Deer, Horse, Duck	Bacteriodales species
Human HumM3	No	Low – only detected in highly polluted samples	Human, Possum, Rabbit	Horse, Goat, Dog, Seagull	Cow, Sheep, Deer, Pig, Duck, Swan, Geese, Chicken Cat	cell wall protein
Ruminant BacR	Yes	High	Cow, Sheep, Deer, Goat	Cat, some human municipal sewage, possum, geese	Human (individuals), Horse, Pig, Rabbit, Duck, Swan, Seagull, Chicken, Dog	Bacteriodales species
CowM2	Only if highly polluted	Low	Cow, Deer	Some human municipal sewage	Sheep, Goat, Horse, Pig, Human (individuals), Ducks, Swan, Geese, Seagulls, Cat, Dog, Possum, Rabbit	bovine feces-specific genetic markers
Schill Sheep	Yes	Medium	Sheep	Goat, some human municipal sewage, Duck, Dog	Cow, Deer, Human (individuals), Swan, Geese, Seagull, Chicken, Horse, Cat, Pig, Possum, Rabbit	Cytochrome <i>b</i>

Marker Assay	Recommended	Sensitivity	Detected in faeces from:	Low level non-specificity	Negative in faeces from:	Target
Canine DogBac	Yes	High	Dog	Some human municipal sewage	Human (individuals), Cow, Sheep, Deer, Goat, Horse, Pig, Rabbit, Possum, Duck, Swan, Seagull, Geese, Chicken, Cat	Bacteroidales species
Avian GFD	Yes	Medium	Duck, Swan, Seagull, Geese, Chicken		Human, Cow, Sheep, Deer, Horse, Goat, Pig, Rabbit, Possum Cat, Dog	16s rRNA gene
Avian E2	Only if highly polluted	Low	Duck	Swan, Seagull, Geese, Chicken, Pig	Human, Cow, Sheep, Deer, Horse, Goat, Rabbit, Possum Cat, Dog	Desulfovibrio species
Gull-2	Only if highly polluted	Low	Seagull	None	Duck, Swan, Geese, Chicken, Human, Cow, Sheep, Deer, Horse, Goat, Pig, Rabbit, Possum Cat, Dog	16S rRNA gene of Catellicoccus marimammalium

- Results for all assays except Gull-2 are reported on a quantitative basis per 100 mls of water.
- BacR (ruminant marker) is also reported as a proportion of the GenBac marker to give an estimation of the level of ruminant contamination.

In several marker assays “human municipal sewage” is detected at low levels. Because of the nature and source of municipal sewage we cannot be certain that it is a pure human source. The positive result seen in these assays may in fact be a true positive for the target marker.

Specificity testing of sources is an on-going activity. If testing other than listed in the above table is desirable, please enquire at the email address below. Note that other marker assays will not have been tested against this range of known faecal samples.

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