

Bioscreen Faecal Microbial Analysis

Collection Date: 7/05/2014	Receipt Date: 8/05/2014	Process Date: 9/05/2014
		Completed Date: 16/5/2014
Name: Bullock, Jodie Address: 61 Prince Charles Rd Frenchs Forest, NSW 2086		Referred by: Gajjar, Ameeta
Sample ID: 113506	DOB: 9/12/1976	

Bullock, Jodie

Total Count	cfu/gm	Hi	Lo	Normal Range	% Distribution	Normal Distribution
Total Bacterial Count	6.49 x 10 ¹⁰			(1.00 x 10 ⁹ - 1.00 x 10 ¹²)		
Aerobe:Anaerobe Ratio	0.03		Lo	(1.0 - 2.0)		(Aerobe count/Anaerobe count)x1000
Aerobes						
Total Aerobe Count	2.02 x 10 ⁶		Lo	(1.00 x 10 ⁷ - 1.00 x 10 ⁸)		
E.coli coliform	1.50 x 10 ⁶		Lo	(7.00 x 10 ⁶ - 9.00 x 10 ⁷)		
<i>Escherichia coli</i>	1.50 x 10 ⁶		Lo		74.07%	(70-90%)
Non-E.coli coliforms	2.25 x 10 ⁵			(<5.00 x 10 ⁵)		
<i>Citrobacter koseri</i>	2.25 x 10 ⁵				11.11%	(<5%)
Enterococcus (Total)	3.00 x 10 ⁵			(<5.00 x 10 ⁵)	14.81%	(<5%)
<i>Enterococcus faecium</i>	3.00 x 10 ⁵				14.81%	
Yeast (Total)	<1.00 x 10 ¹			(<1.00 x 10 ⁴)		

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REVIEW

Name: Bullock, Jodie

Anaerobes	cfu/gm	Hi	Lo	Normal Range	% Distribution	Normal Distribution
Total Anaerobe Count	6.49 x 10 ¹⁰			(1.00 x 10 ⁸ - 1.00 x 10 ¹²)		
Bacteroides (Total)	5.11 x 10 ¹⁰			(5.00 x 10 ⁸ - 9.50 x 10 ¹¹)	78.65%	(90-95%)
<i>Bacteroides vulgatus</i>	1.50 x 10 ¹⁰				23.06%	
<i>Bacteroides thetaiotaomicron</i>	3.00 x 10 ¹⁰				46.13%	
<i>Bacteroides uniformis</i>	3.00 x 10 ⁹				4.61%	
<i>Alistipes onderdonkii</i>	3.00 x 10 ⁹				4.61%	
<i>Bacteroides ovatus</i>	1.50 x 10 ⁸				0.23%	
Porphyromonas (Total)	3.00 x 10 ⁹	Hi		(<5.00 x 10 ⁸)	4.61%	(<10%)
<i>Butyrivibrio fibrisolens</i>	3.00 x 10 ⁹				4.61%	
Eubacterium (Total)	3.00 x 10 ⁹	Hi		(<1.00 x 10 ⁹)	4.61%	(<15%)
<i>Eggerthella lenta</i>	3.00 x 10 ⁹				4.61%	
Lactobacillus (Total)	1.12 x 10 ⁷	Hi		(5.00 x 10 ⁵ - 1.00 x 10 ⁷)	0.02%	(0.5-1.5%)
<i>Lactobacillus acidophilus</i>	1.12 x 10 ⁷				0.02%	
Bifidobacterium (Total)	7.49 x 10 ⁹	Hi		(5.00 x 10 ⁵ - 5.00 x 10 ⁸)	11.53%	(5-11%)
<i>Bifidobacterium animalis</i>	7.49 x 10 ⁹				11.53%	
Clostridium (Total)	3.74 x 10 ⁸			(<5.00 x 10 ⁸)	0.58%	(1-10%)
<i>Clostridium ramosum</i>	3.74 x 10 ⁸				0.58%	

Detection limits: Aerobes 1 x 10⁴; Yeasts 1 x 10¹; Anaerobes 1 x 10⁸ cfu/mL. Results are reported as less than these figures if not cultured.

* = presumptive identification

Organisms identified by MALDI-TOF MS (Matrix Assisted Laser Desorption/ Ionisation - Time of Flight) Mass Spectrometry.

Reference ranges obtained from Bioscreen data (n=177)

Hi = high; "Lo" = Low; "cfu" = colony forming units (viable count)



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Specialist Testing Laboratory

Dear Dr Gajjar, Ameeta

18 May 2014

Ref: Bullock, Jodie

Thank you for referring your patient to Bioscreen-Medical.

Faecal Microbiology Summary Report

Laboratory Receipt Date: 8/05/2014

The following is a summary and comments of the faecal microbial flora from the sample received on this particular date.

Faecal Aerobes

E.Coli: Undergrowth

Total Aerobic Flora: Undergrowth

Comments

E. coli

- The reason for the low E.coli percentage distribution/ total count in the sample is unclear. However, recent exposure to antipyretics and/or analgesia (eg. paracetamol) may cause a marked change in the faecal ecology resulting in a significant alteration of the E.coli viable count (Bioscreen data, 2001). Recent supplementation with fructo-oligosaccharide (FOS) may also have suppressed growth of this organism.
- E.coli is an important intestinal micro-organism responsible for the synthesis of essential amino acids (eg. tryptophan, phenylalanine, tyrosine)^{1,2,3} vitamins (folic acid, vit K2)^{4,5}, and coenzymes (CoQ10)⁶ important for cellular metabolism and reproduction. Determination into the levels of these essential amino acids in patients with persistent and chronic low levels of E.coli may be beneficial. Acute depletion of tyrosine and phenylalanine has shown to have selective effect on decision-making in depressive patients⁷. Tyrosine depletion has also shown to have recognition and working memory impairment⁸.
- Consider supplementing oral sugars (eg galactose, fucose) to increase the densities of current intestinal coliforms (eg E.coli)^{9,10} as opposed to adding a different strain with probiotics. Health professionals can contact Bioscreen for further information.
- Consider checking the folate, vitamin K2, CoQ10 levels and supplement if indicated.
- Consider checking the levels of the following essential amino acids: tryptophan, tyrosine, phenylalanine, and supplement if indicated.

Faecal Anaerobes

Porphyromonas sp.: Overgrowth

Eubacterium sp.: Overgrowth

Bifidobacterium sp.: Overgrowth

Lactobacillus sp.: Overgrowth

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Comments

Prevotella/Porphyromonas sp.

- Prevotella, and Porphyromonas spp are anaerobic Gram negative bacilli, previously classified in the genus Bacteroides. Both genera are generally referred to as the 'pigmented', bile-sensitive anaerobes composing of saccharolytic and asaccharolytic species with Prevotella spp. being saccharolytic and Porphyromonas spp. asaccharolytic.
- The relative absence of Bacteroides fragilis and an increased distribution of Porphyromonas spp. may reflect a low availability of bile acids in the gastrointestinal tract.
- Consider supplementing bile salt to aid digestion and to suppress the pigmented anaerobes (eg Porphyromonas spp.) if indicated.

Bifidobacterium/Lactobacillus sp.

- Members of the genera Lactobacillus and Bifidobacterium are Gram positive bacilli and lactic acid producing bacteria. A few members of both genera can grow in a microaerophilic environment; but most are obligate anaerobes.
- High levels of Bifidobacterium spp. in the anaerobic microbial flora. Increased level of Bifidobacterium may stimulate amine production¹¹. Similarly, increased levels of this organism may also lower the colonic pH¹², modifying faecal microbial metabolism particularly the Bacteroides spp, resulting in a decreased production of volatile fatty acids¹³, and altering intestinal epithelial barrier function increasing passive intestinal permeability to small and large molecules.
- High levels of Lactobacillus spp. in the anaerobic microbial flora. Metabolic acidosis and neurological dysfunction (depressed conscious state, confusion, aggressive behaviour, slurred speech and ataxia) have been reported in patients with increased level of lactobacilli in the anaerobic faecal flora¹⁴.
- Cease all oral supplementation of lactic acid probiotics if indicated.

Eubacterium spp: Overgrowth

- Eubacterium sp is generally regarded as one of the most frequently recovered organisms in the gastrointestinal tract, second only to Bacteroides spp.
- The increased distribution of this organism in the gastrointestinal tract is unclear, however, the cell wall of the organism has shown to be proinflammatory and arthritogenic.

Faecal Yeasts

Comments

- Undetectable levels of yeasts in the sample.

We trust these comments assist you in the interpretation of Bioscreen reports. If you require further assistance please do not hesitate to contact Bioscreen anytime.

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