

Appendix 1. Summary of Literature on Substrate Used in Trials on BC Production								
			Substrate		Additional Carbon		Nitrogen	
Authors	Microbe	strain	Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources	
1 Bae et al 2004	G. xylinus	BPR2001	Fructose + 2 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	BPR2001	Fructose + 4 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	BPR2001	Fructose + 6 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	BPR2001	Fructose + 1 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	EP1	Fructose	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	EP1	Fructose + 2 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	EP1	Fructose + 4 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	EP1	Fructose + 6 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
1 Bae et al 2004	G. xylinus	EP1	Fructose + 1 g/L Agar	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> + 20 mL/L CSL	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Sucrose	50			YE	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Sucrose	50	Glycerol + EtOH	100 + 14	YE	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	Glycerol + EtOH	100 + 14	YE	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Fructose	50	Glycerol + EtOH	100 + 14	YE	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Sorbitol	50	Glycerol + EtOH	100 + 14	YE	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Lactose	50	Glycerol + EtOH	100 + 14	YE	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:2 ratio of YE + MSG	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:2 ratio of YE + casein hydrolysate	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:2 ratio of YE +G erenetin	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:2 ratio of YE + 10 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:1 ratio of YE + MSG	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:1 ratio of YE + MSG	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:1 ratio of YE + MSG	
2 Chavez-Pacheco et al 2005	G. xylinus	IFO13693	Glucose	50	EtOH	14	1:1 ratio of YE + MSG	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Glucose	20			YE	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Glucose	20			Casein hydrolysate	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Glucose	20			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Sucrose	20			YE	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Sucrose	20			Casein hydrolysate	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Sucrose	20			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Fructose	20			YE	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Fructose	20			Casein hydrolysate	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	Fructose	20			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	EtOH	20			YE	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	EtOH	20			Casein hydrolysate	
3 Coban and Biyik (2011)	A.lovaniensis	HBB5	EtOH	20			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
4	Dahman et al 2010	G. xylinus	ATCC700178	Fructose	40			CSL
4	Dahman et al 2010	G. xylinus	ATCC700178	Sucrose	40			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
4	Dahman et al 2010	G. xylinus	ATCC700178	Glucose	40			
4	Dahman et al 2010	G. xylinus	ATCC700178	Galactose	40			
4	Dahman et al 2010	G. xylinus	ATCC700178	Mannose	40			
4	Dahman et al 2010	G. xylinus	ATCC700178	Xylose	40			
4	Dahman et al 2010	G. xylinus	ATCC700178	Arabinose	40			
4	Dahman et al 2010	G. xylinus	ATCC700178	Mix_1-wheat straw (WS)	40			
4	Dahman et al 2010	G. xylinus	ATCC700178	Mix_2-distillers dried grains (DDGS)	40			
4	Dahman et al 2010	G. xylinus	ATCC700178	Mix_3-corn fibers (CF)	40			
5	El-Saeid et al 2008	G. xylinus	ATCC10245	Mannitol	25	None		YE + 3 g/L peptone
5	El-Saeid et al 2008	G. xylinus	ATCC10245	Glucose	20	Citric acid	1.15	80 mL CSL
5	El-Saeid et al 2008	G. xylinus	ATCC10245	Glucose	20	Citric acid	1.15	80 mL CSL + 1:1 ratio of YE + peptone
5	El-Saeid et al 2008	G. xylinus	ATCC10245	Glucose + 10 mL EtOH	20	Citric acid	1.15	80 mL CSL + 1:1 ratio of YE + peptone
5	El-Saeid et al 2008	G. xylinus	ATCC10245	Coconut milk 20 mL	20	Citric acid	1.15	1:1 ratio of YE + peptone
5	El-Saeid et al 2008	G. xylinus	ATCC10245	Mannitol	25	Citric acid	1.15	80 mL CSL
5	El-Saeid et al 2008	G. xylinus	ATCC10245	acid-heat treated Molasses	110	Citric acid	1.15	80 mL CSL
5	El-Saeid et al 2008	G. xylinus	ATCC10245	acid-heat treated Molasses	110	None		1:0.6 ratio of YE + peptone
6	Goh et al 2012	Tea fungus	NG	Sucrose	50			
6	Goh et al 2012	Tea fungus	NG	Sucrose	70			
6	Goh et al 2012	Tea fungus	NG	Sucrose	90			
6	Goh et al 2012	Tea fungus	NG	Sucrose	110			
6	Goh et al 2012	Tea fungus	NG	Sucrose	130			
6	Goh et al 2012	Tea fungus	NG	Sucrose	150			
6	Goh et al 2012	Tea fungus	NG	Sucrose	170			
6	Goh et al 2012	Tea fungus	NG	Sucrose	190			
6	Goh et al 2012	Tea fungus	NG	Sucrose	210			
6	Goh et al 2012	Tea fungus	NG	Sucrose	230			
6	Goh et al 2012	Tea fungus	NG	Sucrose	250			
7	Goelzer et al 2009	G. xylinus	ATCC23769	Glucose	40	Citric acid	1.15	1:1 ratio of YE + peptone
7	Goelzer et al 2009	G. xylinus	ATCC23769	Glucose	40	Citric acid	1.15	1:1 ratio of YE + peptone
7	Goelzer et al 2009	G. xylinus	ATCC23769	Rice Bark	40	Citric acid	1.15	1:1 ratio of YE + peptone
7	Goelzer et al 2009	G. xylinus	ATCC23769	Rice Bark + Glucose	40	Citric acid	1.15	1:1 ratio of YE + peptone
8	Ha et al 2008	G. hansenii	KCTC10505BP	Beer fermentation waste	50	Acetic acid	1.5	YE

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
8	Ha et al 2008	G. hansenii	KCTC10505BP	Beer fermentation waste + 10 g/L glucose	10	Succinate	0.2	Peptone
8	Ha et al 2008	G. hansenii	KCTC10505BP	Beer fermentation waste - Autolyzed	50	Acetic acid	1.5	
8	Ha et al 2008	G. hansenii	KCTC10505BP	Beer fermentation waste - Autolyzed + 10 g/L glucose	10	Succinate	0.2	
8	Ha et al 2008	G. hansenii	KCTC10505BP	Beer fermentation waste - Hydrolyzed	50	Acetic acid	1.5	
8	Ha et al 2008	G. hansenii	KCTC10505BP	Beer fermentation waste - Hydrolyzed +10 g/L glucose	10	Succinate	0.2	
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Fructose	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Lactose	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Sucrose	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Maltose	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Mannitol	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Inositol	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	Glycerol	20	Citric acid	1.15	1:1 ratio of YE + peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L peptone
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L casein hydrolysate
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L beef extract
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L malt extract
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L NaNO <sub>3</sub>
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L NH <sub>4</sub> Cl
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L KNO <sub>3</sub>
9	Hungund & Gupta 2010a	G. persimmonis	GH-2	20 g/L Glucose	20	Citric acid	1.15	5 g/L NH <sub>4</sub> NO <sub>3</sub>
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Fructose	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Lactose	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Sucrose	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Maltose	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Mannitol	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Inositol	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glycerol	20	Citric acid	1.15	1:1 ratio of YE + peptone
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L YE
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L casein hydrolysate
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L beef extract
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L malt extract

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10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L NaNO <sub>3</sub>
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L NH <sub>4</sub> Cl
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L KNO <sub>3</sub>
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L NH <sub>4</sub> NO <sub>3</sub>
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose	20	Citric acid	1.15	5 g/L Urea
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 10 mL/L MEtOH	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 10 mL/L EtOH	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 20 mL/L EtOH	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 100 ppm Zn	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 100 ppm Ca	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 100 ppm Cu	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 100 ppm Mg	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 100 ppm Mn	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose + 100 ppm Ni	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	Glucose (control)	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-Molasses	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-starch hydrolysate	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-sugar cane medium	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-coconut water medium	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-coconut milk medium	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-pineapple juice medium	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-orange juice medium	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-pomegranate juice medium	20	Citric acid	1.15	
10	Hungund & Gupta 2010b	Enterobacter amnigenus	GH-1	HS-medium (control)	20	Citric acid	1.15	
11	Heo et al 2002	G. sp	A9	Glucose	10			no nitrogen source
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L CH <sub>3</sub> COONH <sub>4</sub>
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L C <sub>2</sub> H <sub>8</sub> N <sub>2</sub> O <sub>4</sub>
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L NH <sub>4</sub> Cl
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L (NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub>
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L NH <sub>4</sub> NO <sub>3</sub>
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L KNO <sub>3</sub>

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				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L NaNO <sub>3</sub>
11	Heo et al 2002	G. sp	A9	Glucose	10			3 g/L NaNO <sub>2</sub>
11	Heo et al 2002	G. sp	A9	Glucose	40			2 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
11	Heo et al 2002	G. sp	A9	Glucose	40			2.5 g/L KH <sub>2</sub> PO <sub>4</sub> -
11	Heo et al 2002	G. sp	A9	Glucose	40			0.5 g/L to 6 g/L Na <sub>2</sub> HPO <sub>4</sub> .12H <sub>2</sub> O
11	Heo et al 2002	G. sp	A9	Glucose	40			0.5 MgSO <sub>4</sub> .7H <sub>2</sub> O
11	Heo et al 2002	G. sp	A9	Glucose	40			0.002 g/L FeSO <sub>4</sub> .7H <sub>2</sub> O
11	Heo et al 2002	G. sp	A9	Glucose	40	EtOH	14	
11	Heo et al 2002	G. sp	A9	Glucose	40			3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
11	Heo et al 2002	G. sp	A9	Glucose	40	EtOH	14	
11	Heo et al 2002	G. sp	A9	Glucose	20	Citric acid	1.2	5 g/L Bactopeptone + 5 g/L YE
12	Ishida et al 2002	G. xylinus	EP1 & BPR2001	Fructose (control)	40			20 mL/L 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
12	Ishida et al 2002	G. xylinus	EP1 & BPR2001	Fructose + CSL + 1.5 g/L Acetan	40			20 mL/L 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
12	Ishida et al 2002	G. xylinus	EP1 & BPR2001	Fructose + 1.5 g/L Agar	40			20 mL/L 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
12	Ishida et al 2002	G. xylinus	EP1 & BPR2001	Fructose (control)	40			20 mL/L 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
12	Ishida et al 2002	G. xylinus	EP1 & BPR2001	Fructose + 1 g/L Agar	40			20 mL/L 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
12	Ishida et al 2002	G. xylinus	EP1 & BPR2001	Fructose + 1 g/L Acetan	40			20 mL/L 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
13	Ishihara et al 2002	G. hansenii	ATCC10821	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. hansenii	ATCC10821	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. hansenii	ATCC10821	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. hansenii	IFO14816	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. hansenii	IFO14816	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. hansenii	IFO14816	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. pasteurianus	ATCC10245	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. pasteurianus	ATCC10245	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. pasteurianus	ATCC10245	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. pasteurianus	IFO14814	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. pasteurianus	IFO14814	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. pasteurianus	IFO14814	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC23769	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC23769	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC23769	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC23770	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone

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				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
13	Ishihara et al 2002	G. xylinus	ATCC23770	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC23770	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53264	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53264	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53264	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53524	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53524	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53524	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53582	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53582	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53582	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53749	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53749	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53749	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53750	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53750	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	ATCC53750	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO3288	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO3288	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO3288	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13693	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13693	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13693	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13772	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13772	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13772	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13773	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13773	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO13773	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO15237	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO15237	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO15237	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO15606	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
13	Ishihara et al 2002	G. xylinus	IFO15606	D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
13	Ishihara et al 2002	G. xylinus	IFO15606	D-xylose + D-xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 80 ml CSL	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 1 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 2 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 3 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + (control)	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 1 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 2 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 3 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 1 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 2 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 1 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
14	Joseph et al 2003	G. xylinus	ATCC700178	Fructose + 2 g/L polyacrylamide acid	20			80 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
15	Keshk & Sameshima 2006(a)	G. xylinus	ATCC10245	Glucose	20	Citric acid	1.15	1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO13772	Glucose	20	Citric acid	1.15	1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO13773	Glucose	20	Citric acid	1.15	1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO14815	Glucose	20	Citric acid	1.15	1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO15237	Glucose	20	Citric acid	1.15	1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	ATCC10245	Molasses	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO13772	Molasses	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO13773	Molasses	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO14815	Molasses	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO15237	Molasses	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	ATCC10245	Molasses treated with lignosulfonate	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO13772	Molasses treated with lignosulfonate	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO13773	Molasses treated with lignosulfonate	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO14815	Molasses treated with lignosulfonate	40			1:1 ratio of YE + Bactopectone
15	Keshk & Sameshima 2006(a)	G. xylinus	IFO15237	Molasses treated with lignosulfonate	40			1:1 ratio of YE + Bactopectone
16	Keshk & Sameshima 2006(b)	G. xylinus	ATCC10245	No carbon source	0	Citric acid	1.15	1:1 ratio of YE + peptone
16	Keshk & Sameshima 2006(b)	G. xylinus	ATCC10245	Glucose	10	Citric acid	1.15	1:1 ratio of YE + peptone
16	Keshk & Sameshima 2006(b)	G. xylinus	ATCC10245	Fructose	10	Citric acid	1.15	1:1 ratio of YE + peptone
16	Keshk & Sameshima 2006(b)	G. xylinus	ATCC10245	Inositol	10	Citric acid	1.15	1:1 ratio of YE + peptone
16	Keshk & Sameshima 2006(b)	G. xylinus	ATCC10245	Glycerol	10	Citric acid	1.15	1:1 ratio of YE + peptone

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
17	Keshk & Sameshima 2006-c	G. xylinus	ATCC10245	Glucose + No Molasses (control)	20	Citric acid	1.2	1:4 ratio of YE + Bactopeptone
17	Keshk & Sameshima 2006-c	G. xylinus	ATCC10245	Glucose + 2 g/L molasses	18	Citric acid	1.2	
17	Keshk & Sameshima 2006-c	G. xylinus	ATCC10245	Glucose + 6 g/L molasses	14	Citric acid	1.2	
17	Keshk & Sameshima 2006-c	G. xylinus	ATCC10245	Glucose + 10 g/L molasses	10	Citric acid	1.2	
17	Keshk & Sameshima 2006-c	G. xylinus	ATCC10245	Glucose + 14 g/L molasses	6	Citric acid	1.2	
17	Keshk & Sameshima 2006-c	G. xylinus	ATCC10245	Glucose + 18 g/L molasses	2	Citric acid	1.2	
17	Keshk & Sameshima 2006-c	G. xylinus	ATCC10245	Glucose + 2 g/L molasses	0	Citric acid	1.2	
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	No Carbon source (control)	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Fructose	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Sucrose	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Lactose	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Starch	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	EtOH	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Xylose	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Galactose	20	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	No Glycerol	0	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol + - optimized C source concentration	15	Citric acid	1.15	1:1 ratio of YE + peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol (control)	15	Citric acid	1.15	no nitrogen sources added
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	10 g/L peptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	10 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	10 g/L Tryptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	10 g/L soy bean flour
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	10 g/L polypeptone
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	10 g/L beef extract
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	Urea
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol + 10 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	15	Citric acid	1.15	10 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol + 10 g/L CSL	15	Citric acid	1.15	10 g/L CSL
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol + 10 g/L malt extract	15	Citric acid	1.15	10 g/L malt extract
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol - optimized N source concentration	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol (control)	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	8 g/L YE



	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol (optimized trace elements)	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15		0	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	EtOH	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Acetic acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Lactic acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Citric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Fumaric acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Succinic acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Malic acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol	15	Pyruvic acid	1.15	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol (optimized organic acid)	15	Acetic acid	3	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol (optimized media)	15	Acetic acid	3	8 g/L YE
18	Kim et al 2006	G. sp	RKY5 (KCTC10683BP)	Glycerol (optimized media)	15	Acetic acid	3	8 g/L YE
19	Kongruang 2008	G. xylinus	TISTR998	Coconut	200	EtOH	14	10 g/L YE
19	Kongruang 2008	G. xylinus	TISTR998	Pineapple Juice	200	EtOH	14	10 g/L YE
19	Kongruang 2008	G. xylinus	TISTR975	Coconut Juice	200	EtOH	14	10 g/L YE
19	Kongruang 2008	G. xylinus	TISTR975	Pineapple Juice	200	EtOH	14	10 g/L YE
19	Kongruang 2008	G. xylinus	TISTR893	Coconut Juice	200	EtOH	14	10 g/L YE
19	Kongruang 2008	G. xylinus	TISTR893	Pineapple Juice	200	EtOH	14	10 g/L YE
20	Kurosami et al 2009	G. xylinus	NBRC13693	Orange Juice	73			no nitrogen source added
20	Kurosami et al 2009	G. xylinus	NBRC13693	Pineapple Juice	89			no nitrogen source added
20	Kurosami et al 2009	G. xylinus	NBRC13693	Apple Juice	85			no nitrogen source added
20	Kurosami et al 2009	G. xylinus	NBRC13693	Japanese Pear Juice	62			no nitrogen source added
20	Kurosami et al 2009	G. xylinus	NBRC13693	Grape Juice	103			no nitrogen source added
20	Kurosami et al 2009	G. xylinus	NBRC13693	Orange Juice	73	Citric acid	1.2	1:4 ratio of YE + peptone
20	Kurosami et al 2009	G. xylinus	NBRC13693	Pineapple Juice	89	Citric acid	1.2	1:4 ratio of YE + peptone
20	Kurosami et al 2009	G. xylinus	NBRC13693	Apple Juice	85	Citric acid	1.2	1:4 ratio of YE + peptone
20	Kurosami et al 2009	G. xylinus	NBRC13693	Japanese Pear Juice	62	Citric acid	1.2	1:4 ratio of YE + peptone
20	Kurosami et al 2009	G. xylinus	NBRC13693	Grape Juice	103	Citric acid	1.2	1:4 ratio of YE + peptone
21	Lu et al 2011	G. xylinus	186	Glucose + 10 mL mEtOH	20	Citric acid	1.15	1:1 ratio of YE + Bactopeptone

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
21	Lu et al 2011	G. xylinus	186	Glucose + 5 mL ethylene glycol	20	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
21	Lu et al 2011	G. xylinus	186	Glucose + 5 N-propanol	20	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
21	Lu et al 2011	G. xylinus	186	Glucose + 30 mL glycerol	20	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
21	Lu et al 2011	G. xylinus	186	Glucose + 5 mL N-butanol	20	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
21	Lu et al 2011	G. xylinus	186	Glucose + 40 mL mannitol	20	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
21	Lu et al 2011	G. xylinus	186	Glucose	20	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
22	Mikkelsen et al 2009	G. xylinus	ATCC53524	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
22	Mikkelsen et al 2009	G. xylinus	ATCC53524	Mannitol	20	Citric acid	1.15	1:1 ratio of YE + peptone
22	Mikkelsen et al 2009	G. xylinus	ATCC53524	Glycerol	20	Citric acid	1.15	1:1 ratio of YE + peptone
22	Mikkelsen et al 2009	G. xylinus	ATCC53524	Fructose	20	Citric acid	1.15	1:1 ratio of YE + peptone
22	Mikkelsen et al 2009	G. xylinus	ATCC53524	Sucrose +	20	Citric acid	1.15	1:1 ratio of YE + peptone
22	Mikkelsen et al 2009	G. xylinus	ATCC53524	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
23	Moosavi-Nasab et al 2011	G. xylinus	PTCC1734	Sucrose	50	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
23	Moosavi-Nasab et al 2011	G. xylinus	PTCC1734	Date Syrup	50	Citric acid	1.15	1:1 ratio of YE + Bactopeptone
24	Naritomi et al 1998 (a)	G. xylinus	BPR3001A	Glucose (control)	70			40 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
24	Naritomi et al 1998 (a)	G. xylinus	BPR3001A	Glucose	30	Lactate	12.5	40 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
25	Naritomi et al 1998 (b)	G. xylinus	BPR3001A	Glucose (control)	70			40 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
25	Naritomi et al 1998 (b)	G. xylinus	BPR3001A	Glucose	30	EtOH	10	40 mL/L CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
26	Nguyen et al 2008	G. xylinus	K3	Mannitol	20	Citric acid	1.15	10 g/L CSL
26	Nguyen et al 2008	G. xylinus	K3	Fructose	20	Citric acid	1.15	10 g/L peptone
26	Nguyen et al 2008	G. xylinus	K3	Glucose	20	Citric acid	1.15	10 g/L YE
26	Nguyen et al 2008	G. xylinus	K3	Sucrose	20	Citric acid	1.15	10 g/L beef extract
26	Nguyen et al 2008	G. xylinus	K3	Maltose	20	Citric acid	1.15	10 g/L malt extract
26	Nguyen et al 2008	G. xylinus	K3	Lactose	20	Citric acid	1.15	no nitrogen source added
26	Nguyen et al 2008	G. xylinus	K3	Mannitol + 3 g/L Green Tea	20	Citric acid	1.15	40 g/L CSL
27	Panesar et al (2009)	G. aceti	MTCC 2623	D- glucose	20	Citric acid	1.17	1:1 ratio of YE + peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	Sucrose	20	Citric acid	1.17	1:1 ratio of YE + peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	Fructose	20	Citric acid	1.17	1:1 ratio of YE + peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	D- Galactose	20	Citric acid	1.17	1:1 ratio of YE + peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	Lactose	20	Citric acid	1.17	1:1 ratio of YE + peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	Mannitol	20	Citric acid	1.17	1:1 ratio of YE + peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	EtOH	20	Citric acid	1.17	1:1 ratio of YE + peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	5 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	5 g/L NH <sub>4</sub> NO <sub>3</sub>
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	5 g/L riboflavin
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	5 g/L glycine
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	5 g/L peptone
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	5 g/L NaNO <sub>3</sub>
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	5 g/L methionine
27	Panesar et al (2009)	G. aceti	MTCC 2623	Glucose	20	Citric acid	1.17	10 g/L NaNO <sub>3</sub> (optimized)
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate (MA medium)	10	Acetic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate (MA medium)	10	Acetic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate (MA medium)	10	Acetic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate (MG medium)	10	Glutamic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate (MG medium)	10	Glutamic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate (MG medium)	10	Glutamic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate + 10 mL EtOH (MAE medium)	10	Acetic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate + 10 mL EtOH (MAE medium)	10	Acetic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate + 10 mL EtOH (MAE medium)	10	Acetic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate + 10 mL EtOH (MGE medium)	10	Glutamic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate + 10 mL EtOH (MGE medium )	10	Glutamic acid	1.5	1:0.7 ratio of YE + peptone
28	Park et al 2004	G. hansenii	PJK(KCTC10505BP)	Glucose + 0.2 g/L succinate + 10 mL EtOH -(MGE medium)	10	Glutamic acid	1.5	1:0.7 ratio of YE + peptone
29	Park et al 2010	G. sp	V6	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
29	Park et al 2010	G. sp	V6	Glucose + Glycerol	25	Succinic acid	3	YE
29	Park et al 2010	G. sp	V6	Molasses	50	Acetic acid	2	CSL
30	Pourramezan et al (2009)	G. sp	4B-2	Sucrose	20	Citric acid	1.15	1:1 ratio of YE + peptone
30	Pourramezan et al (2009)	G. sp	4B-2	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
30	Pourramezan et al (2009)	G. sp	4B-2	Sucrose	15	Citric acid	1.15	1:1 ratio of YE + peptone
31	Ramana et al 2000	G. xylinus	NCIM	Sucrose	50			5 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
31	Ramana et al 2000	G. xylinus	NCIM	Sucrose	50			5 g/L peptone
31	Ramana et al 2000	G. xylinus	NCIM	Sucrose	50			5 g/L MSG
31	Ramana et al 2000	G. xylinus	NCIM	Sucrose	50			5 g/L casein hydrolysate
31	Ramana et al 2000	G. xylinus	NCIM	Sucrose	50			5 g/L glycine
31	Ramana et al 2000	G. xylinus	NCIM	Sucrose	50			5 g/L soybean meal
31	Ramana et al 2000	G. xylinus	NCIM	Glucose	50			5 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
31	Ramana et al 2000	G. xylinus	NCIM	Glucose	50			5 g/L peptone
31	Ramana et al 2000	G. xylinus	NCIM	Glucose	50			5 g/L monosodium glutamate (MSG)

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
31	Ramana et al 2000	G. xylinus	NCIM	Glucose	50			5 g/L casein hydrolysate
31	Ramana et al 2000	G. xylinus	NCIM	Glucose	50			5 g/L glycine
31	Ramana et al 2000	G. xylinus	NCIM	Glucose	50			5 g/L soybean meal
31	Ramana et al 2000	G. xylinus	NCIM	Mannitol	50			5 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
31	Ramana et al 2000	G. xylinus	NCIM	Mannitol	50			5 g/L peptone
31	Ramana et al 2000	G. xylinus	NCIM	Mannitol	50			5 g/L monosodium glutamate (MSG)
31	Ramana et al 2000	G. xylinus	NCIM	Mannitol	50			5 g/L casein hydrolysate
31	Ramana et al 2000	G. xylinus	NCIM	Mannitol	50			5 g/L glycine
31	Ramana et al 2000	G. xylinus	NCIM	Mannitol	50			5 g/L soybean meal
32	Seto et al 2006	G. sp	st-60-12	Sucrose	40			40 g/L CSL
32	Seto et al 2006	G. sp	st-60-12	Glucose	40			40 g/L CSL
32	Seto et al 2006	G. sp	st-60-12	Fructose	40			40 g/L CSL
32	Seto et al 2006	G. sp + Lactobacillus sp	st-60-12 + st-60-20	Sucrose	40			40 g/L CSL
32	Seto et al 2006	G. sp + Lactobacillus sp	st-60-12 + st-60-20	Glucose	40			40 g/L CSL
32	Seto et al 2006	G. sp + Lactobacillus sp	st-60-12 + st-60-20	Fructose	40			40 g/L CSL
32	Seto et al 2006	L. mali	JCM1116	Sucrose	40			40 g/L CSL
32	Seto et al 2006	L. mali	JCM2775	Sucrose	40			40 g/L CSL
32	Seto et al 2006	L. agilis	JCM1187	Sucrose	40			40 g/L CSL
32	Seto et al 2006	L. murinus	JCM41717	Sucrose	40			40 g/L CSL
32	Seto et al 2006	L. brevis	JCM1059	Sucrose	40			40 g/L CSL
32	Seto et al 2006	L. coryniformis	JCM1164	Sucrose	40			40 g/L CSL
32	Seto et al 2006	L. casei	JCM1134	Sucrose	40			40 g/L CSL
33	Son et al 2001	G. sp	A9	Glucose	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Fructose	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Maltose	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Sucrose	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Trehalose	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Mannitol	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Arabitol	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Acetic Acid	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Lactic Acid	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Succinic Acid	20	Citric acid	1.15	1:1 ratio of YE + peptone
33	Son et al 2001	G. sp	A9	Glucose	20	Citric acid	1.15	5 g/L beef extract
33	Son et al 2001	G. sp	A9	Fructose	20	Citric acid	1.15	5 g/L CSL

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
33	Son et al 2001	G. sp	A9	Maltose	20	Citric acid	1.15	5 g/L malt extract
33	Son et al 2001	G. sp	A9	Sucrose	20	Citric acid	1.15	5 g/L polypeptone
33	Son et al 2001	G. sp	A9	Trehalose	20	Citric acid	1.15	5 g/L proteose peptone
33	Son et al 2001	G. sp	A9	Mannitol	20	Citric acid	1.15	5 g/L tryptone
33	Son et al 2001	G. sp	A9	Arabitol	20	Citric acid	1.15	5 g/L YE + 5 g/L polypeptone
33	Son et al 2001	G. sp	A9	Acetic Acid	20	Citric acid	1.15	5 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
33	Son et al 2001	G. sp	A9	Lactic Acid	20	Citric acid	1.15	5 g/L NH <sub>4</sub> Cl
33	Son et al 2001	G. sp	A9	Succinic Acid	20	Citric acid	1.15	5 g/L KNO <sub>3</sub>
33	Son et al 2001	G. sp	A9	Glucose	20	Citric acid	1.15	no nitrogen source added
33	Son et al 2001	G. sp	A9	Glucose	20	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose + 2 mL/L EtOH	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose 1.4 mL/L EtOH	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose + 2 mL/L Acetic Acid	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose + 2 mL/L Fumalic Acid	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose + 2 mL/L Lactic Acid	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose + 2 mL/L Malic Acid	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose + 2 mL/L Pyruvic Acid	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
33	Son et al 2001	G. sp	A9	Glucose + 2 mL/L Succinic Acid	40	Citric acid	1.15	1:1 ratio of YE + polypeptone
34	Son et al 2003	G. sp	V6	Glucose (control in HS medium)	10			(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (optimised media)	15	EtOH	6	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (HS medium)	10	Acetic acid	2	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (HS medium)	10	Citric acid	2	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (HS medium)	10	EtOH	2	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (HS medium)	10	Fumaric acid	2	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (HS medium)	10	Lactic acid	2	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (HS medium)	10	Pyruvic acid	2	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
34	Son et al 2003	G. sp	V6	Glucose (HS medium)	10	Succinic acid	2	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
35	Shigematsu et al 2005	G. xylinus	BPR2001	Glucose	40			40 mL/L CSL + 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
35	Shigematsu et al 2005	G. xylinus	BPR2001	Fructose	40			40 mL/L CSL + 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
35	Shigematsu et al 2005	G. xylinus	BPR2001	Sweet Potato Pulp (SPP)	40			40 mL/L CSL + 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
35	Shigematsu et al 2005	G. xylinus	BPR2001	Sweet Potato Pulp (SPP)	40	1.2 g/L EtOH	1.2	40 mL/L CSL + 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
35	Shigematsu et al 2005	G. xylinus	GD-1	Glucose	40		1.2	40 mL/L CSL + 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
35	Shigematsu et al 2005	G. xylinus	GD-1	Sweet Potato Pulp (SPP)	40			40 mL/L CSL + 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
35	Shigematsu et al 2005	G. xylinus	GD-1	Sweet Potato Pulp (SPP)	40	1.2 g/L EtOH		40 mL/L CSL + 3.3 g/L (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>

	Authors	Microbe	strain	Substrate		Additional Carbon		Nitrogen
				Carbon source	Initial Conc, g/L	Type	Conc, g/L or mL/L	Sources
36	Toda et al 1997	G. xylinus	DA	Glucose	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Fructose	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Galactose	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Sucrose	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Methylglucoside	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Deoxyglucose	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Glycerol	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Mannitol	20			1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Glucose	20	Acetic acid	20	1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Fructose	20	Acetic acid	20	1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Galactose	20	Acetic acid	20	1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Sucrose	20	Acetic acid	20	1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Methylglucoside	20	Acetic acid	20	1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Deoxyglucose	20	Acetic acid	20	1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Glycerol	20	Acetic acid	20	1:1 ratio of YE + polypeptone
36	Toda et al 1997	G. xylinus	DA	Mannitol +	20	Acetic acid	20	1:1 ratio of YE + polypeptone
37	Yunoki et al 2004	G. xylinus	ATCC10245	Glucose (Control)	20	Citric acid	1.15	1:1 ratio of YE + peptone
37	Yunoki et al 2004	G. xylinus	ATCC10245	Glucose + 1% (v/v) EtOH	20	Citric acid	1.15	1:1 ratio of YE + peptone
38	Zhou et al (2007)	G. xylinus	NUST4.1	Glucose (control)	18			1:4 ratio of CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
38	Zhou et al (2007)	G. xylinus	NUST4.1	Sucrose + 0.4 g/L NaAlg (sodium alginate)	21			1:4 ratio of CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>5</sub>
38	Zhou et al (2007)	G. xylinus	NUST4.1	Glucose	18			1:4 ratio of CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>6</sub>
38	Zhou et al (2007)	G. xylinus	NUST4.1	Sucrose + 0.4 g/L NaAlg (sodium alginate)	21			1:4 ratio of CSL + (NH <sub>4</sub> ) <sub>2</sub> SO <sub>7</sub>

Salts		Vitamins											
Conc. g/L	Sources	Conc. g/L	Sources	initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	9	0.23
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	13	0.33
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	9.5	0.48
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	9	0.23
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	5.5	0.14
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	9	0.23
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	10	0.25
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	11.6	0.29
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25	added vitamins	5		30	4500	0.4	0	3	Fermentor - 10 L	9.5	0.24
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	0.8	0.02
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	0.9	0.02
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.4	0.03
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1	0.02
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	0.75	0.02
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	0.29	0.02
15	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.51	0.03
15	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.35	0.03
15	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.6	0.03
15	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (10 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	2.25	0.05
10	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (20 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.4	0.03
10	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (250 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.2	0.02
10	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (100 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.2	0.02
10	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub> (200 mm PO <sub>4</sub> )	3.5		6		30	500		0	10	Fernbach Flask - 2 L	1.31	0.03
5				6	NG	30	50		0	7	SF - 250 mL	0.04	0.13
5				6	NG	30	50		0	7	SF - 250 mL	0.029	0.12
5				6	NG	30	50		0	7	SF - 250 mL	0.011	0.09
5				6	NG	30	50		0	7	SF - 250 mL	0.029	0.10
5				6	NG	30	50		0	7	SF - 250 mL	0.023	0.07
5				6	NG	30	50		0	7	SF - 250 mL	0.026	0.07
5				6	NG	30	50		0	7	SF - 250 mL	0.035	0.12
5				6	NG	30	50		0	7	SF - 250 mL	0.031	0.11
5				6	NG	30	50		0	7	SF - 250 mL	0.026	0.09
5				6	NG	30	50		0	7	SF - 250 mL	0.025	0.08
5				6	NG	30	50		0	7	SF - 250 mL	0.021	0.07
5				6	NG	30	50		0	7	SF - 250 mL	0.019	0.05

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
20ml/L	KH <sub>2</sub> PO <sub>4</sub>	1	Inositol (2 mg/L)		5	4.6	29	200		175	7	SF-500 mL	5.65	0.14
3.3	MgSO <sub>4</sub>	0.25	Nicotinic Acid (0.4 mg/L)		5	4.1	29	200		175	7	SF-500 mL	4.7	0.12
			Pyridoxine hydrochloride (0.4 mg/L)		5	3.8	29	200		175	7	SF-500 mL	1.75	0.04
			Thiamine hydrochloride (0.4 g/L)		5	3.7	29	200		175	7	SF-500 mL	2.45	0.06
			D-pantothenic acid calcium (0.2 mg/L)		5	3.5	29	200		175	7	SF-500 mL	2	0.05
			Riboflavin (0.2 mg/L)		5	3.5	29	200		175	7	SF-500 mL	1.1	0.03
			Folic Acid (200 mg/L)		5	3.3	29	200		175	7	SF-500 mL	4.1	0.10
			D-biotin (0.002 mg/L)		5	3.4	29	200		175	7	SF-500 mL	5.2	0.13
					5	3.4	29	200		175	7	SF-500 mL	3.75	0.09
					5	3.3	29	200		175	7	SF-500 mL	2.4	0.06
8					5 to 6	4 to 5	30	40		0	3 or 6	SF-250 mL	0.792	0.03
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5 to 6	4 to 5	30	40		0	3 or 6	SF-250 mL	0.96	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5 to 6	4 to 5	30	40		0	3 or 6	SF-250 mL	1.16	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5 to 6	4 to 5	30	40		0	3 or 6	SF-250 mL	0.6425	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5 to 6	4 to 5	30	40		0	3 or 6	SF-250 mL	0.54	0.03
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5 to 6	4 to 5	30	40		0	3 or 6	SF-250 mL	0.96	0.04
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5 to 6	4 to 5	30	40		0	3 or 6	SF-250 mL	4.695	0.04
8	None				5 to 6		30	40		0	3 or 6	SF-250 mL	2.115	0.02
					2.7-3.0		30				8	Beaker - 1 L	23.95	0.48
					2.7-3.0		30				8	Beaker - 1 L	30.8	0.44
					2.7-3.0		30				8	Beaker - 1 L	60	0.67
					2.7-3.0		30				8	Beaker - 1 L	29.55	0.27
					2.7-3.0		30				8	Beaker - 1 L	24.25	0.19
					2.7-3.0		30				8	Beaker - 1 L	25.6	0.17
					2.7-3.0		30				8	Beaker - 1 L	25.55	0.15
					2.7-3.0		30				8	Beaker - 1 L	25.45	0.13
					2.7-3.0		30				8	Beaker - 1 L	25.3	0.12
					2.7-3.0		30				8	Beaker - 1 L	25.4	0.11
					2.7-3.0		30				8	Beaker - 1 L	24.85	0.10
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.25		28	2000		0	10	Bioreactor	1.2	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.25		28	2000	0.6	0	10	Bioreactor	0.8	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.25		28	2000		0	10	Bioreactor	2.2	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.25		28	2000	0.6	0	10	Bioreactor	1.5	0.04
10					NG	NG	30	50		0	14	SF - 250 mL	8.46	0.17



Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources	Conc. g/L										
7					NG	NG	30	50		0	14	SF - 250 mL	13.95	0.23
					NG	NG	30	50		0	14	SF - 250 mL	2	0.04
					NG	NG	30	50		0	14	SF - 250 mL	7.37	0.12
					NG	NG	30	50		0	14	SF - 250 mL	2.82	0.06
					NG	NG	30	50		0	14	SF - 250 mL	3.64	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	5.14	0.26
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	5.56	0.28
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	3.23	0.16
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	4.62	0.23
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	3.04	0.15
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	4.53	0.23
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	4.81	0.24
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	2.47	0.12
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	5.16	0.26
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	5.25	0.26
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	6.25	0.31
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	4.63	0.23
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	0.61	0.03
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	0.82	0.04
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	0.69	0.04
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	0.77	0.03
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		30			120	2000	Fermentor - 5 L	0.42	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.5	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.8	0.14
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.6	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.6	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.2	0.11
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.7	0.14
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.5	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	1.2	0.06
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.5	0.13
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.8	0.14
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.4	0.12
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	1.8	0.09

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources	Conc. g/L										
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	NIL	NIL
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	NIL	NIL
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	0.2	0.01
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	0.3	0.02
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	0.4	0.02
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	1.3	0.07
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.9	0.15
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.95	0.15
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.72	0.14
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.8	0.14
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.8	0.14
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2	0.10
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	3.2	0.16
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.1	0.11
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.2	0.11
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.5	0.13
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.95	0.15
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.21	0.11
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.56	0.13
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.69	0.14
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.16	0.11
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	3.29	0.17
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	3.74	0.19
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	1.81	0.09
	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	100		NG	14	SF - 250 mL	2.52	0.13
	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	0.37	0.04
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	0	NIL
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	0	NIL
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	1.44	0.14
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	3.19	0.32
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	2.93	0.29
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	1.93	0.19
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	4.69	0.47
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	1.12	0.11

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	1.14	0.11
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	0	0.00
2	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	NG	NG
2.5	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	NG	NG
	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	NG	NG
0.5	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	NG	NG
0.002	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	NG	NG
	trace elements added		0.0025 g/L H <sub>3</sub> BO <sub>3</sub> (2.5 mg/L)		6.5		30	75		200	7	SF - 250 mL	NG	NG
	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	7.21	0.18
3	trace elements added		added vitamins		6.5		30	75		200	7	SF - 250 mL	7.94	0.20
2	KH <sub>2</sub> PO <sub>4</sub> , MgSO <sub>4</sub> , Na <sub>2</sub> HPO <sub>4</sub> , FeSO <sub>4</sub> .	6.02	H <sub>3</sub> BO <sub>3</sub> + nicotinamide + inositol (5.6 mg/L)		6.5		30	75		200	7	SF - 250 mL	13.35	0.33
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF - 250 mL	1.62	0.08
3.3	KH <sub>2</sub> PO <sub>4</sub>	1	added vitamins		4.5-5.5		30	112.5		180	5	SF - 500 mL	2.88	0.07
3.3	MgSO <sub>4</sub>	0.25			4.5-5.5		30	112.5		180	5	SF - 500 mL	4.44	0.11
3.3	FeSO <sub>4</sub>	0.0036			4.5-5.5		30	112.5		180	5	SF - 500 mL	4.48	0.11
3.3					4.5-5.5		30	36,000	NG	NG	NG	Airlift - 50 L	2.5	0.06
3.3					4.5-5.5		30	36,000	NG	NG	NG	Airlift - 50 L	5.1	0.13
					4.5-5.5		30	36,000	NG	NG	NG	Airlift - 50 L	1.5	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	1.95	0.10
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.04	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.29	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.23	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.04	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.06	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.4	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.04	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.06	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.78	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.07	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.18	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	3.21	0.16
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0	NIL
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.53	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	1.78	0.09

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.02	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.12	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	2.51	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.04	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.43	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	2.61	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.02	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.35	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	6.23	0.31
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.06	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.23	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	1.04	0.05
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.05	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.51	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	1.91	0.10
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.01	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.37	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.03	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.92	0.05
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.06	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.71	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	1.27	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.02	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.22	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.62	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0	NIL
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.28	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.2	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.04	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	1.46	0.07
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.1	0.01

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5.7-6.5		30	100		0	30	Tubes - (4 x12.5 cm)	0.89	0.05
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		175	7	SF- 500 mL	2.7	0.14
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		175	7	SF- 500 cm <sup>3</sup>	4.6	0.23
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		175	7	SF- 500 mL	4.8	0.24
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		175	7	SF- 500 mL	6.5	0.33
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		375	7	SF- 500 mL	1.7	0.09
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		375	7	SF- 500 mL	2.1	0.11
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		375	7	SF- 500 mL	2.3	0.12
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	100		375	7	SF- 500 mL	3.7	0.19
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	1200		500	3	Bioreactor	2.08	0.10
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	1200		700	3	Bioreactor	3.56	0.18
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	1200		700	3	Bioreactor	5.3	0.27
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	1200		900	3	Bioreactor	4.41	0.22
3.3	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	1.25			5		28	1200		900	3	Bioreactor	3.37	0.17
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	2.62	28	30		0	7	Petri dish	1.15	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	2.69	28	30		0	7	Petri dish	3.33	0.17
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	2.77	28	30		0	7	Petri dish	2.24	0.11
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	2.84	28	30		0	7	Petri dish	0.7	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	2.78	28	30		0	7	Petri dish	0.8	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4.99	28	30		0	7	Petri dish	1.86	0.05
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	3.88	28	30		0	7	Petri dish	5.79	0.15
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	3.95	28	30		0	7	Petri dish	2.82	0.07
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4.15	28	30		0	7	Petri dish	1.37	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4.2	28	30		0	7	Petri dish	2.34	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4.9	28	30		0	7	Petri dish	1.48	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	3.95	28	30		0	7	Petri dish	5.99	0.15
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4.01	28	30		0	7	Petri dish	3.21	0.08
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4	28	30		0	7	Petri dish	1.24	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4	28	30		0	7	Petri dish	2.25	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	6.3	28	30		0	7	SF - 100 mL	0	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	3.9	28	30		0	7	SF - 100 mL	NG	0.08
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	5.6	28	30		0	7	SF - 100 mL	NG	0.08
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	5.3	28	30		0	7	SF - 100 mL	NG	0.07
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	5.5	28	30		0	7	SF - 100 mL	NG	0.13

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources	Conc. g/L										
25	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		28	15		0	5 to 7	NG	1.34	0.07
0		0			6		28	15		0	5 to 7	NG	1.4	0.08
0		0			6		28	15		0	5 to 7	NG	1.44	0.10
0		0			6		28	15		0	5 to 7	NG	1.5	0.15
0		0			6		28	15		0	5 to 7	NG	1.56	0.26
0		0			6		28	15		0	5 to 7	NG	1.6	0.80
0		0			6		28	15		0	5 to 7	NG	1.75	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.3	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	1.8	0.09
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.3	0.12
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.2	0.11
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	1.8	0.09
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.1	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.4	0.12
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.4	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.5	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.6	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.8	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	3.27	0.22
0	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.01	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.1	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	4.5	0.30
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	3	0.20
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.01	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.9	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	1.5	0.10
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.1	0.01
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.16	0.14
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	0.49	0.03
8	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	3.4	0.23
8	No trace elements	0			NG		30	50		NG	3	SF- 250 mL	1.9	0.13
8	KH <sub>2</sub> PO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.5	0.17
8	K <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.6	0.17

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
8	NaH <sub>2</sub> PO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.2	0.15
8	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.46	0.16
8	(NH <sub>4</sub> )H <sub>2</sub> PO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	1.8	0.12
8	(NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub>	2.7			NG		30	50		NG	3	SF- 250 mL	2.2	0.15
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.21	0.21
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	2.6	0.17
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	1.9	0.13
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.9	0.26
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.5	0.23
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.1	0.21
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.9	0.26
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	2.2	0.15
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.4	0.23
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.8	0.25
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		NG	3	SF- 250 mL	3.92	0.26
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		0	8	SF- 250 mL	4.59	0.31
8	K <sub>2</sub> HPO <sub>4</sub>	3			NG		30	50		150	8	SF- 250 mL	5.63	0.38
10					4.75		30	5000		0	14	Container - 5 L	NG	0.01
10					4.75		30	5000		0	14	Container - 5 L	NG	0.00
10					4.75		30	5000		0	14	Container - 5 L	NG	0.03
10					4.75		30	5000		0	14	Container - 5 L	NG	0.00
10					4.75		30	5000		0	14	Container - 5 L	NG	0.03
10					4.75		30	5000		0	14	Container - 5 L	NG	0.00
0					6		30	NG		NG	14	NG		0.21
0					6		30	NG		NG	14	NG		0.06
0					6		30	NG		NG	14	NG		0.02
0					6		30	NG		NG	14	NG		0.06
0					6		30	NG		NG	14	NG		0.03
25	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	NG		NG	14	NG		0.69
25	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	NG		NG	14	NG		0.39
25	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	NG		NG	14	NG		0.39
25	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	NG		NG	14	NG		0.48
25	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6		30	NG		NG	14	NG		0.14
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5	7.06	30	100		0	6	SF - 300 mL	1.035	0.05

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources	Conc. g/L										
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5	4.43	30	100		0	6	SF - 300 mL	1.055	0.05
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5	3.91	30	100		0	6	SF - 300 mL	0.964	0.05
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5	6.57	30	100		0	6	SF - 300 mL	1.083	0.05
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5	5.11	30	100		0	6	SF - 300 mL	1.326	0.07
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5	7.58	30	100		0	6	SF - 300 mL	1.252	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5	7.59	30	100		0	6	SF - 300 mL	0.85	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	10		0	4	NG	3.1	0.16
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	10		0	4	NG	3.37	0.17
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	10		0	4	NG	3.75	0.19
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	10		0	4	NG	2.81	0.14
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	10		0	4	NG	3.83	0.19
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	10		0	4	NG	3.642	0.18
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.8		28			0	30	SF - 2 L	0.18	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.8		28			0	30	SF - 2 L	0.3	0.01
3.3	trace elements added		vitamins added		5		30	1600	0.5	NG	5	fermentor - 3 L	8	0.11
3.3	trace elements added		vitamins added		5		30	1600	0.5	NG	5	fermentor - 3 L	19.2	0.27
3.3	trace elements added		vitamins added		5		30	1440		NG	5	NG		0.28
3.3	trace elements added		vitamins added		5		30	1440		NG	5	NG		0.46
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	90			7	Bottle - 500 mL	1.07	0.05
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	90			7	Bottle - 500 mL	0.85	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	90			7	Bottle - 500 mL	0.85	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	90			7	Bottle - 500 mL	0.75	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	90			7	Bottle - 500 mL	0.26	0.01
0	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	90			7	Bottle - 500 mL	NIL	NIL
40	Na <sub>2</sub> HPO <sub>4</sub>	2.7			5		30	90			7	Bottle - 500 mL	3.34	0.17
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.5	0.08
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.3	0.07
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1	0.05
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1	0.05
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.2	0.06
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.8	0.09
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	0.5	0.03
5	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	0.61	0.03



Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
5	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	0.5	0.03
5	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	0.5	0.03
5	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	0.41	0.02
5	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.5	0.08
5	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.41	0.07
5	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.6	0.08
10	KH <sub>2</sub> HPO <sub>4</sub>	2.7			5.5		28	NG		NG	7	SF	1.6	0.08
17					5		30	50		200	10	SF- 250 mL	1.42	0.14
17					5		30	50		200	10	SF- 250 mL baffled	0.54	0.05
17					5		30	3000	1.7	100	10	fermentor - 5 L	1.12	0.11
17					5		30	50		200	10	SF- 250 mL	0.86	0.09
17					5		30	50		200	10	SF- 250 mL baffled	1.14	0.11
17					5		30	3000	1.7	100	4	Ffermentor- 5 L	NIL	0.00
17					5		30	50		200	10	SF - 250 mL	2.28	0.23
17					5		30	50		200	10	S - 250 m Lbaffled	0.65	0.06
17					5		30	3000	1.7	100	4	Fermentor- 5 L	0.11	0.01
17					5		30	50		200	10	SF - 250 mL	1.9	0.19
17					5		30	50		200	10	SF- 250 mL baffled	0.82	0.08
17					5		30	3000	1.7	100	4	Fermentor - 5 L	NIL	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6		30	NG		NG	8	NG	1.2	0.06
16	Na <sub>2</sub> HPO <sub>4</sub>	4			6		30	NG		NG	8	NG	2.8	0.11
40	Na <sub>2</sub> HPO <sub>4</sub>	2			6		30	NG		NG	8	NG	5	0.10
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	5.46	30	30			8	SF - 100 mL	11.5	0.58
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	4.48	30	30			8	SF - 100 mL	6.5	0.33
14	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6	NG	30	30			8	SF - 100 mL	11.65	0.78
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	1.6	0.03
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	4.6	0.09
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	4.4	0.09
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	5	0.10
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	2	0.04
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	2.6	0.05
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	3.9	0.08
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	3.5	0.07
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	4	0.08

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	2	0.04
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	3	0.06
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	2	0.04
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	4	0.08
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	4.6	0.09
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	4.2	0.08
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	4.5	0.09
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	1.5	0.03
5	KH <sub>2</sub> PO <sub>4</sub> + MgSO <sub>4</sub>	3.05			5		35	500			14	SF	2.5	0.05
40					NG		28	50		150	3	SF - 500 mL baffled	1.4	0.04
40					NG		28	50		150	3	SF - 500 mL baffled	0.6	0.02
40					NG		28	50		150	3	SF - 500 mL baffled	0.3	0.01
40					NG		28	50		150	3	SF - 500 mL baffled	3.2	0.08
40					NG		28	50		150	3	SF - 500 mL baffled	1.2	0.03
40					NG		28	50		150	3	SF - 500 mL baffled	1.1	0.03
40					NG		28	50		150	3	SF - 500 mL baffled	4.2	0.11
40					NG		28	50		150	3	SF - 500 mL baffled	3.3	0.08
40					NG		28	50		150	3	SF - 500 mL baffled	3.8	0.10
40					NG		28	50		150	3	SF - 500 mL baffled	1.1	0.03
40					NG		28	50		150	3	SF - 500 mL baffled	1.3	0.03
40					NG		28	50		150	3	SF - 500 mL baffled	0.9	0.02
40					NG		28	50		150	3	SF - 500 mL baffled	1.3	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF - 250 mL	2.7	0.14
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF - 250 mL	2.53	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.62	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.83	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	2.57	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.64	0.03
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.85	0.04
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.38	0.02
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	2.1	0.11
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.3	0.02
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.97	0.05
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	2.59	0.13

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources	Conc. g/L										
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.54	0.03
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	2.65	0.13
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0.57	0.03
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	1.16	0.06
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	2.87	0.14
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0	0.00
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0	0.00
5	Na <sub>2</sub> HPO <sub>4</sub>	2.7			6.5		30	75		200	7	SF -250 mL	0	0.00
0	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	0	0.00
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	3.97	0.20
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	5.42	0.27
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	14.9	0.75
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	4.38	0.22
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	4.68	0.23
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	4.61	0.23
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	4.45	0.22
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	5.11	0.26
10	Na <sub>2</sub> HPO <sub>4</sub>	7			6.5		30	75		200	7	SF -250 mL	4.86	0.24
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	3			6.5		30	75		200 rpm	7	SF -250 mL	1.58	0.16
2	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	6	added vitamins		6.5		30	75		200 rpm	8	SF -250 mL	4.16	0.28
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	2			6.5		30	75		200 rpm	7	SF -250 mL	3.01	0.20
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	2			6.5		30	75		200 rpm	7	SF -250 mL	3.16	0.21
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	2			6.5		30	75		200 rpm	7	SF -250 mL	3.22	0.22
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	2			6.5		30	75		200 rpm	7	SF -250 mL	3.11	0.21
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	2			6.5		30	75		200 rpm	7	SF -250 mL	3.19	0.21
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	2			6.5		30	75		200 rpm	7	SF -250 mL	3.19	0.21
3	KH <sub>2</sub> PO <sub>4</sub> + Na <sub>2</sub> HPO <sub>4</sub>	2			6.5		30	75		200 rpm	7	SF -250 mL	3.18	0.21
3.3	KH <sub>2</sub> PO <sub>4</sub>	1	Inositol (200 mg/L)		5	5	30	1080	1	NG	NG	Fermentor - 3 L	2.58	0.06
3.3	MgSO <sub>4</sub>	0.25	Nicotinic Acid (40 mg/L)		5	5	30	1080	1	NG	NG	Fermentor - 3 L	7.31	0.19
3.3			Pyridoxine hydrochloride (40 mg/L)		5	5	30	1080	1	NG	NG	Fermentor - 3 L	3.45	0.09
3.3			Thiamine hydrochloride (40 mg/L)		5	5	30	1080	1	NG	NG	Fermentor - 3 L	3.93	0.09
3.3			D-pantothenic acid calcium (40 mg/L)		5	5	30	1080	1	NG	NG	Fermentor - 3 L	4.13	0.10
3.3			p-aminobenzoic acid 20 mg/L)		5	5	30	1080	1	NG	NG	Fermentor - 3 L	5.03	0.12
3.3			Folic Acid + 0.0002 g/L D-biotin (0.2 mg/L)		5	5	30	1080	1	NG	NG	Fermentor - 3 L	6.96	0.19

Conc. g/L	Salts		Vitamins		initial pH	Final pH	Temp. °C	Working volume, mL	Aeration rate (vvm)	Agitation (rpm)	Fermentation time, days	reactor	BC conc., g/L	BC yield, g/g substrate
	Sources	Conc. g/L	Sources											
10					3.5- 4.5		30	30		0		SF - 100 mL	0.03	0.06
10					3.5- 4.5		30	30		0		SF - 100 mL	0.065	0.11
10					3.5- 4.5		30	30		0		SF - 100 mL	0.005	0.00
10					3.5- 4.5		30	30		0		SF - 100 mL	0.05	0.07
10					3.5- 4.5		30	30		0		SF - 100 mL	0.009	0.00
10					3.5- 4.5		30	30		0		SF - 100 mL	NIL	NIL
10					3.5- 4.5		30	30		0		SF - 100 mL	0.03	0.06
10					3.5- 4.5		30	30		0		SF - 100 mL	0.06	0.07
10					3.5- 4.5		30	30		0		SF - 100 mL	0.119	0.19
10					3.5- 4.5		30	30		0		SF - 100 mL	0.109	0.18
10					3.5- 4.5		30	30		0		SF - 100 mL	0.005	0.00
10					3.5- 4.5		30	30		0		SF - 100 mL	0.029	0.04
10					3.5- 4.5		30	30		0		SF - 100 mL	0.01	0.00
10					3.5- 4.5		30	30		0		SF - 100 mL	0.005	0.00
10					3.5- 4.5		30	30		0		SF - 100 mL	0.121	0.22
10					3.5- 4.5		30	30		0		SF - 100 mL	0.115	0.18
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		28	15		0	7	SF - 50 mL	2.67	0.13
10	Na <sub>2</sub> HPO <sub>4</sub>	2.7			NG		28	15		0	7	SF - 50 mL	4.6	0.23
24	KH <sub>2</sub> PO <sub>4</sub>	2			6		29	45		150	5	SF - 250 mL	3.7	0.21
24	MgSO <sub>4</sub>	0.4			6		29	45		150	5	SF - 250 mL	6	0.29
24	KH <sub>2</sub> PO <sub>4</sub>	2			6		29	7000		200	3	STR - 13 L	1.09	0.06
24	MgSO <sub>4</sub>	0.4			6		29	7000		200	3	STR - 13 L	1.89	0.09