



DATE:27/10/05

MUSHROOM GLUCAN DETERMINATION

A. Determination of Total Glucan + free sugars

Sample	Weight (mg)	Moisture content (%)	Final Volume (ml)	Absorbance values (510 nm)	Average Absorbance (510 nm)	Total Glucan + free sugars (% w/w)	
						“as is” basis	‘dw’ basis
1 Dried Black Fungus	97.6		100	0.556 / 0.564 / 0.558	0.559	49.62	
2 Dried Black Fungus	99.9		100	0.569 / 0.574 / 0.573	0.572	49.60	
3 Dried Black Fungus	100.7		100	0.580 / 0.580 / 0.582	0.581	49.98	
4 Dried Black Fungus	99.0		100	0.561 / 0.566 / 0.562	0.563	49.26	

Glucose Standard ($100\mu\text{g}/\Delta\text{E}_{510\text{nm}}$) = 1.035 / 1.025 / 1.049 / 1.047; Average = 1.039 F = 96.25

Total Glucan + free sugars (% w/w) = $\Delta\text{E} \times \text{F} \times \text{V}/0.1 \times 100/\text{W} \times 1/1000 \times 162/180 = \Delta\text{E} \times \text{F} \times \text{V}/\text{W} \times 0.9$

Total Glucan + free sugars % (‘dw’ basis): = Total Glucan + free sugars % (as is) $\times \frac{100}{100 - \text{moisture content (\%)}}$



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MUSHROOM GLUCAN DETERMINATION

B. Determination of α -Glucan + free sugars (KOH/AMG + Invertase procedure)

Sample	Weight (mg)	Moisture content (%)	Dilution (fold)	Absorbance values (510 nm)	Average absorbance (510 nm)	α -Glucan + free sugars (% w/w)	
						'as is' basis	'dw' basis
1 Dried Black Fungus	96.9		-	0.052 / 0.058 / 0.057	0.056	0.50	
2 Dried Black Fungus	97.4		-	0.060 / 0.062 / 0.061	0.061	0.54	
3 Dried Black Fungus	100.4		-	0.060 / 0.063 / 0.063	0.062	0.54	
4 Dried Black Fungus	101.4		-	0.055 / 0.058 / 0.057	0.057	0.49	

Glucose Standard ($100\mu\text{g}/\Delta E_{510\text{nm}}$) = 1.069 / 1.070 / 1.067 / 1.074; Average = 1.070 ; F = 93.46

α -Glucan + free sugars, % = $\Delta E \times F \times 10.3/0.1 \times 1/1000 \times 100/W \times 162/180 = \Delta E \times F/W \times 9.27$ (for undiluted solutions)
 $\Delta E \times F \times 100/0.1 \times 1/1000 \times 100/W \times 162/180 = \Delta E \times F/W \times 90$ (for dilutions to 100mls)

α -Glucan + free sugars, (% 'dw' basis): = α -Glucan + free sugars (% , 'as is') $\times \frac{100}{100 - \text{moisture content (\%)}}$



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MUSHROOM GLUCAN DETERMINATION

C. Determination of β -GLUCAN

Sample	% (w/w, 'as is')		
	Total Glucan + free sugars	α -Glucan + free sugars	β -Glucan
1 Dried Black Fungus	49.62	0.52	49.10
2 Dried Black Fungus	49.60	0.52	49.08
3 Dried Black Fungus	49.98	0.52	49.46
4 Dried Black Fungus	49.26	0.52	48.74

Note: β -Glucan = (Total Glucan + free sugars) – (α -Glucan + free sugars)



DATE : 8/9/05

YEAST GLUCAN DETERMINATION

A. Determination of Total Glucan + free sugars

Sample	Weight (mg)	Moisture content (%)	Final Volume (ml)	Absorbance values (510 nm)	Average Absorbance (510 nm)	Total Glucan + free sugars (% w/w)	
						“as is” basis	‘dw’ basis
1 Control 30401	99.3	3	100	0.724 / 0.734 / 0.713	0.724	63.64	65.61
2 Control 30401	100.9	3	100	0.745 / 0.748 / 0.746	0.746	64.54	66.54
3 Control 30401	99.3	3	100	0.710 / 0.712 / 0.719	0.714	62.77	64.71
4 Control 30401	96.6	3	100	0.699 / 0.700 / 0.696	0.698	63.01	64.96

Glucose Standard ($100\mu\text{g}/\Delta E_{510\text{nm}}$) = 1.020 / 1.021 / 1.021 / 1.023. Average = 1.021 F = 96.99

Total Glucan + free sugars (% w/w) = $\Delta E \times F \times V/0.1 \times 100/W \times 1/1000 \times 162/180 = \Delta E \times F \times V/W \times 0.9$

Total Glucan + free sugars % (‘dw’ basis): = Total Glucan + free sugars % (as is) $\times \frac{100}{100 - \text{moisture content (\%)}}$



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YEAST GLUCAN DETERMINATION

B. Determination of α -Glucan + free sugars (KOH/AMG+ Invertase procedure)

Sample	Weight (mg)	Moisture content (%)	Dilution (fold)	Absorbance values (510 nm)	Average absorbance (510 nm)	α -Glucan + free sugars (% w/w)	
						'as is' basis	'dw' basis
1 Control 30401	102.1	3	-	0.051 / 0.051 / 0.049	0.050	0.42	0.43
2 Control 30401	100.4	3	-	0.050 / 0.054 / 0.055	0.053	0.46	0.47
3 Control 30401	103.1	3	-	0.053 / 0.058 / 0.057	0.056	0.47	0.48
4 Control 30401	98.5	3	-	0.054 / 0.051 / 0.050	0.052	0.46	0.47

Glucose Standard ($100\mu\text{g}/\Delta E_{510\text{nm}}$) = 1.069 / 1.070 / 1.067 / 1.074; Average = 1.070; F = 93.46

α -Glucan, % = $\Delta E \times F \times 10.3/0.1 \times 1/1000 \times 100/W \times 162/180 = \Delta E \times F/W \times 9.27$ (for undiluted solutions)
 $\Delta E \times F \times 100/0.1 \times 1/1000 \times 100/W \times 162/180 = \Delta E \times F/W \times 90$ (for dilutions to 100mls)

α -Glucan, (% 'dw' basis): = α -Glucan (% 'as is') $\times \frac{100}{100 - \text{moisture content (\%)}}$



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YEAST GLUCAN DETERMINATION

C. Determination of β -Glucan

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Sample	% (w/w, 'as is')		
	Total Glucan + free sugars	α -Glucan + free sugars	β -Glucan
1 Control 30401	63.64	0.45	63.19
2 Control 30401	64.54	0.45	64.09
3 Control 30401	62.77	0.45	62.32
4 Control 30401	63.01	0.45	62.56

Note: β -Glucan = (Total Glucan + free sugars) – (α -Glucan + free sugars)