

Mushroom Guru (PTY) Ltd
Strand
Western Cape
South Africa

24 July 2017

PROJECT: Mushroom Guru - QC Validation

Preliminary study conducted on behalf of: **Craig Fourie**

Principle contacts:

Craig
Nikki

Samples supplied by: **Mushroom Guru (Pty) Ltd**

Contact:

Craig

Samples

Samples were received in good order stored in food grade plastic containers and/or bags.
Samples are all purported to be *Ganoderma lucidum*.

Sample1 – MG-LZ8

Ganoderma lucidum: (Dry Antler)

Sample2 – Wild Harvested Knysna

Ganoderma lucidum: Dry Tea-cut

Sample3 – HK Xinxin& EXP Co. Ltd

Ganoderma lucidum: Dry Powder

Sample4 – Ganoderma Gold

Ganoderma lucidum: EtOH Extract (High Terpenes)

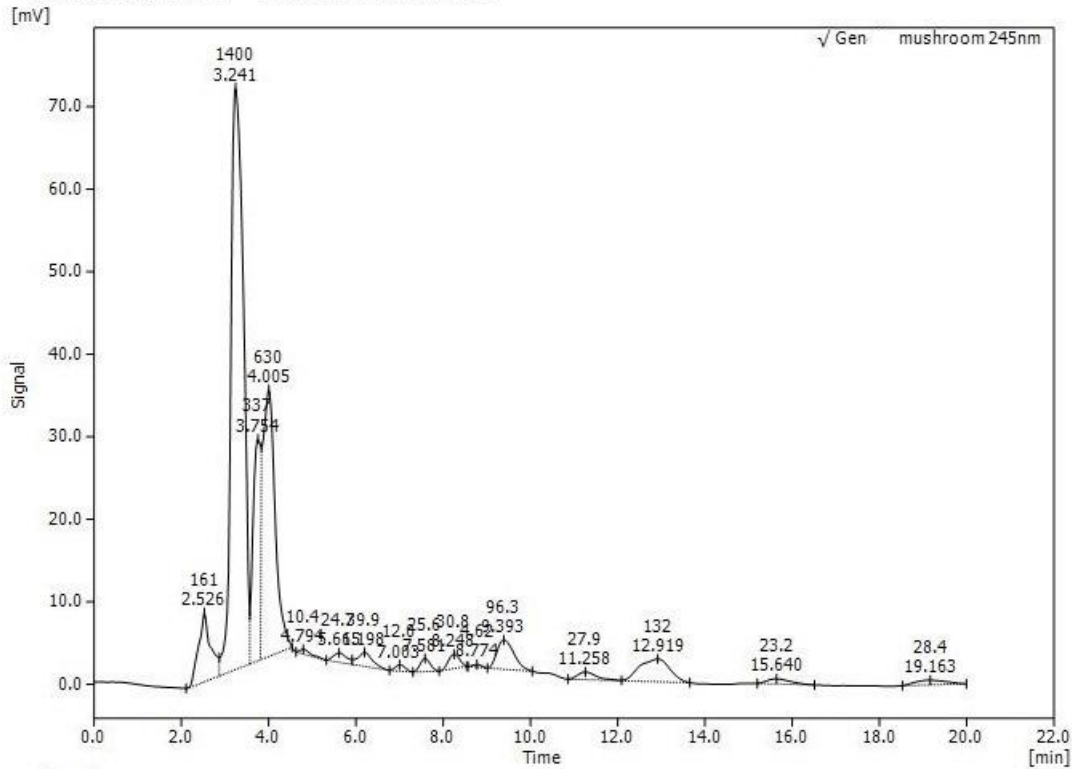
Testing – HPLC

Sample1

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MG-LZ8mushroom 245nm 0.5 flow

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{Result} Set: All Dtec. Peak. Unident PeakResponse: 1[Area]

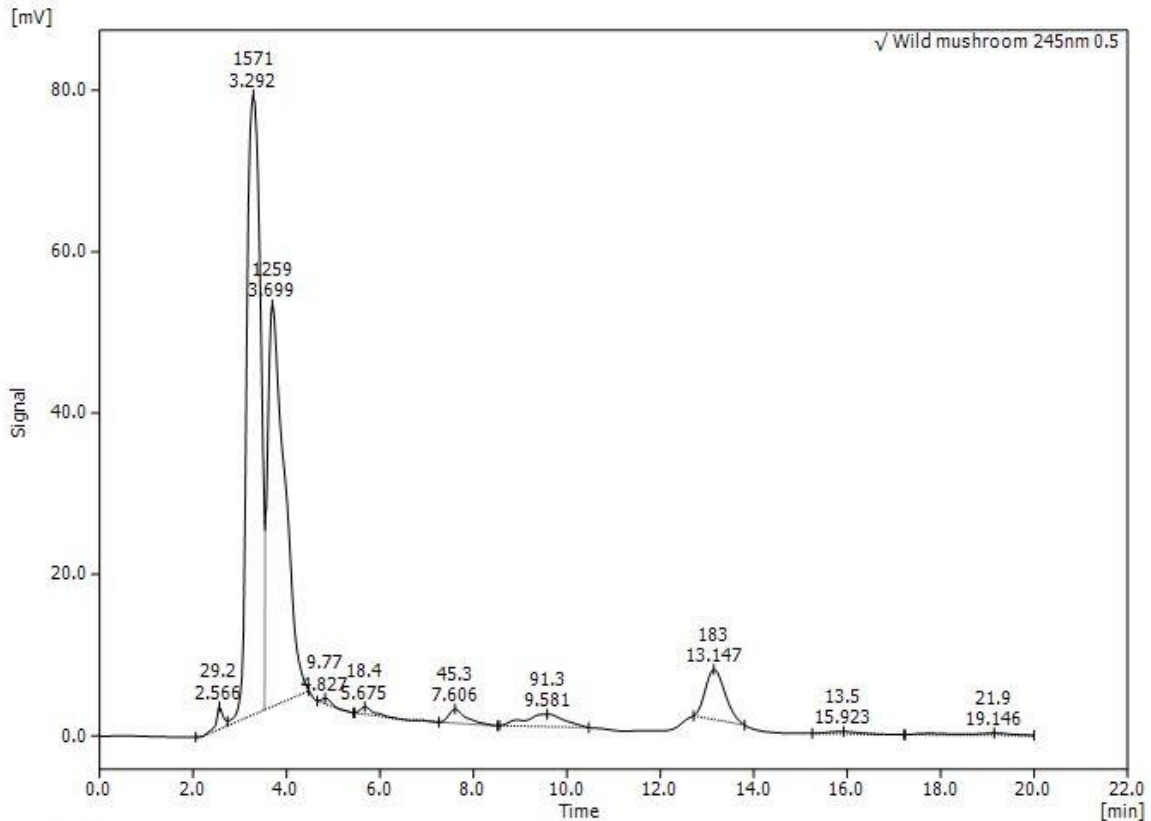
	Compound Name	Peak Style	Retain [min]	Area [mV.s]	AreaPer [%]	Height [mV]	Amount [-]
1		Overlap	2.526	161.322	5.403	8.401	161.322
2		Overlap	3.241	1400.312	46.903	70.497	1400.312
3		Overlap	3.754	337.462	11.303	26.875	337.462
4		Overlap	4.005	630.145	21.106	32.348	630.145
5		Single	4.794	10.403	0.348	0.568	10.403
6		Overlap	5.615	24.681	0.827	1.143	24.681
7		Overlap	6.198	39.935	1.338	1.702	39.935
8		Single	7.003	11.989	0.402	0.775	11.989
9		Single	7.581	25.621	0.858	1.600	25.621
10		Single	8.248	30.827	1.033	1.726	30.827
11		Single	8.774	4.623	0.155	0.325	4.623
12		Single	9.393	96.292	3.225	3.555	96.292
13		Overlap	11.258	27.926	0.935	0.927	27.926
14		Overlap	12.919	132.399	4.435	2.768	132.399
15		Single	15.640	23.230	0.778	0.627	23.230
16		Single	19.163	28.410	0.952	0.563	28.410
Total				2985.578	100.000	154.401	2985.578

Sample2

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Wild mushroom 245nm 0.5 flow

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{Result} Set:

All Dtec. Peak, Unident PeakResponse: 1[Area]

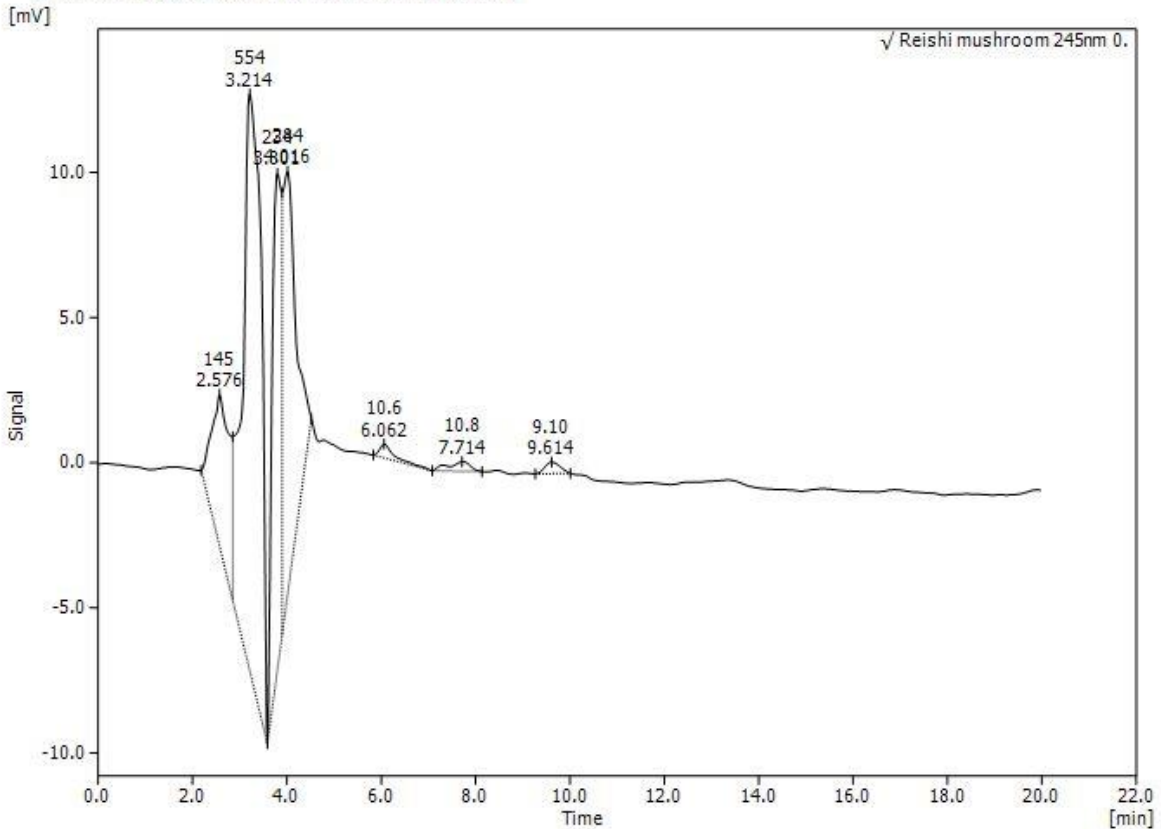
	Compound Name	Peak Style	Retain [min]	Area [mV.s]	AreaPer [%]	Height [mV]	Amount [-]
1		Overlap	2.566	29.153	0.899	2.785	29.153
2		Overlap	3.292	1571.159	48.460	76.867	1571.159
3		Overlap	3.699	1258.866	38.828	49.790	1258.866
4		Single	4.827	9.766	0.301	0.690	9.766
5		Single	5.675	18.424	0.568	0.915	18.424
6		Single	7.606	45.311	1.398	1.756	45.311
7		Single	9.581	91.300	2.816	1.550	91.300
8		Single	13.147	182.855	5.640	6.198	182.855
9		Single	15.923	13.453	0.415	0.294	13.453
10		Single	19.146	21.874	0.675	0.270	21.874
Total				3242.158	100.000	141.116	3242.158

Sample3

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Reishi mushroom 245nm 0.5 flow

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{Result}
 Set:

All Dtec. Peak, Unident PeakResponse: 1[Area]

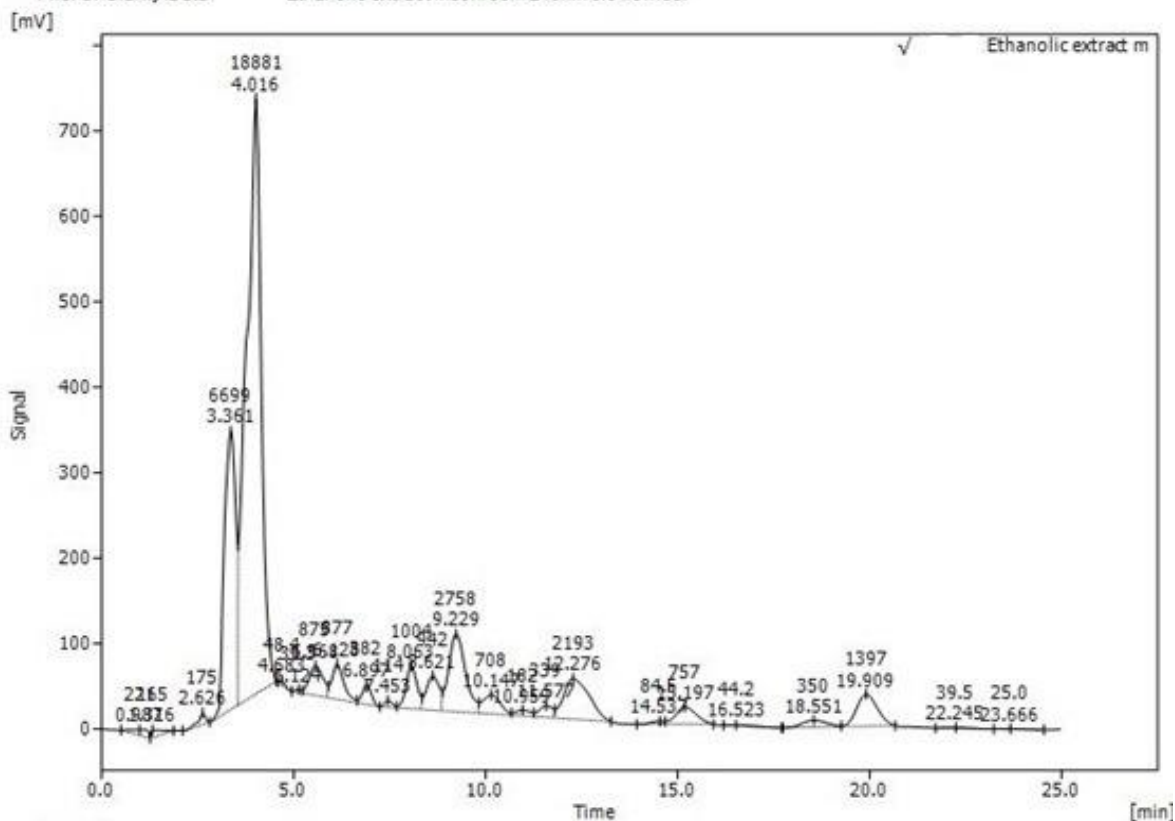
	Compound Name	Peak Style	Retain [min]	Area [mV.s]	AreaPer [%]	Height [mV]	Amount [-]
1		Overlap	2.576	145.194	11.635	5.243	145.194
2		Overlap	3.214	554.342	44.421	19.871	554.342
3		Overlap	3.801	233.982	18.750	17.084	233.982
4		Overlap	4.016	283.963	22.755	14.569	283.963
5		Single	6.062	10.597	0.849	0.477	10.597
6		Single	7.714	10.756	0.862	0.332	10.756
7		Single	9.614	9.105	0.730	0.402	9.105
Total				1247.938	100.000	57.977	1247.938

Sample4

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Ethanolic extract mushroom 245nm 0.5 flow

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{Result} Set:

All Dtec. Peak, Unident PeakResponse: 1[Area]

	Compound Name	Peak Style	Retain [min]	Area [mV.s]	AreaPer [%]	Height [mV]	Amount [-]
1		Single	0.987	220.643	0.561	6.794	220.643
2		Single	1.316	164.700	0.419	9.065	164.700
3		Single	2.626	174.920	0.445	13.693	174.920
4		Overlap	3.361	6699.444	17.047	325.649	6699.444
5		Overlap	4.016	18881.270	48.044	697.015	18881.270
6		Single	4.683	48.433	0.123	4.766	48.433
7		Overlap	5.124	39.319	0.100	3.475	39.319
8		Overlap	5.568	875.213	2.227	35.002	875.213
9		Overlap	6.128	877.029	2.232	41.491	877.029
10		Overlap	6.897	382.313	0.973	23.492	382.313
11		Overlap	7.453	114.352	0.291	7.942	114.352
12		Overlap	8.063	1004.034	2.555	49.879	1004.034
13		Overlap	8.621	941.760	2.396	40.185	941.760
14		Overlap	9.229	2757.614	7.017	90.920	2757.614
15		Overlap	10.147	708.276	1.802	22.404	708.276
16		Overlap	10.959	182.341	0.464	6.690	182.341
17		Overlap	11.577	338.632	0.862	13.806	338.632
18		Overlap	12.276	2192.905	5.580	47.711	2192.905
19		Overlap	14.537	84.540	0.215	3.543	84.540

Results and discussion

All the samples tested displayed a similar chromatographic fingerprint typical of *Ganoderma lucidum*.

As can be seen from the above results both the Mushroom Guru sample1 and the wild harvested material sample2 are typical relative to their polar & non-polar fractions. The commercial sample3 however was of a very low quality if taken in comparison with either said.

Sample4 had a 29-fold increase in total triterpenoids content when compared to sample1 after being extracted with ethanol.

Recommendations

The extraction and work-up of these products is recommended to ensure consistency with regards the quantity & quality of all active ingredients as well as affording enhanced bioavailability.

With regards,

R.P Davies