

## **Effects of Fu Brick Tea Polysaccharides on Gut Microbiota and Fecal Metabolites of HFD/STZ-Induced Type 2 Diabetes Rats**

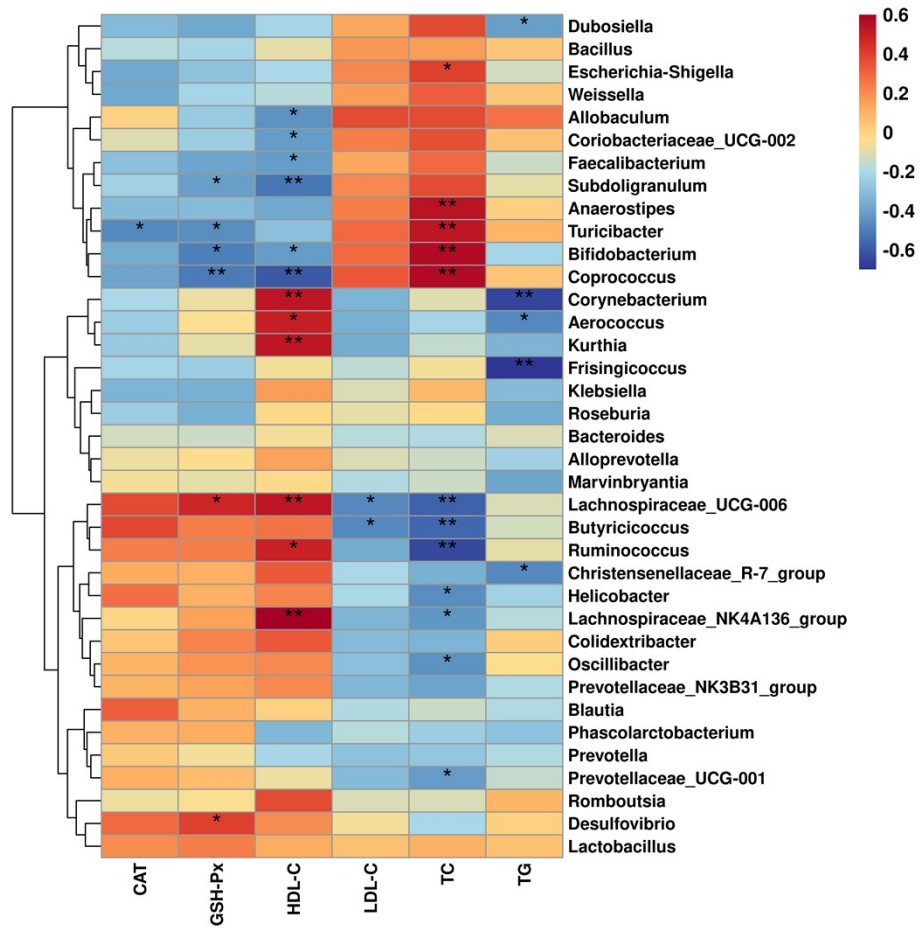
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### Correlation Heatmap



**Figure S1** Spearman's correlation between gut microbiota at genus level and biochemical parameters. Colors of squares represent R-value of Spearman's correlation.  $p < 0.05$ \* and  $p < 0.01$ \*\* indicate the association significant, respectively.

**Table S1 The basic raw data, including information on weight, blood glucose parameters, kits used, and more, is available for reference.**

Body weight (g)										
	NC group		T2DM group		Met group		FBTP-L group		FBTP-H group	
Time	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
0 Week	469.25	16.62829	455.625	22.28989	466.875	22.1194	467.75	48.01413	442.125	42.21861
1 Week	492.125	29.40086	388.125	73.30842	430.5	27.30254	414.5	95.01579	436.875	57.23994
2 Week	510.875	25.08521	411.5	62.02995	429.375	16.34396	438.5	48.35287	440.75	88.85904
3 Week	531.375	28.73991	428.75	55.03181	426.125	49.31368	435.5	100.1071	449.25	49.89632
4 Week	533.625	27.81026	421	65.34305	431	51.72455	442.75	65.05767	445.625	89.70418
5 Week	545.125	27.4249	415.375	37.28246	433.375	29.6163	446.375	57.73075	445.125	53.11292
6 Week	555.375	33.60246	416.875	22.40815	435.75	61.2833	451.875	71.2028	458.25	75.20591
7 Week	561.125	30.55411	405.875	45.36341	439.125	34.82379	451.25	57.98214	456	69.67475
8 Week	580.5	26.6351	374.75	43.30539	442	54.41113	454.75	62.40822	463.625	63.88145
Kidney weight (g)					Liver weight (g)					
NC	T2DM	Met	FBTP-L	FBTP-H	NC	T2DM	Met	FBTP-L	FBTP-H	
1.736	2.2534	1.983	1.7886	2.0599	18.0238	23.3817	23.2996	13.5272	19.946	
1.8717	2.0164	2.0141	1.5429	1.8231	17.0474	28.5654	19.8491	21.47	15.7533	
1.6728	2.2598	2.1649	1.7816	1.9399	20.5838	34.3432	15.9999	14.1116	12.9308	
1.954	2.2413	1.6856	1.87	1.9589	23.6594	27.7296	16.6685	11.8	14.8542	
1.6381	2.1434	1.9025	1.58	1.8038	18.6745	25.4964	11.6334	15.5309	16.3574	
1.9004	2.3233	2.3028	2.079	2.0137	16.8875	26.0257	17.1333	16.0813	15.8244	
1.7065	2.2728	1.9261	1.9524	1.8534	17.2658	25.6254	18.6354	14.3625	12.3624	
1.6584	2.0254	1.9657	1.8546	1.8263	18.2654	26.3254	18.6524	15.2658	13.2655	
HI% (Haptic index)					Insulin levels (mU/L)					
NC	T2DM	Met	FBTP-L	FBTP-H	NC	T2DM	Met	FBTP-L	FBTP-H	
3.173204	7.542484	5.06513	3.213112	3.9892	39.47072	41.27252	44.20045	29.78604	32.48874	

3.110839	7.231747	4.009919	5.505128	4.049692		46.79054	43.63739	44.87613	29.33559	28.43468
3.688853	8.805949	3.245416	2.627858	3.33268		46.11486	42.73649	40.25901	33.38964	29.33559
3.773429	6.602286	3.387907	2.935323	3.243275		42.8491	43.63739	40.82207	31.81306	25.39414
3.197688	7.893622	3.178525	3.339978	3.304525		36.43018	42.39865	41.38514	29.78604	29.33559
2.988938	6.080771	3.902802	2.918566	2.997045		37.66892	48.36712	40.59685	28.99775	27.75901
2.835107	7.342521	4.333814	3.572761	2.255912		36.654	48.6254	40.321	28.3654	25.654
<b>OGTT (Oral Glucose Tolerance Test)</b>										
	<b>NC group</b>		<b>T2DM group</b>		<b>Met group</b>		<b>FBTP-L group</b>		<b>FBTP-H group</b>	
<b>Time</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>
0 min	4.77	0.402906	17.3125	1.946012	12.925	5.259481	11.2125	4.547036	9.5125	3.474987
30 min	7.89	1.19485	28.1625	2.753666	23.2625	5.315459	19.575	6.242424	20.825	4.018795
60 min	7.09	1.018114	23.9125	1.82243	22.65	3.348347	18.275	7.161554	18.2625	4.981376
90 min	6.01	0.652261	21.1625	1.773566	21.6125	2.449745	17.25	7.264788	17.25	7.264788
120 min	5.82	0.482586	19.55	1.474546	18.85	3.464514	16.2625	7.086796	15.7625	6.306445
<b>ITT (Insulin Tolerance Test)</b>										
	<b>NC group</b>		<b>T2DM group</b>		<b>Met group</b>		<b>FBTP-L group</b>		<b>FBTP-H group</b>	
<b>Time</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>
0 min	4.9	0.359011	18.1875	1.631334	16.45	4.292851	14.975	2.147257	13.325	2.4662
30 min	4.37	0.845971	15.3	3.069667	14.15	4.050749	13.825	3.456567	12.5625	3.089585
60 min	3.93	1.284999	10.0125	4.829208	10.825	2.260689	9.5625	4.679725	6.575	2.206322
90 min	3.23	0.894489	10.0625	4.037304	9.925	2.22245	7.3875	3.330138	4.025	1.372953
120 min	3.78	0.995322	8.25	1.667333	9.2875	3.515044	6.15	2.675818	4.9	1.320173
<b>Fasting blood glucose (mmol/L)</b>										
	<b>NC group</b>		<b>T2DM group</b>		<b>Met group</b>		<b>FBTP-L group</b>		<b>FBTP-H group</b>	
<b>Time</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>
0 Week	5.31	0.401123	21.7875	1.660149	18.075	2.874783	19.6625	2.874864	19.1375	2.595639
1 Week	4.95	0.366742	20.025	2.483319	17.8375	3.019494	13.9625	2.1065	13.7	2.245551
2 Week	5.04	0.549909	16.675	1.070922	16.0375	1.255923	13.775	1.29301	13.1875	1.770902

3 Week	5.088	1.17893	16.3125	2.387173	15.45	1.612452	12.8375	2.173671	13	2.602883
4 Week	5.14	0.84	20.9375	2.497467	16.2875	1.325177	12.325	3.351026	12.325	2.201562
5 Week	5.04	0.67	16.6	1.367479	16.45	4.015595	11.8	3.348134	11.3625	2.897817
6 Week	5.07	0.44	16.45	1.812457	14.025	0.736122	10.9875	2.385601	9.3625	1.925446
7 Week	5.28	0.56	18.1875	1.525973	12.775	2.112907	10.8625	1.613178	9.2625	1.757795
8 Week	4.77	0.402906	17.3125	1.946012	12.925	4.919794	11.2125	4.253363	9.5125	3.250553
<b>HOMA-IR index</b>						<b>Serum TC (mmol/L)</b>				
<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>		<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>
8.244995	33.75175	42.82533	10.06106	6.786537		1.503811	37.43037	3.084448	4.500436	2.45878
8.734234	28.89765	16.15541	10.56081	10.11011		1.273302	13.85254	3.183238	3.940627	3.446678
9.018018	27.73123	23.61862	13.50425	7.953203		2.09655	33.18241	2.2612	4.072346	3.545467
8.188939	38.20696	30.11762	22.05706	12.30205		2.2612	14.59923	3.775977	4.368716	2.16241
7.771772	35.99174	21.88814	12.97347	20.6001		1.931901	10.19731	3.314958	4.039416	4.829735
8.036036	33.96446	8.841091	8.892643	12.83083		1.931901	24.42305	4.236996	4.401646	5.159034
8.145333	39.11643	28.49351	16.01069	9.805529		1.83654	15.32645	3.32651	4.2635	3.6594
7.736619	38.70569	19.67064	25.34349	13.05722		1.85634	16.3264	3.32654	4.3654	3.6548
<b>Serum TG (mmol/L)</b>						<b>Serum LDL-C (mmol/L)</b>				
<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>		<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>
1.246379	4.069502	0.480532	1.096213	0.540598		0.263841	4.586711	0.300373	0.543914	0.263841
0.916013	2.066179	0.570631	0.870963	0.690764		0.300373	2.469374	0.300373	0.51956	0.251664
0.825914	1.786977	0.495548	0.991096	0.630698		0.361258	2.091884	0.22731	0.434321	0.543914
2.387641	4.835349	0.330365	0.495548	0.675748		0.190779	2.643163	0.336904	0.568269	0.129893
0.946047	2.718007	0.495548	1.246379	0.615681		0.653508	4.72066	0.592623	0.531737	0.6048
1.411561	5.484385	0.555615	1.336478	0.390432		0.117716	6.39371	0.300373	0.580446	0.51956
1.2654	3.85564	0.4658	1.00654	0.63254		0.31465	6.2654	0.3654	0.55265	0.38654
1.2658	3.86541	0.4658	1.0326	0.6254		0.3654	6.3254	0.3654	0.5354	0.389564
<b>Serum HDL-C (mmol/L)</b>						<b>CAT activity (U/mgprot)</b>				
<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>		<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>

6.760818	5.076043	5.336909	7.447768	7.62386	1.101542	0.05055	0.268835	0.204884	0.301544
6.565168	4.489093	5.304301	6.695601	7.162993	1.400601	0.353121	0.22632	0.251275	1.035863
6.499951	4.326051	5.206476	6.532559	7.065168	1.384954	0.140324	0.391927	0.210494	0.208433
6.239084	4.288226	5.206476	5.869518	6.576043	1.562064	0.29125	0.365782	0.421077	0.328441
6.010826	4.2598	4.521701	5.804301	5.956484	1.386932	0.277474	0.201078	0.235337	0.276551
5.815176	4.130401	4.293442	6.847784	4.847784	1.165	0.2265	0.196546	0.2654	0.43654
6.3214	4.4356	5.03264	5.963234	7.03256	1.16625	0.2654	0.193254	0.3654	0.43654
6.3254	4.5624	5.12356	5.9546	7.0154	1.1166	0.226584	0.26548	0.4652	0.4654
<b>GSH-Px activity (U/mgprot)</b>					<b>Acetic acid (mmol/g)</b>				
<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>	<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>
0.329803	0.19317	0.167569	0.113084	0.324243	14.326	5.6235	9.548	10.265	13.6985
0.303354	0.186109	0.19153	0.174751	0.418364	14.265	6.3215	9.264	10.658	14.658
0.599088	0.145957	0.153509	0.26334	0.152904	15.654	5.3654	9.354	11.365	14.6354
0.516966	0.125338	0.198196	0.253993	0.51928	<b>Propionic acid (mmol/g)</b>				
0.503221	0.190992	0.191462	0.260955	0.137887	<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>
0.522735	0.190992	0.130123	0.130647	0.3265	6.3	4.2366	5.625	5.75631	6.3254
0.46525	0.176331	0.175623	0.2316	0.3654	6.364	4.0325	5.0325	5.864	6.3125
0.465385	0.176413	0.17632	0.2654	0.4126	6.02631	4.362	5.215	5.92	6.254
<b>Butyric acid (mmol/g)</b>					<b>Succinate acid (ug/g)</b>				
<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>	<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>
4.325	3.265	3.6548	3.9654	4.035	100	41.32	150.36	162.35	210.326
4.156	3.652	3.654	3.8654	4.658	101.65	53.625	160.325	170.654	190.365
4.652	3.54	3.8445	3.8469	4.658	118.36	45.658	148.36	169.365	200.3265
<b>Firmicutes richness (%)</b>					<b>Bacteroidota richness (%)</b>				
<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>	<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>
88.08984	50.73987	50.89411	85.00988	79.82359	8.709693	0.294018	28.77524	11.17752	10.48826
82.23358	39.57199	66.5542	75.02771	76.72917	16.15655	58.73138	37.27768	19.33292	15.07688
78.98973	45.0764	67.2772	76.59421	58.62534	19.43414	3.802959	29.2717	18.8461	35.55695

85.89194	67.93753	52.63412	72.90693	86.51371		5.918928	20.23907	17.8821	23.44917	9.794187
<i>Actinobacteriota</i> richness (%)						<i>Proteobacteria</i> richness (%)				
<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>		<b>NC</b>	<b>T2DM</b>	<b>Met</b>	<b>FBTP-L</b>	<b>FBTP-H</b>
0.06748	48.35398	1.412252	0.303658	1.166434		0.09158	0.612137	0.665156	0.453078	0.08676
0.130139	0.462718	0.327758	0.713356	7.013062		0.173519	0.03374	0.906155	0.400058	0.935075
0.930255	0.120499	2.872704	0.501277	1.696631		0.101219	0.322938	0.289198	0.00964	3.330602
0.467537	0	0	2.005109	0.255459		0.0482	6.791343	0.636237	0.477177	1.595411

