

Revised Supplementary Information (Additional Files)

**Quantification of microbial uptake of quercetin and
its derivatives using an UHPLC-ESI-QTOF mass
spectrometry assay**

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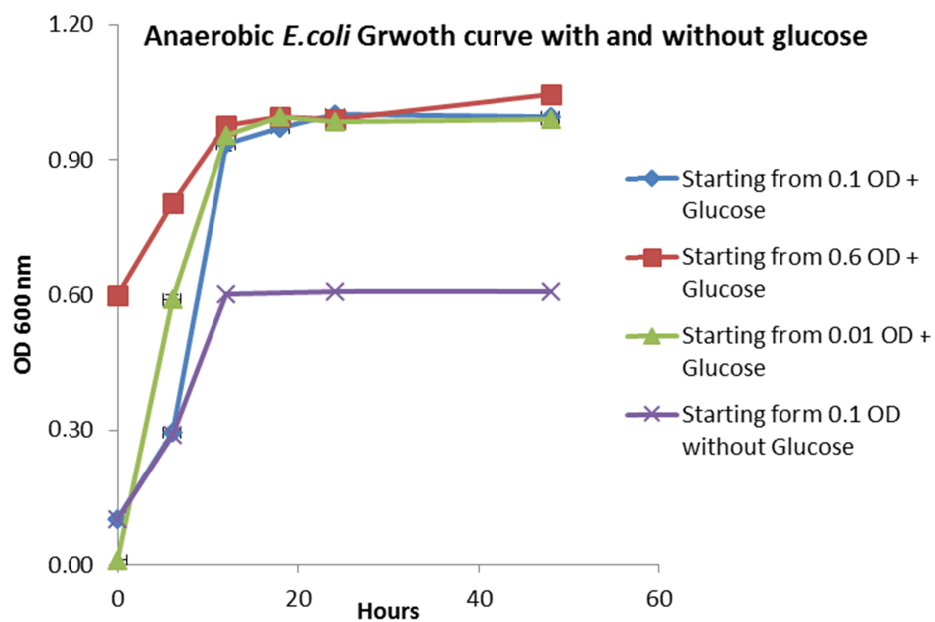


Figure S1: Anaerobic *E.coli* W3110 growth curve with and without glucose

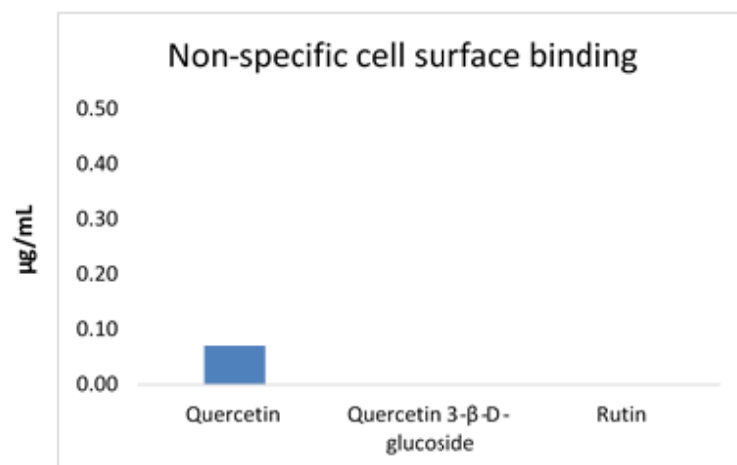


Figure S2: Quantification of non-specific cell surface binding of quercetin, quercetin 3- β -D-glucoside and rutin in wild type *E. coli* W3110.

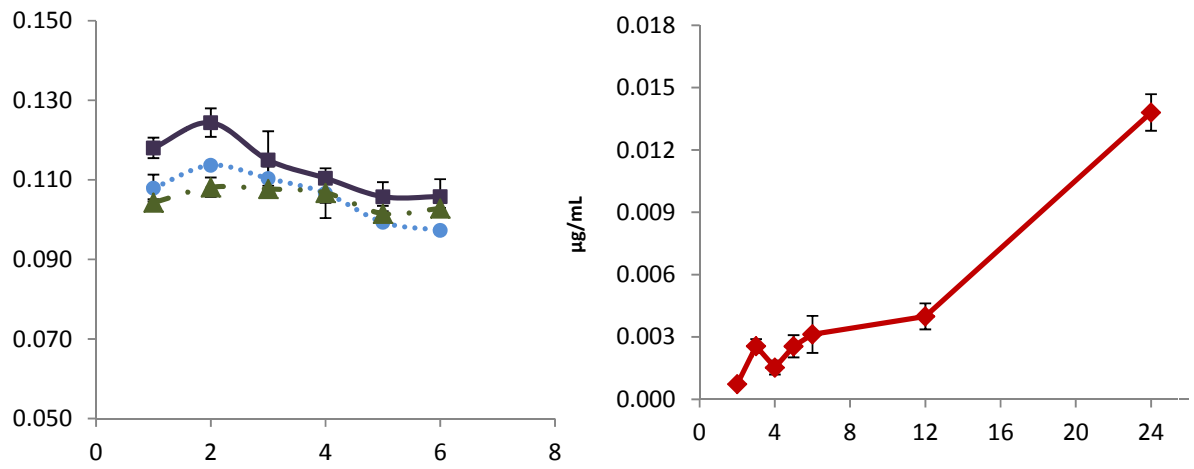


Figure S3: Quantification of formation of quercetin by de-glycosylation of rutin in (A) wild type (..... line) Δ AcrAB (— line) and $\Delta\Delta$ OmpFC *E. coli* (— . — line) over aerobic incubation. (B) *Bifidobacterium bifidum* under anaerobic incubation period. All biological samples are grown in triplicate.

Note: Figure (A) Y axis maximum range is 0.15 µg/mL and figure (B) maximum range is 0.018 µg/mL

Table S1: Quantification of uptake of **quercetin 3- β -D-glucoside** in three different biological replicas of wild type, Δ AcrAB and $\Delta\Delta$ Omp FC strains of *E. coli*.

<i>E.coli</i> strain	$\mu\text{g/mL}$ concentration in biological replicates			Average Conc			
	Time in hours	A	B	C	$\mu\text{g/mL}$	SD	Error
Wild type	1	1.646	1.069	1.540	1.418	0.307	0.177
	2	1.936	1.965	1.857	1.919	0.056	0.032
	3	1.810	1.592	1.871	1.757	0.147	0.085
	4	1.820	1.217	1.217	1.418	0.348	0.201
	5	1.594	1.148	0.815	1.186	0.391	0.226
	6	1.100	0.669	1.193	0.988	0.280	0.161
Δ AcrAB	1	1.537	1.487	1.404	1.476	0.067	0.039
	2	2.232	1.763	2.045	2.013	0.236	0.136
	3	2.003	2.192	2.068	2.088	0.096	0.055
	4	1.602	1.883	1.935	1.807	0.179	0.103
	5	1.361	1.468	2.118	1.649	0.410	0.237
	6	1.793	2.034	2.393	2.073	0.302	0.174
$\Delta\Delta$ Omp F C	1	1.624	1.958	2.147	1.910	0.265	0.153
	2	3.045	3.025	3.787	3.286	0.434	0.251
	3	2.630	4.507	2.973	3.370	1.000	0.577
	4	3.990	4.530	4.804	4.441	0.414	0.239
	5	3.248	5.282	5.095	4.541	1.124	0.649
	6	4.265	4.058	4.814	4.379	0.391	0.226

Table S2: Quantification of uptake of **quercetin** in three different biological replicas of wild type, Δ AcrAB and $\Delta\Delta$ Omp FC strains of *E. coli*.

<i>E.coli</i> strain	Time in hours	$\mu\text{g/mL}$ concentration in biological replicates			Average Conc		
		A	B	C	$\mu\text{g/mL}$	SD	Error
Wild type	1	0.039	0.092	0.122	0.084	0.042	0.024
	2	0.399	0.785	0.909	0.698	0.266	0.153
	3	0.898	1.022	0.614	0.845	0.209	0.121
	4	0.382	0.871	0.574	0.609	0.246	0.142
	5	0.361	0.549	0.776	0.562	0.208	0.120
	6	0.592	0.658	0.618	0.622	0.033	0.019
Δ AcrAB	1	1.207	0.735	1.252	1.065	0.287	0.166
	2	0.606	0.945	1.166	0.906	0.282	0.163
	3	0.546	0.531	0.645	0.574	0.062	0.036
	4	0.438	0.601	0.577	0.539	0.088	0.051
	5	0.269	0.323	0.309	0.300	0.028	0.016
	6	0.220	0.266	0.187	0.224	0.040	0.023
$\Delta\Delta$ Omp FC	1	1.222	1.300	0.950	1.157	0.184	0.106
	2	1.628	2.263	1.039	1.643	0.612	0.353
	3	2.074	3.489	3.805	3.123	0.922	0.532
	4	3.208	3.513	2.209	2.977	0.682	0.394
	5	2.456	3.788	3.645	3.296	0.731	0.422
	6	3.555	4.047	3.810	3.804	0.246	0.142

Table S3: Quantification of uptake of **rutin** in three different biological replicas of wild type, Δ AcrAB and $\Delta\Delta$ Omp FC strains of *E. coli*.

<i>E.coli</i> strain	Time in hours	$\mu\text{g/mL}$ concentration in biological replicates			Average Conc		
		A	B	C	$\mu\text{g/mL}$	SD	Error
Wild type	1	0.176	0.214	0.195	0.195	0.03	0.02
	2	0.206	0.218	0.212	0.212	0.01	0.01
	3	0.200	0.223	0.212	0.212	0.02	0.01
	4	0.179	0.202	0.191	0.191	0.02	0.01
	5	0.186	0.195	0.191	0.191	0.01	0.00
	6	0.200	0.181	0.191	0.191	0.01	0.01
Δ AcrAB	1	0.230	0.226	0.228	0.228	0.00	0.00
	2	0.343	0.256	0.300	0.300	0.06	0.04
	3	0.256	0.260	0.258	0.258	0.00	0.00
	4	0.199	0.234	0.217	0.217	0.02	0.02
	5	0.227	0.237	0.232	0.232	0.01	0.00
	6	0.207	0.226	0.217	0.217	0.01	0.01
$\Delta\Delta$ Omp FC	1	0.176	0.187	0.181	0.181	0.01	0.01
	2	0.206	0.200	0.203	0.203	0.00	0.00
	3	0.192	0.182	0.187	0.187	0.01	0.00
	4	0.176	0.187	0.181	0.181	0.01	0.01
	5	0.176	0.202	0.189	0.189	0.02	0.01
	6	0.190	0.177	0.184	0.184	0.01	0.01