

Supplementary Materials: *Saccharomyces cerevisiae* Boulardii Reduces the Deoxynivalenol-Induced Alteration of the Intestinal Transcriptome

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Table S1: Expression of the genes involved in the NF- κ B signalling pathway.

Genes in the NF- κ B Signalling pathway	Fold change DON compared to control	Fold change DON+S. c. boulardii compared to control
<i>IL1B</i>	11.37	9.56
<i>IL1A</i>	4.17	3.96
<i>TNFAIP3</i>	3.47	2.78
<i>TNF</i>	2.37	2.08
<i>BMP2</i>	2.04	1.70
<i>NFKBIA</i>	2.00	1.53
<i>Bcl10</i>	1.38	1.41
<i>NFKBIE</i>	1.34	1.53
<i>PELI1</i>	1.50	1.23
<i>NF-κB1</i>	1.41	1.30
<i>IL1R1</i>	1.44	-
<i>TRAF6</i>	1.30	-
<i>NF-κB2/p52_</i>	1.39	-
<i>TANK</i>	-	1.18
<i>EP300</i>	1.35	-
<i>FADD</i>	1.16	-
<i>CD40</i>	1.31	-
<i>TNFRSF1A</i>	1.27	-
<i>TNFSF13B</i>	1.24	-
<i>TRAF3</i>	1.23	-
<i>PTPN11</i>	1.23	-
<i>JNK1</i>	-	-
<i>PIK3C3</i>	1.21	-
<i>TNFRSF1B</i>	1.19	-
<i>GHR</i>	-	1.18
<i>PIK3R5</i>	1.17	-
<i>IRAK4</i>	1.17	-
<i>IKBKB</i>	1.14	-
<i>NFKBIB</i>	1.14	-
<i>p65/RelA</i>	1.13	-
<i>TRADD</i>	0.91	-
<i>IGF2R</i>	0.89	-
<i>CHUK</i>	0.84	-
<i>TIRAP</i>	-	0.84
<i>PIK3CG</i>	-	0.82
<i>FGFR2</i>	-	-
<i>Zap70</i>	0.78	-
<i>MRAS</i>	-	-
<i>ATM</i>	0.73	-
<i>EGFR</i>	-	0.82
<i>INSR</i>	-	0.83
<i>PIK3R3</i>	-	0.79
<i>Caspase_8</i>	-	0.77
<i>RRAS</i>	-	0.80

<i>PDGFRB</i>	-	0.78
<i>BMPR1B</i>	-	-
<i>AKT3</i>	0.69	0.66

Table S2: List of probes with a fold change >2 in the DON and DON+S.c. *boulardii* conditions.

Probe Name	DON Fold change	Adjusted <i>p</i> Value	DON+S. <i>c. boulardii</i> Fold change	Adjusted <i>p</i> Value
47522925	11.44	6.2736×10^{-13}	9.05	8.7897×10^{-12}
IL1B	11.37	6.2736×10^{-13}	9.56	6.0056×10^{-12}
IL1B	7.10	6.2736×10^{-13}	6.07	8.7897×10^{-12}
IL22	5.62	3.236×10^{-08}	5.56	7.7315×10^{-08}
60678608	5.13	4.7401×10^{-08}	5.11	1.1015×10^{-07}
NOR-1	5.09	1.0735×10^{-09}	3.88	7.7315×10^{-08}
47523707	5.02	1.2718×10^{-07}	3.90	4.9499×10^{-06}
PTGS2	5.01	3.6347×10^{-08}	3.96	1.3234×10^{-06}
PTGS2	4.95	3.3706×10^{-08}	3.86	1.496×10^{-06}
PTGS2	4.95	3.8989×10^{-08}	3.90	1.4846×10^{-06}
NOR-1	4.91	3.0555×10^{-10}	3.79	2.8721×10^{-08}
47523565	4.76	1.3392×10^{-09}	3.85	5.4539×10^{-08}
CXCL2	4.65	0.00045897	3.22	0.01419023
CXCL2	4.64	0.00081411	3.17	0.02169822
49274638	4.50	0.00053669	3.24	0.01261354
Il1a	4.17	5.7781×10^{-09}	3.96	2.9018×10^{-08}
CCL20	4.17	8.9573×10^{-08}	3.96	3.8487×10^{-07}
NOR-1	3.99	6.5959×10^{-10}	3.45	1.7563×10^{-08}
CCL20	3.95	1.3632×10^{-07}	3.78	4.9146×10^{-07}
66793464	3.94	1.4181×10^{-07}	3.78	5.0347×10^{-07}
IL1A	3.84	7.4723×10^{-09}	3.34	1.1015×10^{-07}
47522877	3.78	9.7837×10^{-09}	3.51	6.5873×10^{-08}
93205063	3.75	8.4381×10^{-09}	2.93	7.0177×10^{-07}
CN156953	3.62	1.8359×10^{-09}	3.10	5.4539×10^{-08}
TC627308	3.57	2.6667×10^{-07}	3.10	4.3921×10^{-06}
gi	3.47	1.0808×10^{-08}	2.78	8.1471×10^{-07}
47523041	3.46	4.1671×10^{-06}	2.82	0.00011743
IL1A	3.39	4.5739×10^{-09}	3.17	2.9018×10^{-08}
AW231940	3.39	1.4181×10^{-07}	2.65	1.3585×10^{-05}
AK351795	3.36	5.7781×10^{-09}	2.91	1.2324×10^{-07}
CCR7	3.36	1.3632×10^{-07}	2.63	1.3511×10^{-05}
HAMP	3.34	2.4568×10^{-05}	2.48	0.00195421
gi	3.33	2.6576×10^{-09}	2.65	3.0711×10^{-07}
PLK2	3.28	1.0225×10^{-11}	2.60	2.3193×10^{-09}
AREG	3.26	7.4898×10^{-08}	2.75	2.497×10^{-06}
AREG	3.25	5.0233×10^{-08}	2.72	2.0782×10^{-06}
115551839	3.20	5.2526×10^{-06}	2.95	3.2479×10^{-05}
AREG	3.18	7.0086×10^{-08}	2.87	7.483×10^{-07}
47523807	3.17	2.4638×10^{-08}	2.79	4.8067×10^{-07}
PRDM1	3.17	6.2736×10^{-13}	2.86	8.7897×10^{-12}
PLK2	3.15	1.2924×10^{-11}	2.50	3.8877×10^{-09}
FOSL1	3.11	4.7056×10^{-05}	2.82	0.00026329
TC525635	3.10	4.6374×10^{-10}	2.60	2.9018×10^{-08}
AK348278	3.05	1.0225×10^{-11}	2.60	7.9456×10^{-10}
IL-1beta	3.03	5.9125×10^{-10}	2.59	2.9018×10^{-08}

AJ957055	2.94	1.2365×10^{-08}	2.94	2.9018×10^{-08}
CSF2	2.93	4.5981×10^{-05}	2.30	0.00221347
IL-1beta	2.93	1.6271×10^{-08}	2.81	7.7315×10^{-08}
Adamts1	2.92	9.3286×10^{-10}	2.28	3.2459×10^{-07}
AK347702	2.91	0.00011255	2.34	0.0033115
CRSP-2	2.90	1.3083×10^{-05}	2.04	0.00456955
ADAMTS1	2.90	2.0854×10^{-10}	2.11	3.839×10^{-07}
A_72_P320813	2.89	5.7781×10^{-09}	2.64	6.3784×10^{-08}
TC555952	2.87	0.00010277	3.32	2.7122×10^{-05}
OTTSUST00000000991	2.87	9.2221×10^{-05}	2.23	0.00441692
ADAMTS1	2.85	4.8823×10^{-07}	1.76	0.00609687
PRDM1	2.84	6.9286×10^{-11}	2.59	9.8395×10^{-10}
ENSSSCT00000001477	2.75	6.6238×10^{-05}	2.38	0.00086986
CD274	2.74	3.4727×10^{-07}	1.89	0.00074745
RRAD	2.73	0.00150172	2.08	0.03544042
PRDM1	2.73	9.3632×10^{-11}	2.55	9.8395×10^{-10}
LOC100125547	2.71	3.6493×10^{-06}	1.81	0.00714535
68534987	2.71	1.1113×10^{-06}	1.98	0.0006497
gi	2.69	1.1126×10^{-07}	2.53	7.3347×10^{-07}
55926204	2.68	9.7709×10^{-09}	2.33	3.2936×10^{-07}
IFRD1	2.66	1.4724×10^{-08}	2.32	4.8577×10^{-07}
HAMP	2.64	0.00012804	2.16	0.00378074
GADD45G	2.64	7.5736×10^{-06}	2.70	9.5435×10^{-06}
IL8	2.63	0.00014637	2.85	7.8232×10^{-05}
atf3	2.61	1.5184×10^{-06}	2.57	4.0408×10^{-06}
47523123	2.60	0.00019864	2.81	0.0001057
115547203	2.58	6.9675×10^{-08}	2.23	3.0495×10^{-06}
Gadd45b	2.58	0.00022465	2.11	0.00621803
SELE	2.58	4.8509×10^{-05}	1.94	0.00663333
gi	2.57	2.5555×10^{-07}	2.59	4.7838×10^{-07}
TC549648	2.55	5.1169×10^{-06}	2.63	5.512×10^{-06}
47523601	2.54	0.00014383	1.94	0.01214024
113205835	2.54	1.5531×10^{-06}	2.67	1.3124×10^{-06}
GADD45A	2.52	1.7789×10^{-06}	2.58	2.497×10^{-06}
TC597844	2.52	1.272×10^{-07}	2.25	2.7958×10^{-06}
SOCS3	2.51	1.6249×10^{-07}	1.96	6.138×10^{-05}
IL8	2.51	0.00026723	2.81	8.8101×10^{-05}
SELE	2.51	0.00021952	1.99	0.00988219
47523021	2.50	1.5379×10^{-07}	2.02	2.95×10^{-05}
IL8	2.49	0.00034265	2.91	6.6146×10^{-05}
CXCL2	2.49	0.01969183	1.94	0.10950617
50979294	2.48	2.5245×10^{-07}	1.87	0.00020473
Csf2	2.48	0.00022597	1.95	0.0118176
ADM	2.46	2.0241×10^{-07}	2.02	2.7197×10^{-05}
BTG2	2.45	9.0718×10^{-07}	2.32	5.6846×10^{-06}
GADD45A	2.44	3.3295×10^{-06}	2.60	2.1169×10^{-06}
TC625160	2.43	3.1994×10^{-07}	2.04	2.8814×10^{-05}
MMP12	2.41	0.00020527	2.07	0.00352334
SELE	2.40	0.00017649	1.92	0.00894318

LOC100153365	2.40	0.0001111	2.34	0.00026507
47523043	2.39	9.5678×10^{-06}	1.83	0.00254017
47523385	2.39	2.1361×10^{-08}	2.15	4.8067×10^{-07}
PMAIP1	2.39	1.9223×10^{-08}	2.19	3.097×10^{-07}
RND1	2.39	3.3366×10^{-06}	2.48	3.073×10^{-06}
PRDM1	2.38	6.9286×10^{-11}	2.18	1.3328×10^{-09}
gi	2.38	2.7814×10^{-08}	2.39	5.9161×10^{-08}
OTTSUST00000000652	2.37	7.754×10^{-07}	2.08	2.5923×10^{-05}
socs3	2.37	5.9669×10^{-07}	1.89	0.00015742
LOC100522679	2.37	9.2332×10^{-09}	1.99	1.1332×10^{-06}
ADM	2.36	9.5664×10^{-07}	2.15	1.3585×10^{-05}
gi	2.33	3.4727×10^{-07}	2.24	1.7316×10^{-06}
AK347353	2.31	0.00506051	1.85	0.05661784
RGS1	2.30	5.9024×10^{-07}	2.27	1.6038×10^{-06}
ARG1	2.29	0.00018498	2.33	0.00023838
IL17A	2.28	0.00257817	1.95	0.02535734
gi	2.26	5.1964×10^{-07}	2.02	1.2557×10^{-05}
ENSSSCT00000000501	2.24	8.092×10^{-07}	1.80	0.00023044
gi	2.24	0.03555443	1.91	0.11393206
AK347353	2.23	0.0029344	1.80	0.0481684
IFRD1	2.23	1.3034×10^{-06}	2.08	1.2461×10^{-05}
gi	2.23	4.8086×10^{-07}	1.71	0.00048171
PMAIP1	2.22	4.8815×10^{-08}	2.00	1.3997×10^{-06}
RGS1	2.22	1.9239×10^{-06}	2.26	2.874×10^{-06}
IL8	2.21	0.00814111	2.95	0.0004445
BTG2	2.21	1.4181×10^{-07}	1.80	4.8351×10^{-05}
TC527871	2.21	9.8502×10^{-05}	1.67	0.01968218
CXCR4	2.20	8.1533×10^{-07}	2.00	1.4729×10^{-05}
stc1	2.20	8.092×10^{-07}	1.69	0.00072931
CXCR4	2.19	7.3317×10^{-07}	1.88	5.1053×10^{-05}
NEDD9	2.19	6.689×10^{-08}	2.12	3.1774×10^{-07}
BIRC3	2.18	1.7789×10^{-06}	1.80	0.0002492
STC1	2.18	2.4211×10^{-06}	1.71	0.00095903
TC614762	2.17	9.7837×10^{-09}	1.68	2.3958×10^{-05}
BTG2	2.16	2.2905×10^{-07}	1.76	7.627×10^{-05}
TNF	2.15	7.8791×10^{-07}	1.82	7.6972×10^{-05}
NEDD9	2.15	8.9573×10^{-08}	2.14	2.3285×10^{-07}
GADD45B	2.15	0.00234554	1.58	0.09308427
NR4A2	2.15	5.3429×10^{-07}	1.93	1.3568×10^{-05}
47523273	2.14	4.8388×10^{-06}	2.10	1.3585×10^{-05}
TC564655	2.14	4.8952×10^{-06}	1.73	0.00101017
STC1	2.14	9.3229×10^{-07}	1.73	0.00029361
TSC22D2	2.13	1.3119×10^{-06}	1.76	0.00021609
115548802	2.13	0.00293895	1.63	0.07359836
SPRY2	2.10	2.2798×10^{-08}	1.99	2.0813×10^{-07}
NP276701	2.09	0.00074132	1.60	0.05170575
TC617997	2.08	8.1358×10^{-06}	2.07	1.7259×10^{-05}
49618793	2.08	3.1885×10^{-09}	1.62	9.9325×10^{-06}
PDE4B	2.07	1.1412×10^{-06}	1.48	0.01036891

GEM	2.07	5.1169×10^{-06}	1.77	0.00032865
TNF	2.07	1.8216×10^{-07}	1.71	6.138×10^{-05}
LOC396677	2.06	4.3308×10^{-05}	2.07	6.5829×10^{-05}
LOC396677	2.06	7.0174×10^{-05}	2.13	6.2581×10^{-05}
CD83	2.06	3.4839×10^{-07}	1.65	0.00022829
CALCB	2.06	0.00013461	1.59	0.02424988
A_72_P164316	2.04	1.1394×10^{-08}	1.70	4.556×10^{-06}
BDKRB1	2.04	0.01829254	1.60	0.14293007
LOC100152253	2.04	3.6397×10^{-05}	1.86	0.00039613
PDE4B	2.03	1.5677×10^{-06}	1.78	8.2115×10^{-05}
dusp6	2.01	5.9436×10^{-06}	1.78	0.00019727
TNF	2.01	8.0164×10^{-06}	1.74	0.00043955
FST	2.01	6.1328×10^{-05}	1.88	0.00040132
BMP2	2.01	9.7709×10^{-09}	1.65	6.758×10^{-06}
TC572412	2.01	0.00445372	1.79	0.03049821
52346211	2.00	1.5483×10^{-06}	1.53	0.00324983
IL17A	2.00	0.00023512	1.82	0.00248978
ifrd1	2.00	3.8407×10^{-06}	1.65	0.00085465

Table S3: Primer sequences used for qRT-PCR analysis (F: Forward; R: Reverse).

Gene symbol	Gene name	Primer sequence	Temperature (°C)	Product size (bp)	References
<i>CycloA</i>	Cyclophilin A	F: CCCACCGTCTTCTTCGACAT R: TCTGCTGTCTTTGGAACCTTGTCT	83	92	NM_214353 [1]
<i>RPL32</i>	Ribosomal protein L32	F: AGTTCATCCGGCACCAGTCA R: GAACCTTCTCCGCACCCTGT	80	92	NM_001001636 [1]
<i>IL1-α</i>	Interleukin 1- alpha	F: TCAGCCGCCCATCCA R: AGCCCCCGGTGCCATGT	79	68	NM_214029.1 [2]
<i>IL1-β</i>	Interleukin 1 - beta	F: ATGCTGAAGGCTCTCCACCTC R: TTGTTGCTATCATCTCCTTGAC	78	89	NM_214055 [1]
<i>IL12p40</i>	Interleukin 12 - p 40	F: GGTTTCAGACCCGACGAACTCT R : CATATGGCCACAATGGGAGATG	82.5	112	NM_214013 [2]
<i>IL17A</i>	Interleukin 17 - alpha	F: CCAGACGGCCCTCAGATTAC R: CACTTGGCCTCCCAGATCAC	79.6	66	AB102693 [2]
<i>IL22</i>	Interleukin - 22	F: AAGCAGGTCCTGAACTTCAC R: CACCCTTAATACGGCATTGG	81.3	133	AY937228 [2]
<i>TNF-α</i>	Tumor necrosis factor - alpha	F: ACTGCACTTCGAGGTTATCGG R: GCGACGGGCTTATCTGA	82	118	NM_214022 [2]
<i>IL-8</i>	Interleukin - 8	F: GCTCTCTGTGAGGCTGCAGTTC R: AAGGTGTGGAATGCGTATTTATGC	79	79	NM_213867 [3]
<i>CAT</i>	Catalase	F: TGACAAGATGCTGCAGGGC R: GCGGTGGCGGTGAGTG	80	55	NM_214301 Current study
<i>LXR</i>	Liver X receptor	F: CCTGGGCGCTCGGAC R: CCTCCACCCACAAGGACATCT	79	68	XM_005660919.1 Current study
<i>Cldn4</i>	Claudin - 4	F: CTGCTTTGCTGCAACTGCC R: TCAACGGTAGCACCTTACACGTAGT	85	107	AK233156 Current study
<i>LYZ</i>	Lysozyme	F: GGTCTATGATCGGTGCGAGTTC R: TCCATGCCAGACTTTTTTCAGAAT	77	51	ENSSSCT00000034939 [1]
<i>NF-κB</i>	Nuclear factor kappa B	F: CCTCCACAAGGCAGCAAATAG R: TCCACACCGCTGTACAGA	79	61	ENSSSCT00000033438 [4]

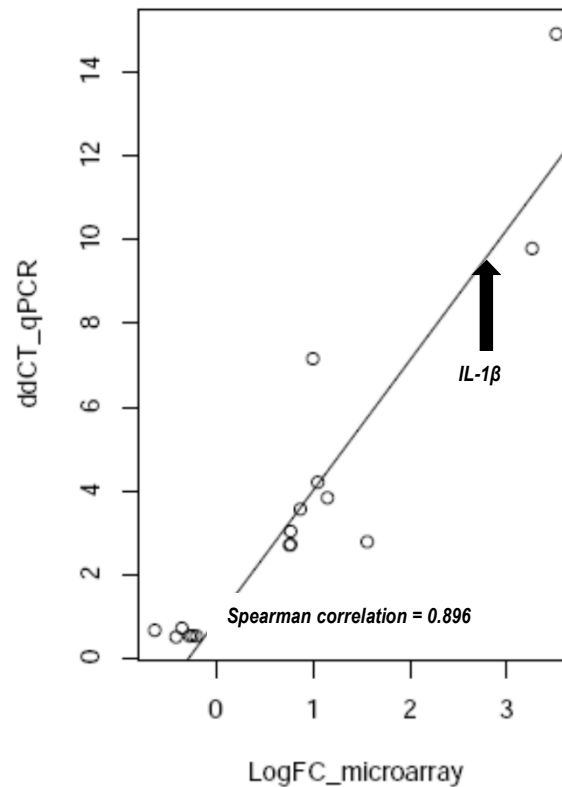


Figure S1: Comparison between microarray-based results (Log₂(FC)) and qRT-PCR-based results Log₂ (2- $\Delta\Delta$ Ct) by Spearman correlation scattered plots.

References

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