animals

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*Supplementary Material*

# The Impact of Whole Sesame Seeds on the Expression of Key-Genes Involved in the Innate Immunity of Dairy Goats

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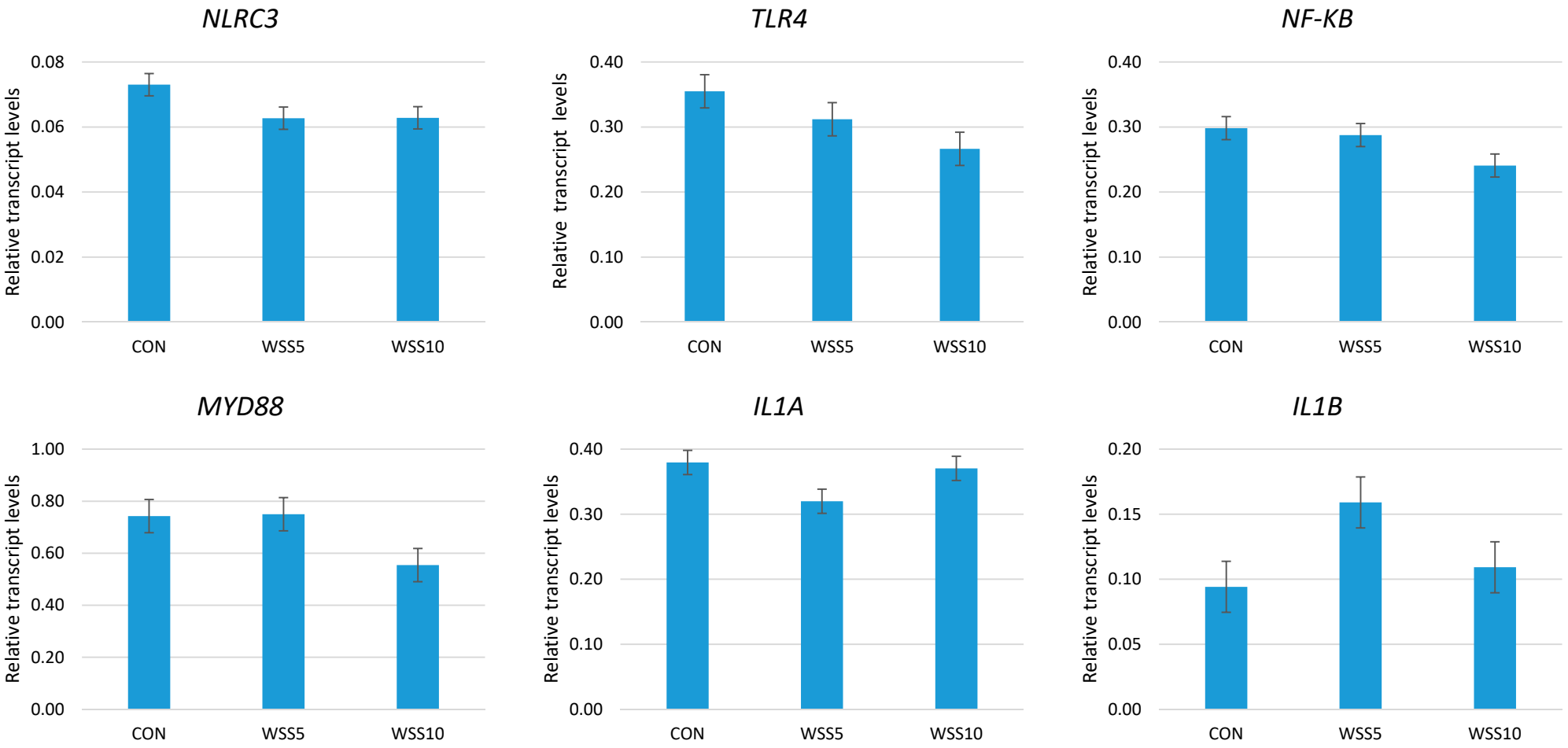
**Table S1.** Transcript abundance of several genes in the neutrophils of goats: NOD-like receptor (*NLRC3*), Toll-like receptors 4 (*TLR4*), Nuclear factor kappa B (*NF-KB*), Myeloid-Differentiation-primary response gene 88 (MYD88), Mitogen-Activated Protein Kinase-1 (*MAPK1*), Interleukin 1 Alpha (*IL1A*), Interleukin 1 Beta (*IL1B*), Tumor necrosis factor Alpha (*TNFA*), Tumor necrosis factor Beta (*TNFB*), Interleukin 2 (*IL2*), Interleukin 6 (*IL6*), Signal Transducer and Activator of Transcription 3 (*STAT3*), TIR (Toll/Interleukin-1 Receptor) domain-containing adaptor protein inducing interferon beta (*TRIF*), Interferon Regulatory Factor 3 (*IRF3*), Interferon gamma (*IFNG*), TNF Receptor-associated Factor 3 (*TRAF3*), Interferon Regulatory Factor 5 (*IRF5*), C-C motif chemokine ligand 5 (*CCL5*), Interleukin 8 (*IL8*), Chemokine (C-X-C motif) ligand 16 (*CXCL16*), Heme Oxygenase-1 (*HO1*), Interleukin 10 (*IL10*), Transcription factor JunD (*JUND*) and Conserved Helix-Loop-Helix-Ubiquitous Kinase (*CHUK*) or IKKA relative to the geometrical mean of the references genes (Glyceraldehyde 3-Phosphate Dehydrogenase (*GAPDH*) and Tyrosine 3-monoxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide (*YWHAZ*)).

| | **Diet** | | | | **Time (Days)** | | | | **Effect** [1] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **CON** [2] | **WSS5** [3] | **WSS10** [4] | **SEM** [5] | **30** | **60** | **90** | **SEM** [5] | **Diet** | **Time** | **Diet x Time** |
| *NLRC3* | 0.074 | 0.063 | 0.063 | 0.010 | $0.056^{A}$ | $0.088^{B}$ | $0.056^{A}$ | 0.007 | NS | *** | NS |
| *TLR4* | 0.355 | 0.313 | 0.267 | 0.046 | $0.357^{A}$ | $0.226^{B}$ | $0.352^{A}$ | 0.033 | NS | *** | NS |
| *NF-KB* | 0.299 | 0.288 | 0.241 | 0.026 | $0.344^{A}$ | $0.268^{B}$ | $0.215^{B}$ | 0.022 | NS | *** | NS |
| *MYD88* | 0.742 | 0.751 | 0.554 | 0.114 | $1.119^{A}$ | $0.488^{B}$ | $0.439^{B}$ | 0.086 | NS | *** | NS |
| *MAPK1* | $0.437^{a}$ | $0.450^{a}$ | $0.350^{b}$ | 0.030 | $0.488^{A}$ | $0.400^{B}$ | $0.349^{B}$ | 0.029 | * | ** | NS |
| *IL1A* | 0.379 | 0.319 | 0.370 | 0.058 | $0.467^{A}$ | $0.370^{AB}$ | $0.233^{B}$ | 0.061 | NS | * | NS |
| *IL1B* | 0.093 | 0.158 | 0.109 | 0.028 | $0.038^{A}$ | $0.055^{A}$ | $0.267^{B}$ | 0.020 | NS | *** | NS |
| *TNFA* | 0.450 | 0.421 | 0.400 | 0.075 | $0.744^{A}$ | $0.290^{B}$ | $0.238^{B}$ | 0.058 | NS | ** | NS |
| *TNFB* | 0.008 | 0.006 | 0.006 | 0.001 | $0.006^{A}$ | $0.009^{B}$ | $0.005^{A}$ | 0.001 | NS | * | NS |
| *IL2* | 0.002 | 0.004 | 0.004 | 0.001 | $0.003^{AB}$ | $0.005^{A}$ | $0.002^{B}$ | 0.001 | NS | * | NS |
| *IL6* | $0.0010^{a}$ | $0.0008^{ab}$ | $0.0006^{b}$ | 0.0001 | $0.0007^{AB}$ | $0.0010^{A}$ | $0.0006^{B}$ | 0.0001 | * | * | NS |
| *STAT3* | 0.352 | 0.327 | 0.278 | 0.031 | $0.472^{A}$ | $0.245^{B}$ | $0.240^{B}$ | 0.026 | NS | *** | NS |
| *TRIF* | $0.008^{a}$ | $0.007^{ab}$ | $0.005^{b}$ | 0.001 | $0.005^{A}$ | $0.009^{B}$ | $0.006^{A}$ | 0.001 | * | * | NS |
| *IRF3* | 0.090 | 0.083 | 0.071 | 0.008 | $0.103^{A}$ | $0.066^{B}$ | $0.075^{B}$ | 0.007 | NS | *** | NS |
| *IFNG* | $0.029^{a}$ | $0.011^{b}$ | $0.014^{b}$ | 0.006 | 0.017 | 0.017 | 0.020 | 0.004 | * | NS | NS |
| *TRAF3* | $0.048^{a}$ | $0.034^{b}$ | $0.028^{b}$ | 0.004 | 0.035 | 0.040 | 0.034 | 0.004 | * | NS | NS |
| *IRF5* | 0.264 | 0.266 | 0.221 | 0.021 | $0.172^{A}$ | $0.292^{B}$ | $0.287^{B}$ | 0.023 | NS | ** | NS |
| *CCL5* | 0.324 | 0.268 | 0.221 | 0.068 | $0.286^{A}$ | $0.329^{A}$ | $0.198^{B}$ | 0.045 | NS | ** | NS |
| *IL8* | 0.685 | 0.481 | 0.450 | 0.094 | 0.593 | 0.423 | 0.599 | 0.103 | NS | NS | NS |
| *CXCL16* | 0.038 | 0.043 | 0.041 | 0.005 | $0.030^{A}$ | $0.033^{A}$ | $0.059^{B}$ | 0.004 | NS | *** | NS |
| *HO1* | 0.117 | 0.121 | 0.089 | 0.019 | $0.050^{A}$ | $0.128^{B}$ | $0.142^{B}$ | 0.014 | NS | *** | NS |
| *IL10* | 0.039 | 0.034 | 0.030 | 0.006 | $0.023^{A}$ | $0.024^{A}$ | $0.056^{B}$ | 0.005 | NS | *** | NS |
| *JUND* | $0.162^{a}$ | $0.134^{ab}$ | $0.094^{b}$ | 0.017 | 0.116 | 0.165 | 0.110 | 0.016 | * | NS | NS |
| *CHUK* | 0.050 | 0.050 | 0.056 | 0.003 | 0.057 | 0.046 | 0.052 | 0.002 | NS | NS | NS |

Means with different superscripts with small letters (a, b) between the three dietary treatments (CON, WSS5, WSS10) and with capital letters (A, B) between the three sampling time (30, 60, 90) differ significantly ($p < 0.05$). [1] Effect: The dietary treatment (Diet), the sampling time (Time) and the interaction between them (Diet × Time) effects were analysed by ANOVA using a general linear model (GLM) for repeated measures. Post hoc analysis was performed using Duncan's multiple range test. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, NS: not significant [2] CON: Control. [3] WSS5: Whole sesame seeds at 5%. [4] WSS10: Whole sesame seeds at 10%. [5] SEM: Standard error of the mean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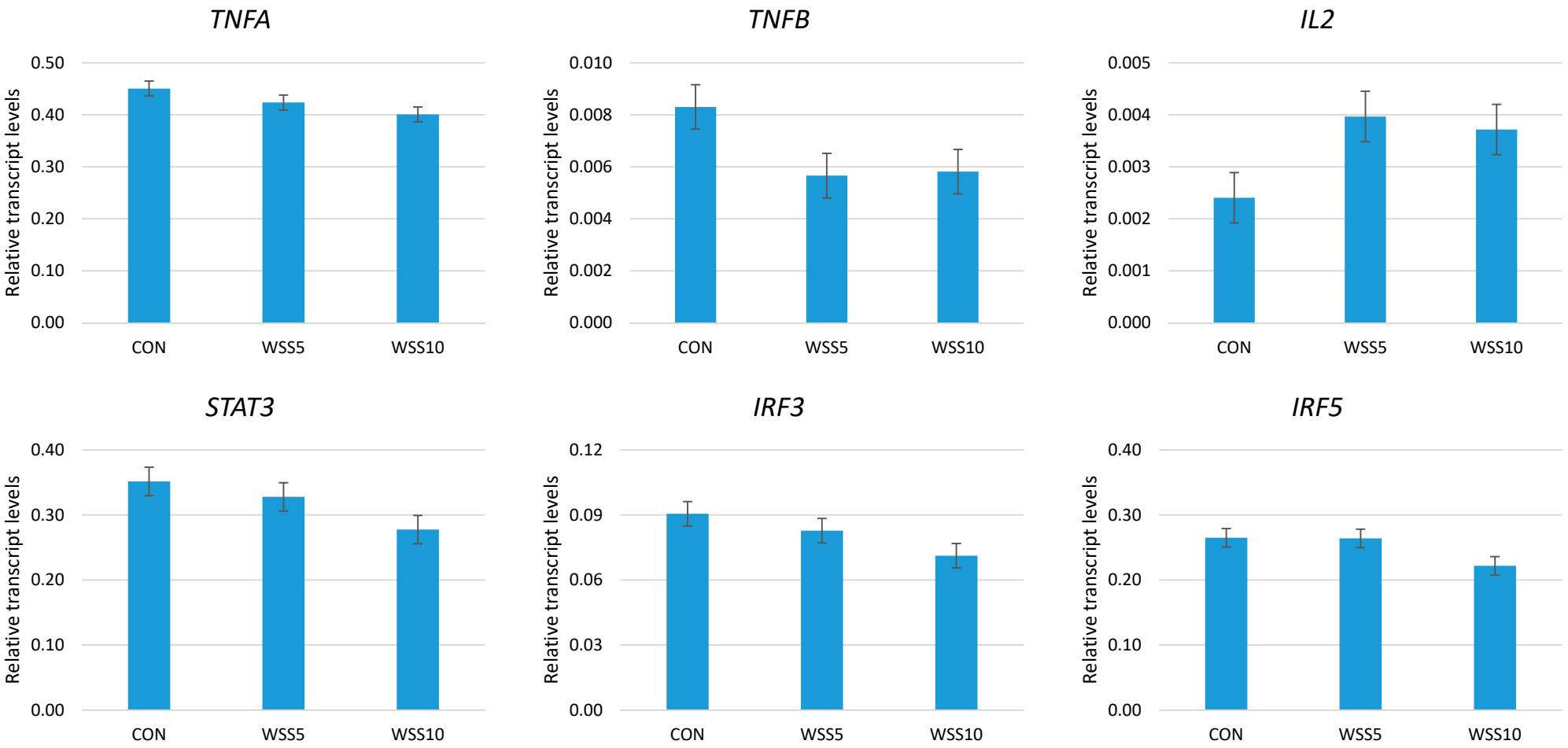
0.06
0.04
0.02
0.00
CON
WSS5
WSS10
TLR4
Relative transcript levels
0.40
0.30
0.20
0.10
0.00
CON
WSS5
WSS10
NF-KB
Relative transcript levels
0.40
0.30
0.20
0.10
0.00
CON
WSS5
WSS10
MYD88
Relative transcript levels
1.00
0.80
0.60
0.40
0.20
0.00
CON
WSS5
WSS10
IL1A
Relative transcript levels
0.40
0.30
0.20
0.10
0.00
CON
WSS5
WSS10
IL1B
Relative transcript levels
0.20
0.15
0.10
0.05
0.00
CON
WSS5
WSS10


TNFA
Relative transcript levels
0.50
0.40
0.30
0.20
0.10
0.00
CON
WSS5
WSS10
TNFB
Relative transcript levels
0.010
0.008
0.006
0.004
0.002
0.000
CON
WSS5
WSS10
IL2
Relative transcript levels
0.005
0.004
0.003
0.002
0.001
0.000
CON
WSS5
WSS10
STAT3
Relative transcript levels
0.40
0.30
0.20
0.10
0.00
CON
WSS5
WSS10
IRF3
Relative transcript levels
0.12
0.09
0.06
0.03
0.00
CON
WSS5
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IRF5
Relative transcript levels
0.40
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0.20
0.10
0.00
CON
WSS5
WSS10

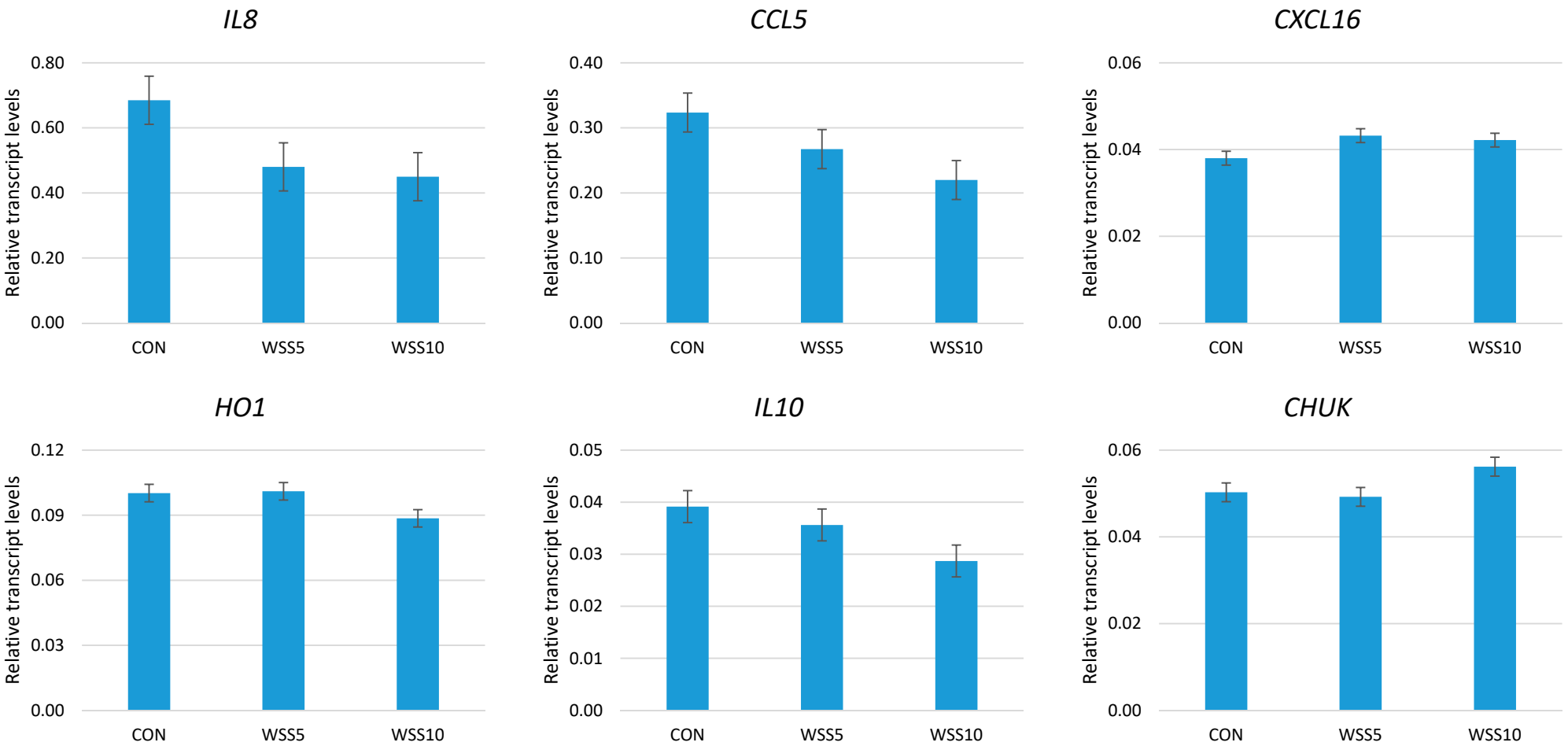


**Figure S1.** The Transcript abundance of several genes in the neutrophils of goats. Bars represent means ± SEM of each (n = 8) of the three dietary treatments; CON: control, basal diet; WSS5: basal diet + 5% whole sesame seed; WSS10: basal diet + 10% whole sesame seed in goats. The analysis of variance (ANOVA) using a general linear model (GLM) for repeated measures revealed that for these genes there was not significant difference between the three dietary treatments ($p > 0.05$).