|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gene** | **Forward Primer (5’ to 3’)** | **Reverse Primer (5’ to 3’)** | **Amplicon length (bp)** | **Annealing temp (°C)** |
| *IL10* | GGCTACGGCGCTGTCATCGATT | GCATTCTTCACCTGCTCCACGG | 70 | 64 |
| *IL6* | GCAGCAAAGAGGCACTGGCAGAA | CCAGGCAAGTCTCCTCATTGAATCC | 99 | 68 |
| *TREM1* | AACTGTGACCCAAGCTCCACCCA | GTTGAACACCGGAACCCTGATGAT | 106 | 64 |
| *CD64* | TGGTGCGAGGCTGCCACAGA | AACTGGAGGCCAAGCACTTGAAGC | 80 | 67 |
| *MYD88* | AGCATTGAGGAGGATTGCCA | GGCCACCTGTAAAGGCTTCT | 75 | 63 |
| *MMP9* | TTCAGGGAGACGCCCATTTC | AACCGAGTTGGAACCACGAC | 73 | 60 |
| *FASL* | ATAGGCCACCCCAGTCCACCC | TGGACTTGCCTGTTAAATGGGCCAC | 70 | 67 |
| *S100A8* | TATCAGGAAAAAGGGTGCAGAC | TGCCACGCCCATCTTTATCA | 109 | 62 |
| *S100A9* | CGCGGTACTCTTTCGAGCA | GCCCCAGCTTCACAGAGTAT | 107 | 63 |
| *TLR4* | GCCCTGCGTGGAGGTGGTTCC | GAGAAGGGGAGGTTGTCGGGGAT | 84 | 66 |
| *OSM* | CGCTGCTCAGTCTGGTCCTT | CGCGGTACTCTTTCGAGCA | 84 | 63 |
| *RPS18* | TCTTCAGTCGCTCCAGGTCT | TGAGGATGAGGTGGAACGTG | 167 | 60 |
| *HPRT1* | TGACACTGGCAAAACAATGCA | GGTCCTTTTCACCAGCAAGCT | 94 | 60 |
| *YWHAZ* | ACTTTTGGTACATTGTGGCTTCAA | CCGCCAGGACAAACCAGTAT | 94 | 60 |

**Table S1: Primers used for qPCR.**

**Table S2: Proportion of samples with detectable protein concentrations grouped based on reaction trigger.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Marker** | **T0** | | | **T1** | | | **T3** | | |
|  | **Food** | **Other** | **p-value** | **Food** | **Other** | **p-value** | **Food** | **Other** | **p-value** |
| **IL-6** | 6/23 (26.1%) | 24/46 (52.2%) | **0.045** | 11/23 (47.8%) | 29/45 (64.4%) | 0.205 | 8/20 (40%) | 18/45 (40%) | 1.000 |
| **IL-10** | 2/23 (8.7%) | 11/46 (23.9%) | 0.194 | 5/23 (21.7%) | 16/45 (35.6%) | 0.281 | 6/20 (30%) | 11/45 (24.4%) | 0.761 |
| **S100A9** | 5/18 (27.8%) | 16/35 (45.7%) | 0.247 | 5/18 (27.8%) | 18/35 (51.4%) | 0.145 | 3/13 (23.1%) | 15/30 (50%) | 0.178 |
| **FasL** | 13/23 (56.5%) | 29/46 (66.7%) | 0.612 | 16/23 (69.6%) | 28/45 (62.2%) | 0.602 | 11/20 (55%) | 28/45 (62.2%) | 0.596 |
| **sTREM1** | 19/20 (95%) | 42/42 (100%) | 0.323 | 20/20 (100%) | 42/42 (100%) |  | 17/17 (100%) | 42/42 (100%) |  |

p-values<0.05 are bolded. However, no comparisons remained significant after application of Bonferroni-Holm step-down correction for multiple comparisons.



**A**

**B**

**Figure S1: Protein concentrations during anaphylaxis grouped by reaction trigger.**

**A)** MMP9 and **B)** soluble TREM1 concentrations in serum from anaphylaxis patients at the time of admission to the emergency department (T0), and again after one (T1) and three (T3) hours. Differences in protein concentrations between reaction triggers (Food n=22, Other (including unknown) n=45) were investigated. There were no differences in MMP9 concentrations between trigger groups at any time point (T0 p=0.059, T1 p=0.063, T3 p=0.573). Soluble TREM1 concentrations were 1.42-fold (95% CI: 1.04, 1.95) lower in food-triggered anaphylaxis at T0 (p<0.001) and 1.41-fold (95% CI: 1.08,1.85) lower at T1 (p=0.013) than other-triggered anaphylaxis. There were no differences in soluble TREM1 concentrations based on reaction trigger at T3 (p=0.331). Boxplots identify the median, upper and lower quartiles, and the range. Dotted lines indicate the median concentration of healthy controls (n = 20): 304.1 ng/mL MMP9; and 182.3 pg/mL TREM1.



**Figure S2: Gene expression during anaphylaxis grouped by reaction trigger.**

Quantitative PCR was performed on mRNA extracted from peripheral blood leukocytes of anaphylaxis patients at the time of enrolment in the emergency department (T0), and again after one (T1) and three (T3) hours. At each timepoint, data is split based on reaction trigger (Food n=15, Other n=11). Gene expression data are presented as calibrated normalised relative quantities (CNRQ). Boxplots identify the median, upper and lower quartiles, and the range. Dotted lines indicate the median CNRQ of healthy controls (n=20). The results of the statistical analyses are summarised in Table 2.

**Table S3: Results of testing for differences in mRNA expression between reaction triggers (food vs other).**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **T0** | **T1** | **T3** |
| *IL6* | 0.102 | **0.036** | 0.244 |
| *IL10* | 0.815 | 0.420 | 0.618 |
| *OSM* | 0.265 | 0.852 | 0.852 |
| *S100A8* | 0.065 | **0.016** | 0.267 |
| *S100A9* | 0.102 | **0.021** | 0.782 |
| *MMP9* | 0.204 | 0.312 | 0.868 |
| *FASL* | 0.071 | **0.024** | 0.506 |
| *TLR4* | 0.979 | 0.697 | 0.437 |
| *MYD88* | 0.938 | 0.897 | 0.070 |
| *TREM1* | 0.484 | 0.551 | 0.166 |
| *CD64* | 0.897 | 0.938 | 0.471 |

p-values<0.05 are bolded. However, no comparisons remained significant after application of Bonferroni-Holm step-down correction for multiple comparisons.