

Global Gene Expression Of The Local Acute Phase Response To *E. coli* Infection In The Bovine Udder

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Experimental *E. coli* mastitis in dairy cows induces up-regulation of genes involved in the induction and regulation of the APR, and down-regulation of genes involved in the fatty acid metabolism



16 heifers were infected intra mammary with *E. coli* (k2bh2)
(20-40 CFU/ml)



Biopsies were taken from a control quarter and an infected quarter at T = 24h p.i.

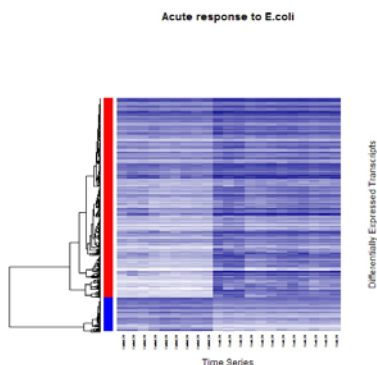
RNA extraction from the biopsy and measured on the Affymetrix[®] bovine array



Differential expressed genes were determined using Limma version 2.10.0
A hyperGeometric gene set analysis was performed based on the annotated genes for the up- and down-regulated transcripts using GOstats version 2.12.0



Contrast infected udder quarter (T = 24 h p.i.) versus control quarter



Bonferroni P < 0.001

426 up-regulated differentially expressed transcripts representing 299 genes

Inflammatory response (GO:0006954)

Chemotaxis (GO:0006935)

Acute immune response (GO:0002526)

Toll-like receptor signalling pathway (KEGG4620)

73 down-regulated differentially expressed transcripts representing 39 genes

Fatty acid biosynthetic process (GO:0006633)

Cellular lipid metabolic process (GO:0044255)

Fatty acid biosynthesis (KEGG00061)