Arachidonic acid cascade genes up-regulated in dried dormant cysts of brine shrimp, *Artemia franciscana*.

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Dormant cysts of brine shrimp, *Artemia*, can enter the state of anhydrobiosis by desiccation. In this state, dried cysts reveal no measurable metabolism. Anti-desiccation molecules (i.e. small heat shock proteins, LEA proteins and trehalose) have been reported to be stored in diapause-destined embryos during cyst formation. However, we presumed that newly up-regulated genes also play important roles to protect embryos during dehydration process and planned comprehensive search for the newly up-regulated genes.

We compared mRNAs in dried cysts with those in cold-treated cysts that had already terminated diapause with no experience of desiccation. Using GeneFishing method, 177 transcripts up-regulated in dried cysts were detected. We found arachidonic acid cascade genes, prostaglandin E_2 reductase and leukotriene A_4 hydrolase, among the up-regulated genes. Furthermore, preliminary analysis indicated existence of prostanoids in dried cysts. These findings suggest that eicosanoids work in desiccated *Artemia* cysts as stress mediators in similar manner reported from mammalian tissues under various stresses.