Data Article

Fibroblast and keratinocyte gene expression following exposure to extracts of neem plant (*Azadirachta indica*)

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ARTICLE INFO

ABSTRACT

This data article provides gene expression profiles, determined by using real-time PCR, of fibroblasts and keratinocytes treated with 0.01% and 0.001% extracts of neem plant (Azadirachta indica), local name "Kohomba" in Sri Lanka, harvested in Sri Lanka. For fibroblasts, the dataset includes expression profiles for genes encoding hyaluronan synthase 1 (HAS1), hyaluronan synthase 2 (HAS2), hyaluronidase-1 (HYAL1), hyaluronidase-2 (HYAL2), versican, aggrecan, CD44, collagen, type I, alpha 1 (COL1A1), collagen, type III, alpha 1 (COL3A1), collagen, type VII, alpha 1 (COL7A1), matrix metalloproteinase 1 (MMP1), acid ceramidase, basic fibroblast growth factor (bFGF), fibroblast growth factor-7 (FGF7), vascular endothelial growth factor (VEGF), interleukin-1 alpha (IL-1α), cyclooxygenase-2 (cox2), transforming growth factor beta (TGF-β), and aquaporin 3 (AQP3). For keratinocytes, the expression profiles are for genes encoding HAS1, HAS2, HYAL1, HYAL2, versican, CD44, IL-1α, cox2, TGF-β, AQP3, Laminin5, collagen, type XVII, alpha 1 (COL17A1), integrin alpha-6 (ITGA6), ceramide synthase 3 (CERS3),

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elongation of very long chain fatty acids protein 1 (ELOVL1), elongation of very long chain fatty acids protein 4 (ELOVL4), filaggrin (FLG), transglutaminase 1 (TGM1), and keratin 1 (KRT1). The expression profiles are provided as bar graphs.

Specifications Table

Subject area	*Biology*
More specific subject area	*Cell biology*
Type of data	*Graph*
How data was acquired	*Quantitative RT-PCR (LightCycler 96 system, Roche)*
Data format	*Analyzed*
Experimental factors	*Isolation of total cellular RNA, cDNA amplification, PCR analysis*
Experimental features	*Analysis of gene expression by quantitative RT-PCR*
Data source location	*Negombo, Sri Lanka*
Data accessibility	*Data are available within this article*

Value of the data

- Data showing changes in gene expression levels in response to neem extract exposure are valuable for estimating effects of the extract on fibroblasts and keratinocytes.
- The data presented in this article showing that neem extract up- or down-regulates the expression of genes involved in epidermal and dermal cells could be important for investigations in pharmacology and cosmetics.
- The present data can be referenced by investigations into chemicals and natural medicines for the epidermal and dermal tissues.

1. Data

This data article contains bar graphs showing gene expression levels in fibroblasts and keratinocytes in response to exposure to 0.01% and 0.001% neem plant (Azadirachta indica) extract, harvested in Negombo, Sri Lanka. For fibroblasts, the dataset includes expression profiles for genes encoding HAS1, HAS2, HYAL1, HYAL2, versican, aggrecan, CD44, COL1A1, COL3A1, COL7A1, MMP1, acid ceramidase, bFGF, FGF7, VEGF, IL-1α, cox2, TGF-β, and AQP3 (Fig. 1). For keratinocytes, the expression profiles are for genes encoding HAS1, HAS2, HYAL1, HYAL2, versican, aggrecan, CD44, IL-1α, cox2, TGF-β, AQP3, Laminin5, COL17A1, ITGA6, CERS3, ELOVL1, ELOVL4, FLG, TGM1, and KRT1 (Fig. 2). The data represent the mean ± SE values from triplicate independent experiments (*$P < 0.05$, **$P < 0.001$ and ***$P < 0.001$ vs. 0 time).

2. Experimental design, materials and methods

2.1. Materials

Neem plants (Azadirachta indica), local name "Kohomba" were harvested from a medicinal garden at the Institute of Traditional Plants in Sri Lanka (Negombo, Sri Lanka). The heat-treated plant leaves were extracted with 1,3-butylene glycol.