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Dietary fish oil supplementation enhances expression of genes involved in cornified cell envelope formation in rat skin

Peiru Wang^{1,4}, Min Sun¹, Jianwei Ren², Muhammad Nadeem Aslam³, Yuting Xu⁴, Gary J. Fisher¹, John J Voorhees¹, Xiuli Wang^{4,*}, Yong Li^{1,*}

¹Department of Dermatology, University of Michigan; ²Department of Family Medicine, University of Michigan; ³Department of Pathology, University of Michigan; ⁴Department of Photomedicine, Shanghai Dermatology Hospital, China.

Running title: Fish oil induces cornified cell envelope genes

* Correspondence to

Yong Li, PhD

University of Michigan – Department of Dermatology

1301 E Catherine St. 6447 Med Sci I

Ann Arbor, MI 48109-5609

Tel: 734-763-1469

Fax: 734-647-0076

Email: liyong@med.umich.edu

Or Xiuli Wang, M.D.

xlwang2001@aliyun.com

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Dietary unsaturated fatty acids (FAs) include n-6 and n-3 fatty acids. n-6 FAs have a double bond that is six carbons from the terminal carboxyl group. n-3 FAs have a double bond that is 3 carbons from the carboxyl moiety. The typical diet in Western countries contains much more n-6 FAs, such as arachidonic acid (AA, 20:4 n-6), compared to n-3 FAs, such as eicosapentaenoic acid (EPA, 20:5 n-3) and docosahexaenoic acid (DHA, 22:6 n-3)(Black and Rhodes, 2016). The vast majority of n-3 and 6 FAs are incorporated into phospholipids, which form cellular membranes. A small fraction of membrane-bound FAs can be enzymatically converted to free FAs. Free AA, EPA and DHA are immediate precursors of hundreds of locally acting hormone-like signaling lipids, termed eicosanoids, such as hydroxyeicosatetraenoic acids (HETEs) and

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