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Wnt gene family members and their expression profiling in *Litopenaeus vannamei*

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1 **Wnt Gene Family Members and Their Expression Profiling in**
2 ***Litopenaeus vannamei***

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21 **Abstract**

22 The Wnt gene family encodes secreted glycoproteins involved in a wide variety of
23 biological processes, including embryo development, cell proliferation and differentiation,
24 and tissue regeneration. The Wnt pathway exists in all metazoan animals, however, the
25 relevant research is rare in crustaceans. Here we described 12 Wnt genes representing 12 Wnt
26 gene subfamilies in the Pacific white shrimp, *Litopenaeus vannamei*. Based on homolog
27 annotations and phylogenetic analyses, we named these 12 Wnt genes as *LvWnt1*, *LvWnt2*,
28 *LvWnt4-11*, *LvWnt16*, and *LvWntA*. All the corresponding LvWnt proteins shared a conserved
29 Wnt1 domain and 22 conserved cysteine residues. *LvWnt1* and *LvWnt6* were adjacent in a
30 scaffold in the shrimp genome. Furthermore, we performed expression analyses of LvWnt
31 genes at different developmental stages, during the molting process, in different tissues and
32 after different pathogenic infection. We showed that each LvWnt gene had a unique
33 expression pattern at different developmental stages but only a few of them expressed in adult

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