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Rapid communication: Complete nucleotide sequence of the chicken *prolactin* gene

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Name of Sequence. Chicken prolactin (*PRL*) gene.

Genus and Species. Gallus gallus (chicken).

Origin of Clones. Genomic DNA from Xing Hua Chinese native chickens was used as a template. Primers were designed based on exon/intron junctions of the genomic turkey *PRL* gene sequence (Kurima et al., 1995). Polymerase chain reaction (PCR) amplifications of the PRL gene were performed by using the following oligonucleotides (all based on cDNA sequence, GenBank accession no. E02259): forward primer PRLexon1F 5′-CAC ACA GAA TCC CTA CCA TG-3′ and reverse primer PRLexon2R 5′-ACT TGG CAG TTG ACT GAT CC-3′; forward primer PRLexon2F 5′-GAC CAA GGA AGG AGT GAC CT-3′ and reverse primer PRLexon3R 5′-CGA CCC TGA GCA TAA CGT TC-3′; forward primer PRLexon3F 5′-GAA CGT TAT GCT CAG GGT CG-3′ and reverse primer PRLexon4R 5′-CTT CAG AGG CCA GAT GGA TC-3′; forward primer PRL2F 5′-AAG AGG CTT CTA GAA GGA ATG G-3′ and reverse primer PRL2R 5′-TTG CAG CCA GAA TTC ACA CAA-3′. The PCR was performed with 100 ng of genomic DNA as template in a total volume of 50 μL of reaction mix containing 10× PCR buffer with 15 m*M* $MgCl_2$ (GIBCO BRL, Tsuen Wan, Hong Kong), 0.2 m*M* dNTP, 20 pmol each primer, and 1.5 U of *Taq* DNA polymerase (GIBCO BRL). The PCR protocol was as follows: after denaturation at 95°C for 4 min, 30 amplification cycles comprising denaturation at 94°C for 30 s, annealing at 58°C for 1 min, and extension at 72°C for 2 min 30 s, followed by an extended elongation at 72°C for 10 min. Purified PCR products (BIO 101, 1070 Joshua Way, Vista, CA) were cloned into pMosBlue vector (Amersham, Arlington Heights, IL). The 5′ and 3′ flanking regions were found by using Universal GenomeWalker kit (CLONTECH, 1020 East Meadow Circle, Palo Alto, CA). Primer PRLup2 5′-ACT GAA GTA AGA CAT TAT CCT CCC CC-3′ and primer PRLup6 5′-ATC CAC CAG ACA CTT TCC TGT GTT AC-3′ were used for amplification of the 5′ flanking region; primer PRLdown1 5′-TAC CTG TGG GCT GCA TTA CTC ACT GAA A-3′ was used for amplification of the 3′ flanking region. The PCR products were cloned into pBluescript SK (Stratagene, La Jolla, CA). The seven plasmid clones were sequenced using an ABI PRISM 310 Genetic Analyzer (Perkin Elmer, Foster City, CA 94404).

Comparison with Related Sequences. The *Gallus Gallus* (chicken) *PRL* genomic sequence shows 91% homology with the *Meleagris gallopavo* (turkey) *PRL* partial genomic sequence found in GenBank (GenBank accession no. UO5952). The 5′ flanking sequence of *Gallus Gallus* shows 90% homology with the published partial turkey *PRL* 5′ flanking sequence (GenBank accession no. UO5953), and the 3′ flanking sequence also shows 90% homology with the published partial turkey *PRL* 3′ flanking sequence (GenBank accession no. UO5957).

Sequence Data. The Chinese native (Xing Hua) chicken *PRL* genomic sequence reported here is 6,163 bp long. Also reported is the 5′ flanking sequence of 2,178 bp in length and the 3′ flanking sequence 1,194 bp in length. The first 2,178 bp is the 5′ flanking region, following with a 53-bp 5′ UTR. The five exons are 28 bp, 182 bp, 108 bp, 180 bp, and 192 bp long. The four introns are 1,520 bp, 408 bp, 1,348 bp, and 1,909 bp long. Following 236 bp is the 3′ UTR, and the remaining 1,194 bp constitute the 3′ flanking region.

Genbank Accession Number. AF288765 (chicken *PRL* genomic sequence, 5′ flanking sequence and 3′ flanking sequence).

Comments. This is the first report of the complete genomic sequence of the avian (Chinese native chicken) *PRL* gene. Sequence analysis found that the arrangement of the exon/intron junctions of the chicken *PRL* gene are similar to that of the turkey, and all the exon/intron junctions conform to the GT-AT rule (Breathnach and Chambon, 1981).

Literature Cited

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Key Words: *Gallus gallus*, Genetic Analysis, China, DNA, Prolactin

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