cDNA sequences of chicken nucleolin/C23 and NO38/B23, two major nucleolar proteins

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Nucleolin and NO38 are abundant nucleolar proteins implicated in the transcription and processing of ribosomal RNA, and in the packaging and transport of ribosomal proteins or preribosomal particles (for references see 1–5). cDNAs encoding the chicken homologs of these proteins were cloned (by immunoscreening; 6) from λgt11 cDNA expression libraries prepared from poly(A)$^+$ RNA of 10 day old chicken embryos (7). DNA from recombinant phages was prepared using lambdasorb (Promega), and preliminary sequence determination was carried out directly on λ phages, using Klenow polymerase and primers obtained from Biolabs. In the case of NO38, the complete coding information was contained within a single 1.1 kb *Eco*RI fragment, which was subcloned into the *Eco*RI site of the pGEM-3Zf(−) vector (Promega). The nucleolin insert contained four internal *Eco*RI sites, and, therefore, a 2.5 kb fragment was excised from the recombinant λgt11 phage using *Dra*II. The resulting fragment was filled up with Klenow polymerase and blunt-end ligated into the *Sma*I site of pGEM-3Zf (−). Nested deletion templates for sequence analysis were then generated by exonuclease III digestion (8), using *Xba*I and *Sph*I for plasmid linearization. Sequencing of double-stranded plasmid DNA (9) was carried out (in both orientations) by the dideoxy method (10) using T7 polymerase (Sequenase, United States Biochemicals).

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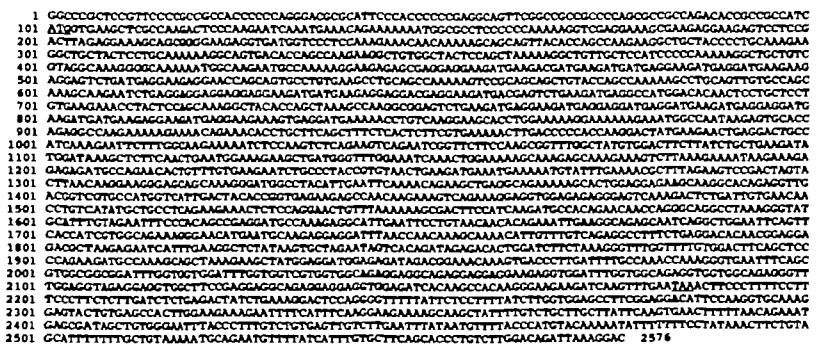

Figure 1. cDNA sequence of chicken nucleolin The cDNA sequence shown contains 2576 nucleotides, the translation start (ATG) and stop (TAA) codons are underlined These results complete a preliminary report of a partial (C-terminal) sequence for chicken nucleolin (5), and they correct two mistakes in that sequence, namely a GC for CG substitution at positions 1355/56 (resulting in codon 419 coding for Ala instead of Arg), and an A for C substitution at position 1659 (resulting in codon 520 coding for Asn instead of Thr).

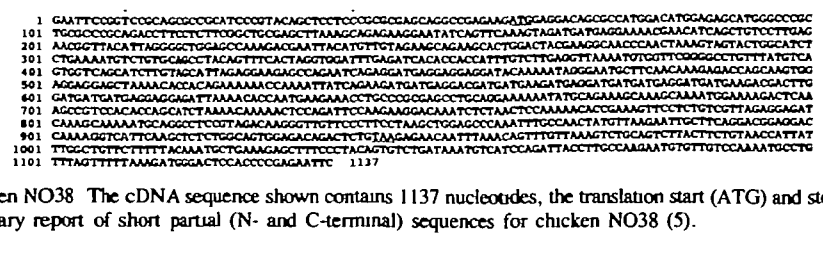

Figure 2. cDNA sequence of chicken NO38 The cDNA sequence shown contains 1137 nucleotides, the translation start (ATG) and stop (TAA) codons are underlined These results complete a preliminary report of short partial (N- and C-terminal) sequences for chicken NO38 (5).