Human N-cadherin: nucleotide and deduced amino acid sequence

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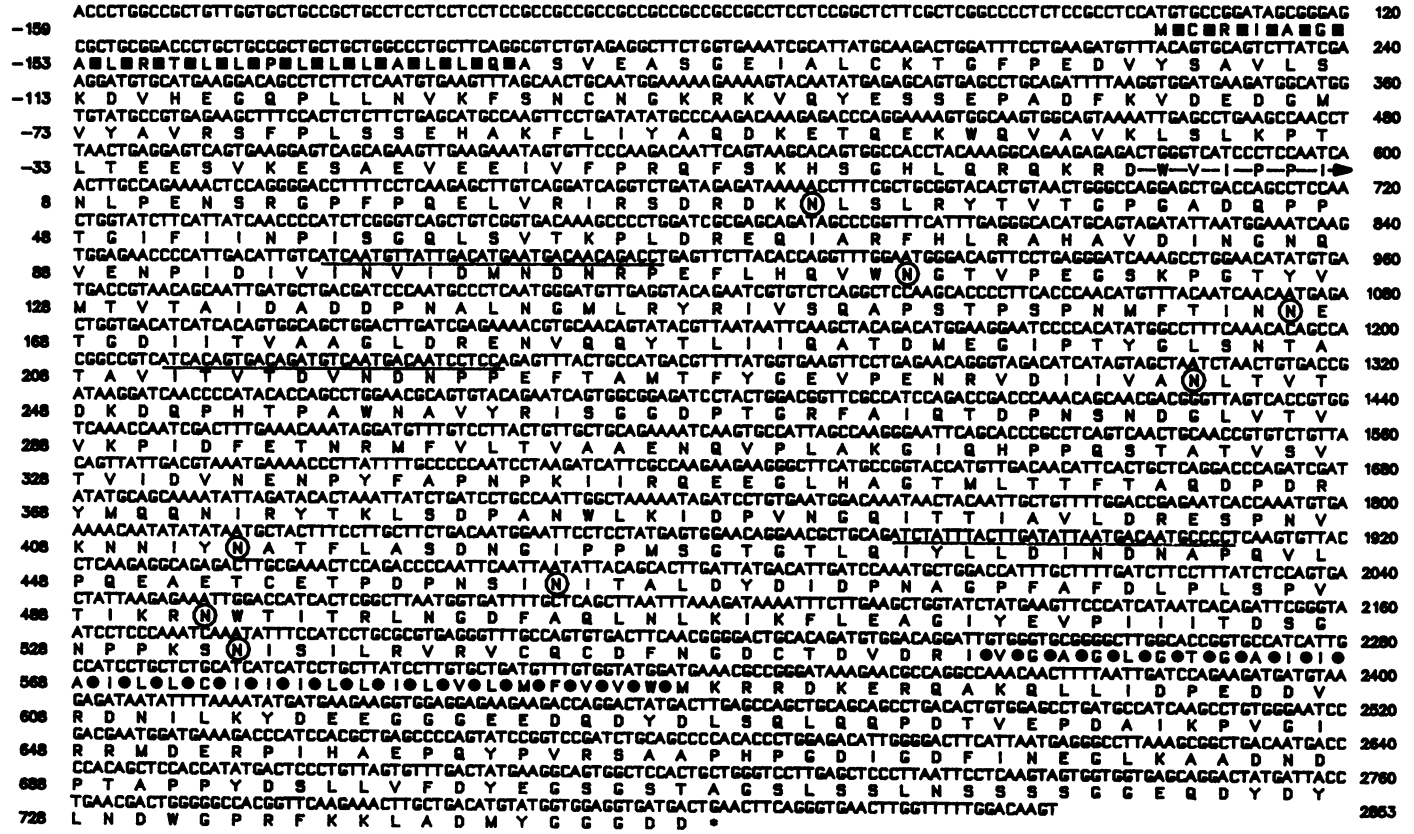
Submitted August 14, 1990

EMBL accession no. X54315

N-cadherin, a member of the cadherin gene family originally detected in nervous tissue, is a transmembrane protein which mediates calcium-dependent, homophilic, cell-cell adhesion (1). We report here the entire protein coding and additional 5′ and 3′ untranslated nucleotide sequences of human N-cadherin as well as the deduced amino acid sequence. An N-cadherin probe was generated by PCR amplification of human brain polyA+ RNA using oligonucleotide primers designed from the chicken N-cadherin sequence (2). This probe was used to screen a Kelly neuroblastoma library (Clontech, Palo Alto, CA) from which fifteen independent clones, one being full length, were obtained. The reported sequence was determined on both strands by partial sequencing of multiple cDNAs and was defined as N-cadherin by comparison to N-cadherin isolated from chicken and mouse (3). Nucleotide sequence identities between human/mouse and human/chicken are 96% and 85%, respectively. Human and mouse sequences lack two regions of five and one amino acid each, which are present in chicken. The five amino acid deletion exists within the putative signal sequence between amino acid positions −146 and −147. The single amino acid deletion is present within the extracellular domain between amino acid positions 373 and 374. The signal sequence (solid squares), membrane-spanning region (solid circles), cadherin extracellular repeats (overlines), amino terminus of the mature polypeptide (arrow) and potential N-glycosylation sites (circles) are indicated. The nucleotide and amino acid positions are numbered on the right and left, respectively.

REFERENCES

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