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(54) Title: METHOD FOR INDEXING AND DETERMINING THE RELATIVE CONCENTRATION OF EXPRESSED MESSENGER RNAs

(57) Abstract

An improved method for the simultaneous sequence–specific identification of mRNAs in a mRNA population allows the visualization of nearly every mRNA expressed by a tissue as a distinct band on a gel whose intensity corresponds roughly to the concentration of the mRNA. In general, the method comprises the formation of cDNA using anchor primers to fix a 3'–endpoint, producing cloned inserts from the cDNA in a vector containing a bacteriophage–specific promoter for subsequent RNA synthesis, generating linearized fragments of the cloned inserts, preparing cRNA, transcribing cDNA from the cRNA and performing two sequence specific PCR amplifications of the cDNA. In preferred embodiments, the method comprises comparing the length and at least part of the nucleotide sequence of the PCR products to expected values determined from a database of nucleotide sequences. The method can identify changes in expression of mRNA associated with the administration of drugs or with physiological or pathological conditions. Also provided are vectors and primers useful for the practice of the improved method.