METHOD OF GENERATING AND REPRESENTING GENE DIFFERENTIAL EXPRESSION PROFILES BY APPLYING FOURIER TRANSFORM

ABSTRACT

The present invention provides a method of generating a gene differential expression profile for a pair of conditions (T/N). In one aspect, the method comprises acquiring n sets (S) of gene expression profiles for the pair of conditions, wherein n >1, and each gene with each set of gene expression profile has two expression values, one for T and another for N; wherein each set of gene expression profiles contains m genes; and wherein m >1; arranging the n sets of gene expression profiles in a linear order, i.e., S1(T1N1)S2(T2N2)...Sn-1(Tn-1Nn-1)Sn(TnNn), so the gene expression values from one condition are alternatively interposed by the ones from another condition; and applying the Discrete Fourier Transform to the arranged gene expression values for each gene of the set of gene expression profiles; thereby generating the gene differential expression profile for the pair of condition. In an embodiment, the gene differential expression profile contains more than one gene; thereby candidate genes that are either overexperssed or underexpressed in either of the pair of conditions may be selected from the gene differential expression profile. In a further embodiment, the gene differential expression profile is comprised of overexpressed genes and underexpressed genes. In another aspect, the present invention provides a method of representing the gene differential expression profile by plotting the normalized amplitude versus absolute amplitude; thereby the gene differential expression profile is represented graphically.

FIG 1