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Cancer biomarkers and their relation to dysfunctional hierarchy of cellular proteins

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Cancer Biomarkers and Their Relation to Dysfunctional Hierarchy of Cellular Proteins. The mammalian cell has approximately 7000 proteins assembled from amino acids using specific information encoded in genes and their regulation is tightly controlled in normal cells. A normal cell becomes a cancer cell when a cascade of molecular events disrupts protein function. Dysregulated cell functions including uncontrolled cellular pathways, unregulated cell cycle and mitosis, and errors in protein expression result in over, less, or outright malfunction in the activities relating to protein synthesis. Proteins that function normally in healthy cells become biomarkers once their functions are distracted, and may result in cellular re-localization in cancer cells. Biological and clinical significance of some of these differentially regulated biomarkers was studied and analyzed in human solid tumor cancers. Further, these biomarkers may be shed from solid tumors and circulate in peripheral blood. Isolation of these shed biomarkers are valuable tools for diagnostic and therapeutic cancer applications.

Biography

Özge Alper, Ph.D. has over 25 years' experience in the field of cancer research including cancer diagnosis and cancer therapy. She is founder and President of Alper Biotech, a biotechnology company dedicated to developing and commercializing antibody-based products for cancer diagnosis and monitoring. Dr. Alper is recognized world-wide for establishing that the HER2 breast cancer protein is expressed in circulating form. She is also the first to isolate secreted HER2 and Filamin-A biomarkers from blood. Dr. Alper received her Ph.D. from Tokyo University, and completed her postdoctoral studies at the National Cancer Institute, National Institutes of Health.

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