

IPD Project Details

Project ID: IPD8488

Project Title: LC-MS analysis of human tumour cell lines

Description: Main aim of this study was to identify and characterize human hypothetical proteins. These are the protein sequences for which there is no experimental evidence at translation level and are functionally unknown. First part of the project deals with identification and characterization of hypothetical proteins using label-free lc-ms/ms approaches. Second part deals with providing functional clues to those identified proteins thus connecting the missing links in biological mechanisms.

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Sample Preparation: Three tumour cell lines HeLa, MCF7, BT474 were selected for the study. All cell lines were cultured in RPMI-1640 medium. Protein was extracted from the cell lines and were separated on 10% SDS-PAGE gel according to the Laemmli protocol.

Peptide Separation: The gels were run in triplicates for each cell line. One among the three lanes was selected from each gel and subjected to trypsin digestion followed by desalination. The resulting desalinated peptides were analysed using LC-MS/MS.

Protein Characterization: Raw files were imported into proteome discoverer software (version 1.4). The MS/MS spectra of the peptides were searched against human hypothetical protein data from NCBI database with the following criteria. 1. Precursor mass tolerance: 5ppm 2. Fragment mass tolerance 0.05 Da 3. Variable modification: Oxidation of methionine 4. Dynamic modification: Carbamidomethyl (C) 5. Enzyme specificity: Trypsin .with two missed cleavages The files generated were imported into proteome discoverer software and the peptides and proteins were identified.

Experiment Type: Gel-based experiment

Species: Data in species_details No Data

Tissue: Permanent cell line cell No Data

Cell Type: Cell culture No Data

Disease: Data in disease_details No Data

Instrument Details: Data in instrument_details Data in instrument_details

Protein Modifications: monohydroxylated residue, iodoacetamide derivatized residue

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