

## IPD Project Details

**Project ID:** IPD4029

**Project Title:** p38-MAPK recruits the proteolysis pathways in *Caenorhabditis elegans* during bacterial infection

**Description:** TiO<sub>2</sub> column chromatography, MALDI-ToF-MS, SUMOylation, Coimmunoprecipitation and LC-MS/MS

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**Sample Preparation:** 100 µg proteins from control and *S. Typhi* exposed lysates/column elutes were taken for in-solution digestion. Disulfide bonds were reduced using 20 µl of dithiothreitol (20 mM final concentration) for 1 h at 56 °C and free thiol groups were alkylated using 20 mM IAA at room temperature for 1 h in dark.

**Peptide Separation:** The urea concentration (if urea buffer was used during sample preparation) was diluted below 0.5 M using 100 mM ammonium bicarbonate and the proteins were digested overnight (14 - 16 h) using MS grade trypsin enzyme at a protein-to-enzyme ratio of 25:1 at 37 °C. Finally, the digested peptides were subjected to LC-MS/MS analysis, respectively.

**Protein Characterization:** Positive-ion mode of MALDI-MS analysis has been performed using AXIMA Performance MALDI-ToF-ToF mass spectrometer. Equal ratio of desalted samples were mixed with 2, 5-dihydroxybenzoic acid (2,5-DHB) (prepared with 0.1 % Trifluoroacetic acid in 50 % acetonitrile) along with 1 % phosphoric acid as an additive to improve the phosphopeptide ion signals (Kjellström and Jensen, 2004). The m/z values (700 – 3500 m/z range) of the each sample from MALDI-MS spectra were subjected to MS-Fit-Protein Prospector analysis (<http://prospector.ucsf.edu/prospector/cgi-bin/msform.cgi?form=msfitstandard>) (Prasath et al. 2019). The parameters set as follows: Taxonomy - *Caenorhabditis elegans*; Database - UniProt; Constant Modifications - Carbamidomethylation (C); Possible/variable modifications – Oxidation of Met, Acrylamide modified Cys, Phospho (STY); Peptide tolerance – 20 ppm. The resulting protein hits, along with the phosphorylation sites, were manually retrieved and tabulated. Meanwhile, experimental

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phosphorylation sites of the respective proteins were acquired from the UniProt database and tabulated. The MALDI-MS identified proteins were taken to “PHOSIDA” bioinformatics tool (<http://141.61.102.18/phosida/index.aspx>) to predict the possible phosphorylation sites (Gnad et al. 2007). The overlapping proteins between the datasets were identified using online venn diagram platform (Oliveros, 2007).

**Experiment Type:** Shotgun proteomics, Affinity purification coupled with mass spectrometry proteomics

**Species:** Data in species\_details No Data

**Tissue:** Data in tissue\_details No Data

**Cell Type:** Data in cell\_details No Data

**Disease:** Unknown No Data

**Instrument Details:** Data in instrument\_details Data in instrument\_details

**Protein Modifications:** iodoacetamide derivatized residue

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