

8th International Conference on

PROTEOMICS AND BIOINFORMATICS

May 22- 24, 2017 Osaka, Japan

Gel-free proteomic analysis of wheat shoots under iron nanoparticles exposure

Farhat Yasmeen

PMAS-Arid Agriculture University, Pakistan

Iron nanoparticles (Fe NPs) have stimulatory effects on the germination ratio and plant growth of wheat. To elucidate the effects of Fe NPs on shoot of NARC-11 wheat variety, a gel-free proteomic technique was used. The weights/lengths of seedling, shoot, and root of NARC-11 was increased on 5 ppm Fe NPs exposure. The number of proteins related to photosynthesis and protein metabolism was increased in NARC-11 wheat variety, treated with Fe NPs compared to untreated plants. Differentially changed proteins in NARC-11 were mainly related to photosynthesis. Out of photosynthesis related proteins, light reaction was enhanced in NARC-11 compared to untreated plants on Fe NPs exposure. The abundance of ribulose biphosphate carboxylase/oxygenase small chain was increased 3 fold by Fe NPs exposure compared to untreated plant. These results suggest that Fe NPs improve the growth of wheat seedling, which might be associated with the increase of protein abundance in photosynthesis in NARC-11 wheat variety.

Biography

Farhat Yasmeen has her expertise in proteomic evaluation of nanoparticles treated plants. These proteomic analyses have brought in-depth understanding about the nanoparticles on plants mechanisms. She has achieved this after years of experience in research and evaluation during her PhD duration. This approach is responsive to understand all stress response mechanism with different ways of focusing.

fyasmeen.1315@gmail.com