

WIU CENTENNIAL HONORS COLLEGE
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Abstract

Poster

Major: Biology

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Extraction of Total Proteins in the Leaves of *Arabidopsis thaliana*

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Arabidopsis thaliana (thale cress) is commonly used for genetic and biochemical studies. We used a mutant of *Arabidopsis* called *toc132toc120*, which lacks a major chloroplast receptor that imports non-photosynthetic proteins. Previous gene expression studies in our laboratory have shown that this mutant has moderately reduced expression of several genes that encode for enzymes that function in the jasmonic acid pathway. Jasmonic acid is a lipid-derived plant hormone that plays a role in plant defense mechanisms. Both the wildtype and mutants were grown for 15 days in M&S media and transplanted into autoclaved soil. The 4-week old plants were used in wounding studies. For protein studies, we tested the three Tris-HCl buffer systems with or without detergents (Tx-100 or SDS) for the efficient extraction of total proteins. The goal was to find a buffer that would yield more proteins for immunoblot studies. The Tris-HCl that contains SDS was more efficient in extracting total proteins than the Tris-HCl alone or Tris-HCl that contains TX-100.