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A HORMONE AND PROTEOME APPROACH TO PICTURING THE INITIAL METABOLIC EVENTS DURING CLUBROOT DISEASE ON ARABIDOPSIS

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Clubroot disease causes gall formation on Brassica roots. A holistic approach was undertaken to understand the role of plant hormones in early clubroot symptom development in Arabidopsis. We used the *CYCB1;1::GUS*, *DR5::GUS* and *ARR5::GUS* constructs to assess clubroot initiation. Hormone concentration between control and infected plants were screened using different hormone mutants for resistance and evaluated auxin transport. Also, a differential proteome study was performed using two dimensional gel electrophoresis coupled to MALDI-TOF. Combining the hormone and proteome data, we postulate that at the first stages of clubroot disease, cytokinins are produced by the pathogen. This triggers a local re-initiation of cell division in the root cortex. Consequently, a *de novo* meristematic area is established that acts as a sink for host-derived IAA, carbohydrates, nitrogen and energy to maintain the pathogen and to trigger gall development.