

Do you know ...

...that white blood cells (mammalians) and root border cells (plants) secrete similar defensive molecules to combat pathogens.

Root cells synthesize and secrete a hydrated matrix that contains polysaccharides, secondary metabolites, antimicrobial proteins and extracellular DNA (exDNA). This exDNA-based matrix seems to function in root defense in a way similar to that of recently characterized neutrophil extracellular traps (NETs) in mammalian cells. This review discusses the role of NETs and RETs (Root Extracellular Traps) in the protection of cells against microbial infections.

See the paper by *Dr. A. Driouich et al., 2013 "Root border cells and secretions as critical elements in plant host defense" Current Opinion in Plant Biology*

<http://www.sciencedirect.com/science/article/pii/S1369526613000939>

You can also consult the paper by *Nguema-Ona et al., 2013. Trends in Plant Science.*

<http://dx.doi.org/10.1016/j.tplants.2013.03>

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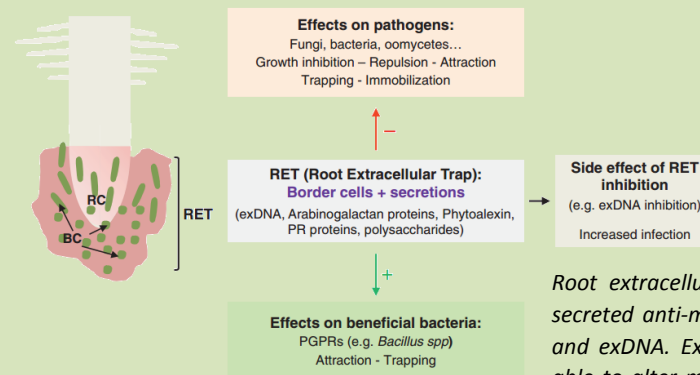
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Root extracellular trap (RET) is formed by border cells and secreted anti-microbial components, arabinogalactan-proteins and exDNA. Experimental evidence indicates that the trap is able to alter microbial behavior in many ways to ensure root protection and create stable changes within the rhizosphere. Inhibition of RET formation results in severe infection.

BC, Border cells; ExDNA, extracellular DNA;
PR proteins, Pathogenesis-related proteins;
PGPR, Plant Growth Promoting Rhizobacteria;
RC, root cap.

