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Microscopic study on colonization and antimicrobial property of endophytic bacteria associated with
ethnomedicinal plants of Meghalaya

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6 Short title: Colonization ultrastructures of endophytic bacteria

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9 **Abstract**

10 Microscopic visualization using transmission electron microscopy (TEM) can provide a better understanding of
11 endophytic colonization within ethnomedicinal plants. Bacterial endophytes were found attached to the host cell
12 wall colonizing the aerenchyma and intercellular spaces of the epidermis and outer cortex except the vascular
13 system. Colonization was non-uniform as single cells, doublets or in the form of microcolonies. Analysis of *in*
14 *vivo* antibacterial action of the methanolic extracts of the isolated endophytic bacteria against Gram-positive,
15 *Streptococcus pyogenes* MTCC 1925 and Gram-negative, *Salmonella enterica ser. paratyphi* MTCC735
16 pathogens has revealed the morphological damages in the tested pathogens respectively, under scanning electron
17 microscopy (SEM). Detached cell wall and cell burst were observed in *Streptococcus pyogenes* where as, cell
18 blisters were shown in *Salmonella enterica ser. paratyphi*. The study on bacterial endophyte colonization

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