



Abstract Submission

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THE FIRST DESCRIPTION OF GERM TUBE FUSION BODY IN GERMINATING BASIDIOSPORES OF EXOBASIDIUM VEXANS

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Would you like to apply for a travel grant?: Yes

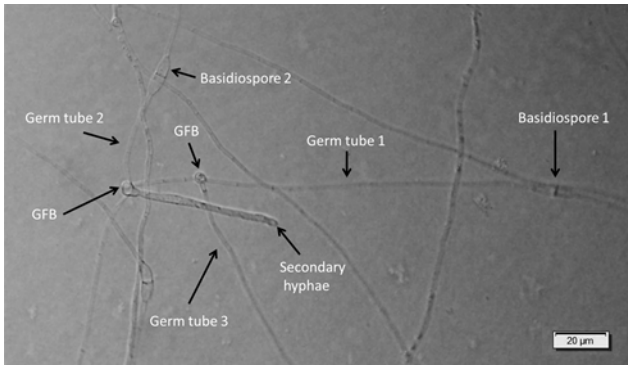
Objectives: Germ tube fusion body (GFB) is known to allow for anastomosis between contacting germ tubes in germinating urediniospores of rust fungi in the genus *Puccinia* (Wang and McCallum, 2009). This process provides a mean for nuclear recombination to occur that leads to the increase of genetic diversity in the fungi. Meanwhile in the fungus *Exobasidium vexans*, the main agent of infection that causes tea blister blight is the basidiospore. Ezuka (1955) provided a description on the three modes of basidiospore germination in *E. vexans* in which they are either germinating by normal germ tubes with chlamydospore-like bodies at the apexes or germinated and form thick germ tubes that bear secondary spores, or there were no germination but the basidiospores transformed into chlamydospore-like bodies. Nonetheless, there were no description on the occurrence of anastomosis in germinating basidiospores. Hence, this study provided the first description of GFB that is crucial for germ tube anastomosis in the fungus *E. vexans*.

Methods: Tea leaves infected with *E. vexans* were collected from tea plantation in Cameron Highlands, Malaysia. Basidiospores were collected from the infected spots on the leaves and allowed to germinate on agar media. The formation and the fate of GFBs were monitored. Fluorescence staining by DAPI (4', 6' diamine-2-phenylindole) was done to observe the nuclear behaviour during the formation of GFBs.

Results: GFBs in *E. vexans* appeared as viscid globules formed as early as 19 hours after the basidiospores germinated. The connection at the GFB was weak and detached easily during the early stages of its formation but became sturdier as it matures. Multiple GFBs of different origins can form on a single germ tube. The GFBs are either fused to another GFB (tip-to-tip) or connected to the side of a germ tube (tip-to-side). Fluorescence staining revealed that nuclear migration occurred towards the GFB. Multiple nuclei were observed in the GFBs, and they were able to germinate giving rise to a slender, wide, aseptate and multinucleate secondary hyphae.

Conclusion: In conclusion, this study provided the first description of GFB formation in the fungus of the genus *Exobasidium*. The formation of GFB is one of the components that are essential for the anastomosis between germ tubes of germinating basidiospores in *E. vexans*.

Image:



Disclosure of Interest: None Declared

Keywords: Conidial anastomosis tube , nuclear behavior , tea blister blight