

Minimal inhibitory concentration of common selectable agents on recalcitrant Malaysian rice cultivar

ABSTRACT

Determining the suitable and optimized Minimal Inhibitory Concentration (MIC) of the selectable agents is critical to successfully recover stably transformed plants. In this study, the MIC of five different antibiotics and one herbicide was determined for their inhibitory effect on the growth of a recalcitrant rice cultivar, MR219 using rice shoot apices as target tissue. Antibiotics such as kanamycin, paromomycin and neomycin did not inhibit the shoot apices growth while geneticin (G-418) and hygromycin showed complete growth inhibition at 400 and 25 mg LG1 , respectively. Similarly, the herbicide basta indicated that 9 mg LG1 was sufficient to cause growth inhibition. To conclude, hygromycin and basta were suggested to the suitable selectable agent to select transformed rice shoot apices.

Keyword: Antibiotic; Herbicide; MR219; Shoot apices; Growth inhibition