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2-ALKYL-4-QUINOLONES PRODUCED BY *Burkholderia* sp. C5.4, ENDOYPHITIC BACTERIA OF *Piper nigrum* L.

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Endophytic bacteria of the genus *Burkholderia* are species with high versatility and genetic adaptability, and can live in different environments. This genus has received increasing attention in research due to its ability to produce various secondary metabolites, including many compounds with antibacterial, antifungal, insecticidal, or herbicidal properties. The objective of this study was to isolate and characterize the secondary metabolites produced by the endophytic bacterium *Burkholderia* sp. C5.4, associated with black pepper (*Piper nigrum* L.). In the study, the bacterial pre-inoculum was prepared by culturing in culture medium 523 at 28 °C for 24 hours, and fermentation was carried out in Nutrient Broth (NB) and Pigment Production Medium (PPM) at 28 °C for two days in an orbital shaker. After the fermentation period, the cells were separated by centrifugation, macerated with acetone, and the solutions were filtered and concentrated to obtain the NB and PPM extracts. The extracts were solubilized in acetonitrile (1 mg/mL) and analyzed by HPLC-PDA using a C-18 5 µm (4.6 x 5 mm) analytical column, step elution with water/acetonitrile (80:20-40:60) for 20 min, flow rate of 1.0 mL/min, and column oven at 40 °C. The substances were isolated by semi-preparative HPLC using a semi-preparative C-18 5 µm column (19 x 150 mm), the same method as the analytical run for 24 min and flow rate of 17 mL/min. Both extracts showed the same chemical profile by HPLC-PDA with the presence of four chromatographic peaks (t_R= 7.5; 8.2; 10.3 and 11.9 minutes), which in the UV spectra showed four bands with λmax of 212.6; 240.9; 320.0, and 334.8 nm, characteristic of 2-alkyl-4-quinolone alkaloids. Based on ^{1}H and ^{13}C NMR and MS analyses, the substances were identified as PSC-B ((*E*)-2-(hept-2-en-1-yl)-3-methylquinolin-4(1*H*)-one), PSC-C (2-heptyl-3-methylquinolin-4(1*H*)-one), PSC-D ((*E*)-3-methyl-2-(non-2-en-1-yl)quinolin-4(1*H*)-one), and PSC-E (3-methyl-2-nonylquinolin-4(1*H*)-one), with *m/z* of 254.15 $[M+H]^-$, 256.17 $[M+H]^-$, 282.18 $[M+H]^-$ and 284.19 $[M+H]^-$, respectively. The results obtained confirm that bacteria of the genus *Burkholderia* are producers of secondary metabolites that may have potential in biotechnological applications. Future investigations will focus on evaluating activities aimed at developing bioproducts that can minimize phytosanitary problems in agriculture.

Keywords: *Alkaloids, Burkholderia, bioproducts.*