

INTISARI

Chromobacterium violaceum dengan sianida yang dihasilkan memiliki banyak manfaat seperti sebagai agen biokontrol, agen pelindian logam, dan agen pengikis anoda dalam industri elektroplating. Penelitian ini bertujuan untuk mendapatkan kondisi optimum bagi biogenesis sianida oleh *Chromobacterium violaceum* untuk berbagai aplikasi yang membutuhkan konsentrasi sianida tinggi, misalnya pada pelindian logam. Optimasi biogenesis sianida dilakukan dengan penambahan glisin dan pengaturan pH. Perlakuan yang dilakukan berupa kombinasi antara kedua faktor tersebut yaitu pH 8 dengan perlakuan tanpa penambahan glisin, glisin 2 g/L, dan 5 g/L; pH 8,5 dengan tanpa penambahan glisin, glisin 2 g/L, dan glisin 5 g/L; pH 9 dengan tanpa penambahan glisin, glisin 2 g/L, dan 5 g/L; kontrol tanpa penambahan glisin dan tanpa pengaturan keasaman. Deteksi sianida dilakukan dengan metode asam pikrat. Hasil pengamatan menunjukkan bahwa rerata konsentrasi sianida tertinggi sebesar 95,701 ppm diperoleh pada perlakuan penambahan glisin 5 g/L dan pH 9.

Kata kunci: optimasi, bakteri penghasil sianida, sianida, *Chromobacterium violaceum*

ABSTRACT

Chromobacterium violaceum with its ability to produce cyanide have many functions, such as a biocontrol agent, metal leaching agent, and anode abrasive agent in electroplating industry. This research was aimed at determining the optimum conditions for the biogenesis of cyanide by *Chromobacterium violaceum* for various applications requiring high cyanide production, such as on metal leaching. Optimisation of cyanide biogenesis was carried out by supplementing various concentrations of glycine and pH adjustment. The treatments were designed by combining both factors, namely pH 8 without glycine addition, and with addition of glycine 2 g/L, and 5 g/L; pH 8.5 without the addition of glycine, and with addition of glycine 2 g/L, and glycine 5 g/L; pH 9 without the addition of glycine, and with addition of glycine 2 g/L, and 5 g/L; and control with no added glycine and no pH adjustment. Cyanide detection was done by using picric acid method. It was found that the highest average cyanide concentration was obtained at 95.701 ppm with the addition of glycine at 5 g/L and at pH 9.

Keywords: optimisation, cyanide-producing bacteria, cyanide, *Chromobacterium violaceum*