Applications of Response Surface Methodology for Medium Optimization *Arthrobacter sp.* Producing Carotenoid

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Response surface methodology (RSM) is a technique widely used to optimize various processes. RSM is a statistical technique for optimizing complex processes and it reduces the number of experimental trials. In this study, the effect of medium composition on carotenoid production by *Arthrobacter sp.* were investigated using RSM. Three medium constituents: yeast extract, $MgSO_4$ and dextrose were chosen for significant factor. The optimal compositions of medium constituents for carotenoid production were determined as 1 g/L yeast extract, 0.0879 g/L $MgSO_4$ and 1 g/L dextrose. An overall 2-fold (288 mg/L) increase in carotenoid production was obtained compared with basal medium after optimization by using response surface methodology.