

## Characterization of Chemically Mutated *Rhodobacter sphaeroides* Cultured under Different Light Intensities of Blue LED

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*Rhodobacter sphaeroides* can use organic compounds to perform photosynthesis in various wavelengths. In this study, we confirmed chemical mutant strain characterization depending on the light intensity of Blue LED. We carried out an experiment in micro-aerophilic condition use the chemical mutant strain of *R. sphaeroides*; MBTLJ-8, MBTLJ-13, MBTLJ-20 with 40, 80, 120lux of blue LED intensity. The physiologically Activating compounds (PACs) is mixed organic compounds extracted from *R. sphaeroides*. Also, we examine the growth activating effect of *E. coli* on PACs. As results, all mutant strains showed great growth under the Blue LED. The PACs extracted from mutant strain cultured under 40-lux LED were growth activation on effect in *E. coli* than other light conditions. Additionally, MBTLJ-20 PACs also gave a high effect in *E. coli*. Therefore, the higher LED intensity affect enhanced growth of mutant strain. In contrast, the high intensity of LED was inhibited produced pigment and lower PACs effect in *E. coli*. Furthermore, we identify the optimal culture condition, so we able to obtain of great effect of PACs from mutant strain.