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E. coli (ATCC 8739) was used as a model organism for the study. The bacteria were grown in Luria-Bertani (LB) broth (Difco, Franklin Lakes, NJ, USA) at 37°C for 24 h. The cell concentration was adjusted to 10^8 CFU/ml using a spectrophotometer (Shimadzu, Kyoto, Japan). The cells were then washed with sterile distilled water and resuspended in the same medium.

The bacterial suspension was then inoculated into a sterile 250 ml Erlenmeyer flask containing 100 ml of the same medium. The flask was incubated at 37°C for 24 h with shaking at 150 rpm. The bacterial concentration was determined using a spectrophotometer. The cells were then washed with sterile distilled water and resuspended in the same medium. The bacterial suspension was then inoculated into a sterile 250 ml Erlenmeyer flask containing 100 ml of the same medium. The flask was incubated at 37°C for 24 h with shaking at 150 rpm. The bacterial concentration was determined using a spectrophotometer. The cells were then washed with sterile distilled water and resuspended in the same medium.

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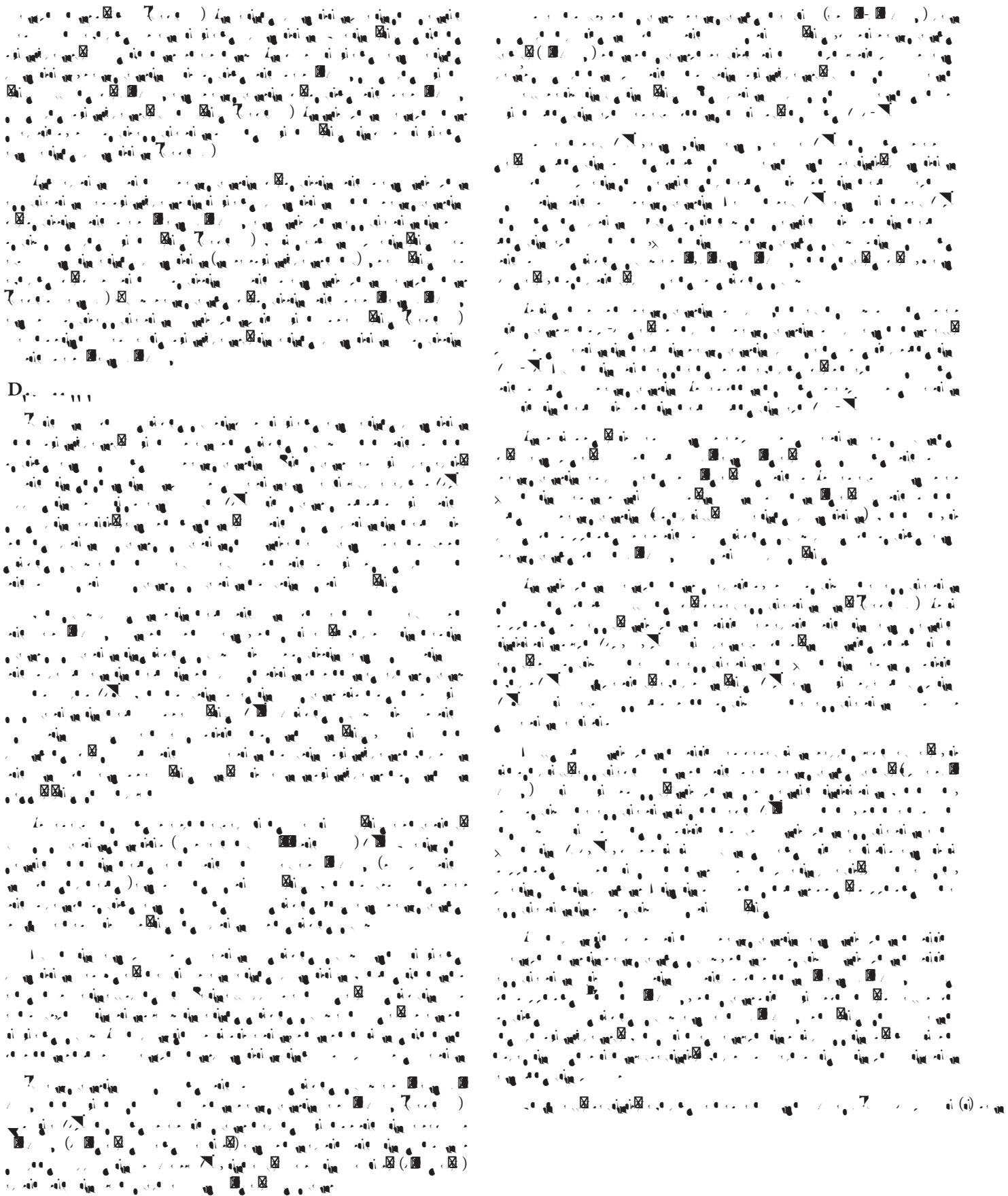
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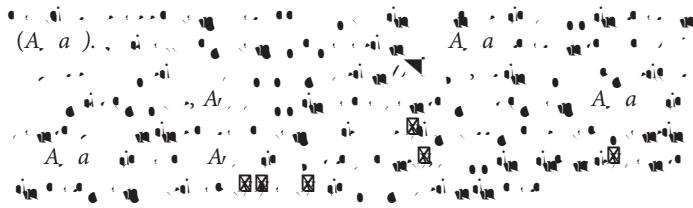
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