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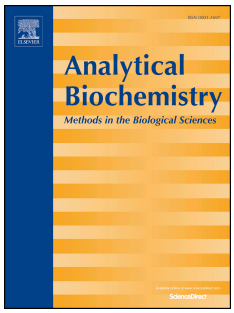


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# A Method for High Transfection Efficiency in THP-1 Suspension Cells Without PMA Treatment

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## Abstract

Adherent cells such as mouse RAW cells or human cancer U2OS cells are beneficial to DNA transfection, with 20%-60% transfection efficiency. However, this DNA transfection is rarely used on suspension cells due to its low transfection efficiency (≤ 5%). We recently found a new DNA transfection method to increase the efficiency up to 13.5% in suspension cells without PMA treatment. We also found that DNA transfection of human TNFAIP1 or CXCL1 recombinant plasmid DNA in THP-1 cells induces a high level of TNF-α protein. Overall, this new method is simple yet efficient and can be used for the overexpression of DNA in suspension cells.

## Introduction

Transfection of DNA by Lipofectamine in cells has been used as a powerful tool for identification of the biological function of genes (1). DNA transfection provides a high efficiency (≥60%) in some selective adherent cells such as U2OS (human bone Osteosarcoma Epithelial cells, ATCC® HTB-96™ (2) or mouse RAW 264.7 cells (ATCC® TIB-71™ (3). DNA transfection is rarely used in THP-1 cells (human monocyte-like cells, ATCC® TIB-202™(4), because this proposed protocol cannot generate a high transfection efficiency in THP-1 (≤ 5%), even though these suspension cells are pre-matured by PMA (phorbol 12-myristate 13-acetate, Sigma) treatment and become adherent cells prior to DNA transfection (5), (6).