

# Optimal bactofection into HT1080 cells is achieved at low multiplicity of infections

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**Abstract**—The traditionally hard-to-transfect human fibrosarcoma cell line HT1080 is used widely as a host for gene delivery and expression experiments. Recently, DNA delivery into this cell line was achieved using bactofection, a unique method using invasive strains derived from engineered *E. coli* strains expressing the *Y. pseudotuberculosis* invasin gene. While promising, optimal conditions to achieve gene transfer in this cell line using this technique have yet to be established. In this study, we demonstrate that optimal bactofection into HT1080 is achieved at low multiplicity of infections (m.o.i.s), unlike that observed previously in other cell lines. In addition reporter gene expression did not significantly increase with rising m.o.i.s, suggesting that beyond a threshold of invasive bacteria used the invasin-integrin route was limited in this cell line. These observations will provide a better understanding of how this vector interacts with different cells and may offer important insight to further improve this unique technology.

**Keywords**— Bactofection, invasion, DNA delivery, vector, HT1080.

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