Application Note : High rate of transfection achieved with Metafectene in the rodent trophoblast giant cell line, Rcho-1

Kaisa Selesniemi, and Dr. Thomas L. Brown

Wright State University School of Medicine, Department of Anatomy and Physiology, 3640 Colonel Glenn Highway, 042 Biological Sciences Building, Dayton, Ohio, 45435, USA.

Transfection of Rcho-1 cells (mouse placental (trophoblast giant cell lineage) cell line)

Rcho-1 cells were cultured in 60mm dishes at 37^{o}C, 95%O_2/5%CO_2 in RPMI 1640 containing 10% FBS with antibiotics. For transfection, Rcho-1 cells were plated at 3 X 10^5 in a 60mm dish in RPMI 1640 containing 10% FBS with antibiotics. Twenty four hours later the media was changed and 2.5 ml of fresh, serum containing media was added. Rcho-1 cells (50% confluency) were transfected for 24 hr with pc3DNA-Lac Z using either Metafectene or Lipid T at the optimal lipid:DNA ratio of 12µl:3µg and then washed and fixed for Lac Z staining. To transfect, Mectafectene or Lipid T was added to 100µl of serum free RPMI and incubated for 5 min at RT [TUBE A]. In a separate tube, the DNA was added to 100µl of serum free RPMI and incubated for 5 min at RT [TUBE B]. The contents of TUBE B was added to TUBE A, dropwise, and then mixed by pipetting up and down and incubated for 20 min at RT. The transfection solution was added dropwise to cells and mixed by swirling the plate.

Conclusion: Mectafectene was far more effective than Lipid T in transfecting Rcho-1 mouse placental trophoblast cells (Table 1). Transfection efficiency in Rcho-1 cells using Metafectene is routinely 15-20% compared to ~1% for other transfection reagents (Lipid E, Lipid F, Lipid G or Lipid T). Lipid T is shown as representative of lipid transfection reagents that were tested.

Table 1

Lipid T	Metafectene