

MATra trouble shooting

Low Transfection Efficiency

- **Inappropriate buffer composition**
Serum-free buffer or medium has to be used for the formation of the MATra-A Reagent/DNA complex, otherwise proteins from the serum will bind to the MATra-A Reagent; once the MATra-A Reagent/DNA complex is formed it can be applied to cells in the presence of serum.
- **Suboptimal ratio of MATra-A Reagent to nucleic acid or virus**
Determine the optimal ratio of MATra-A Reagent to DNA by using the optimization protocol for 96-well plate (see manual).
- **Correct handling of the magnet plate**
Use the magnet plate with the magnets facing up. After addition of the MATra-A Reagent/DNA complexes to the cells, position the cell culture plate on the magnet plate.
- **Positive control**
Perform a positive control transfection experiment with a well-characterized reporter gene (e.g. GFP, Luciferase).

Cellular Toxicity

- **Check the purity of the molecule of interest to be delivered**
(lipopolysaccharides which are endotoxins will cause cell death).
- **Cell density (% confluence) was not optimal at the time of transfection**
Adherent cells are seeded such that they reach 60-80% confluency at the time of Magnet Assisted Transfection. If the cell density is too low, increased toxicity may be observed. For suspension cells it is necessary that the cells are immobilized on the well bottom (see manual).
- **Suboptimal amount of DNA (see manual)**
For the Magnet Assisted Transfection, one uses approximately 5x less DNA than for Lipofection.