# Modeling relationship between [siRNA] and [protein] translation

# Finding

Rate of mRNA degradation/decay

Rate of formation of mRNA-siRNA\* complexes (takes into account siRNA\* recycling)

Assuming that RISC\* complex is replenished rapidly given ATP.

Rate of formation of mRNA

Rate of mRNA cleavage

By the Conservation Law:

Substituting and solving for :

Therefore the relationship between total concentration of siRNA and rate of degradation of mRNA due to gene knockdown can be expressed in an enzymatic kinetic reaction (Michaelis-Menten)