**Summary**

**Studying *in vivo* effect of cell-penetrating inhibitor peptide conjugates on protein-protein interaction**

1. Three conjugates containing cell-penetrating peptides, octaarginine, penetratin, Dabcyl-Arg6-Lys, were prepared, with and without fluorescent labelling. The peptides were synthesised by solid-phase peptide synthesis and were conjugated in solution via thioether bonds.

2. All conjugates showed efficient cell-penetration on HEK293T cells. The cellular-uptake of conjugates was time and concentration dependent. Based on our data the conjugates can internalised even at 5 µM and during 1-2 h incubation; and they are not toxic.

3. We examined the activation of the ERK2 signal pathway in case of all conjugates using anti-phospho-Erk2 Western-blot. Among the conjugates only the octaarginine-RHDF treated cells showed decreased phosphor-Erk2 level, which means the inhibition of the Erk2 pathway.

4. We studied the binding ability of octaarginine-RHDF by isolated kinase. Based on the Kd values; Kd= 3 μM of the free peptide and Kd=0,6 μM of the conjugate; we can say the conjugation with octaarginine increased the binding ability.