Abstract

Transport of proteins to the nucleus through a nuclear envelope is controlled mostly via nuclear localization signal (NLS). Nuclear localization signal is rich in positively charged amino acids arginine and lysine. It was observed that activity of this NLS could be regulated through a phosphorylation of serine in its close proximity. Either a phosphorylation of serine or phosphomimetic changes of these „presequences“ could represent an important mechanism regulating a localization of protein in cells in relation to a cellular activation. In our laboratory was identified protein – Fragile X mental retardation syndrome 1 neighbor (Fmr1nb), whose cellular localization could be driven by this posttranslational modification.