**Verze 6**

1. **Download an unknown sequence for this version:**

CTCTAAACCTTATGACAGAGCAATTGCAAGATTCTGGGCAGACTTTCTGGACAAGAAGTTTTATGAGGCGGGGGCACGCTTATTAATGAGCAAAGGGGAAGCACAGGAGGAAGCGAAGAGAGATGTAATCGAAAACCTGGGAATAATGGAAGGAGCTCTGAAAGAGGTTTCTGGCGGGAAGCCGTATTTCGGGGGAGAAACGTTTGGATTGATAGATATTGCGTTCATACCGTTTACTGCTTGGTTTCTTACCTACGAAACCCTTGGAAACTTCAAGATATCGTTGGATGAGAAGTTTCCAAGGTTGGGGGCGTGGGCTAAGAAATGTATGGAGAGGAAGAGCGTTAGCACCCGACTGGAAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTCACACAGGAAA

• Determine if the sequence is „contaminated“ with any plasmid.

• If this sequence is contaminated, "clean up" and write the clean sequence in **FASTA format**.

• Translate the sequence and find out how long the longest identified peptide is and in which reading frame (ORF) is located?

• Does this peptide encode a meaningful protein? What?

• What organism is the sequence likely to come from?

**B) Find a protein sequence called “SUPERMAN” from *Arabidopsis thaliana***

• What is the accession number and function of this protein?

• How many times would this sequence be digested with pepsin (pH1.3)?

• Does the sequence have any probable transmembrane helices?

• Design primers to **detect this gene** (so that the amplification product is no longer than 500 bp).

• Is there a **human homologue** of SUPERMAN?