**Version 1**

Find human protein sequence **FGF3**

* What is the accession number and function of this protein?
* How many valines does the sequence contain?
* How long is the longest fragment after trypsin digestion?
* How many human similar reference proteins are in the databases?
* Does the sequence contain any transmembrane regions?

Download seqence **NM\_001757.3**

* What does this sequence encode ?
* Is there a complementary sequence to primer R1?

>R1

GCTCTGACGCTCATGATGC

* In which exon is the complemetary sequence for this primer?
* Is the primer suitable for PCR with Ta=60°C?
* Design suitable F primer for this experiment. – We did not cover this one

**Version 2**

download sequence **NM\_005247.2**

* What does this sequence encode?
* Are there any significant single nucleotide polymorphisms (GMAF), in which exons?

We did not cover this one, since it does not work anymore

* Would be the restriction endonucleases NdeI and KpnI suitable for cloning of the CDS?
* Translate the CDS of this sequence into the protein sequence, write down the protein sequence in FASTA format.
* Compare the protein to its homologue from mouse (Mus musculus), what is their identity?

Download the peptide sequence **S2**.

>S2

CGPSTSGTTSGPGPARPARARPRRPREETLTPEEEEKRRVRRERNKLAAAKCRNRRRELT

DRLQAETDQLEEEKAELESEIAELQKEKERLEFVLVAHKPGCKIPYEEGPGPGPLAEVRD

LPGSAPAKEDGFSWLLPPPPPPPLPFQTSQDAPPNLTASLFTHSEVQVLGDPFPVVNPSC

* Identify the protein.
* Does it contain any typical domains?
* How many cysteins contain the peptide?
* What is the molecular weight of this peptide?
* Is the sequence (whithin the compared area) identical to the identified protein?