MCP MOLECULAR & CELLULAR PROTEOMICS

# Proteomska identifikacija substratov cisteinskih katepsinov na površini rakavih celic

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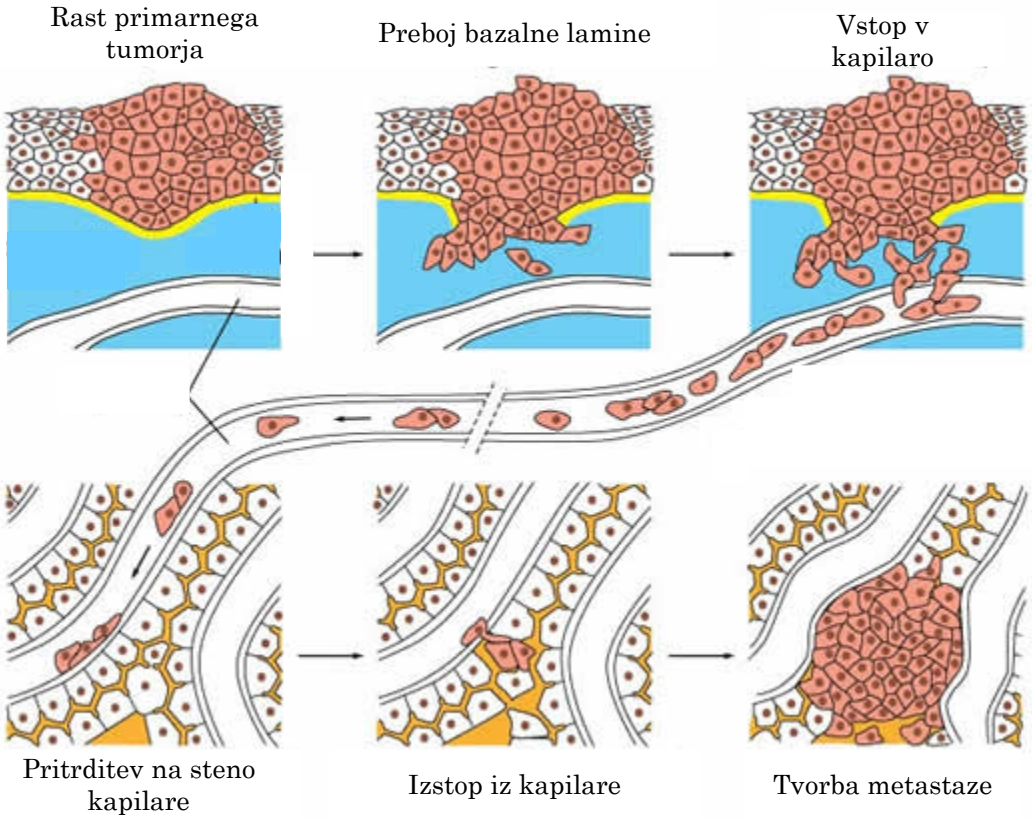
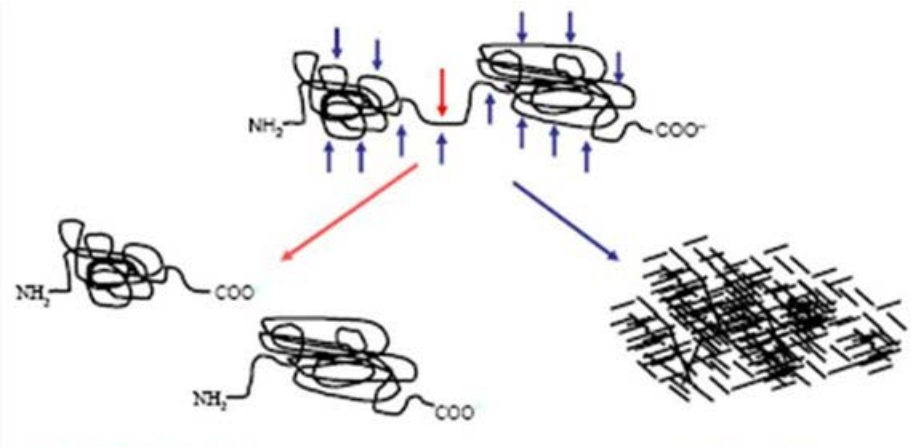
# Rak in razvoj metastaz



Kako rakaste celice zapustijo primarni tumor?

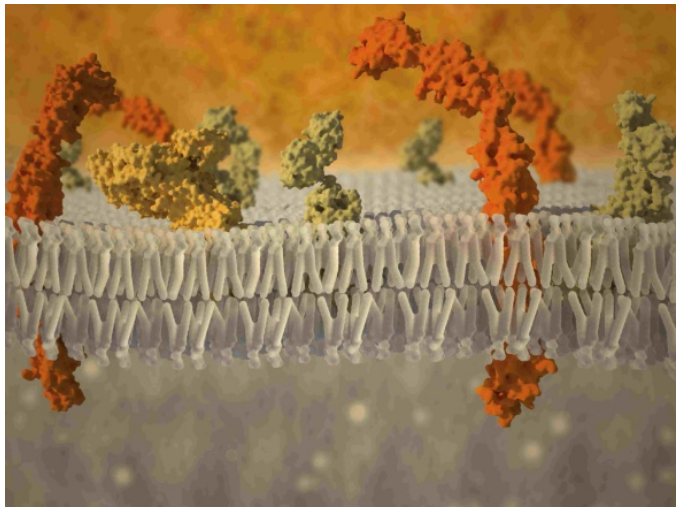
Proteaze - encimi, ki cepijo proteine in peptide




omejena proteoliza

razgradnja

Cepitev proteinov na celični membrani



Katepsini:

- lizosomske proteaze

- pri raku se izločajo v izvencelični prostor

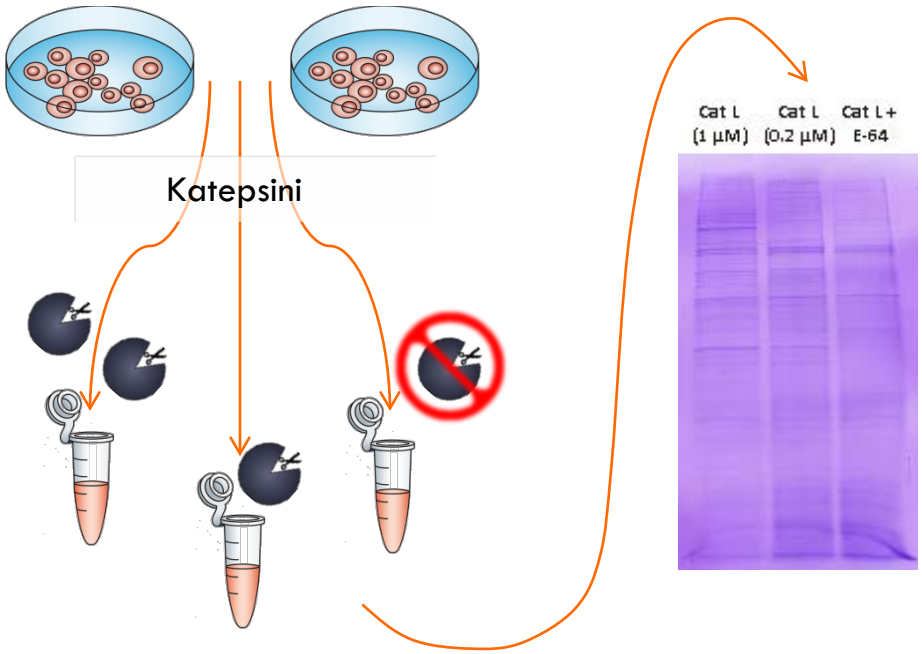
- povišano izražanje v različnih vrstah tumorjev

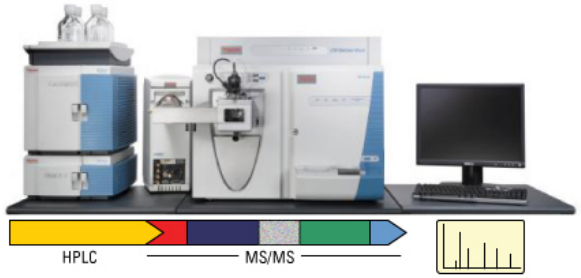
# Osnovna zasnova eksperimenta

Tretiranje celic s katepsini

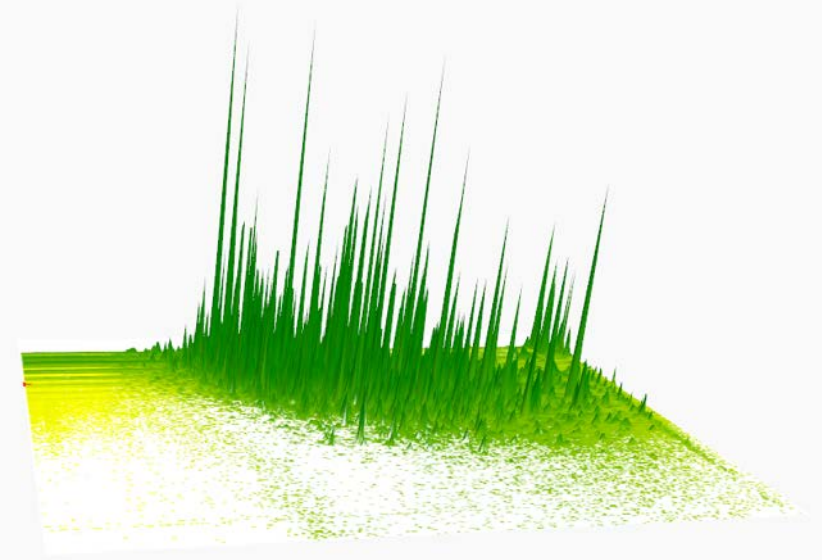
Separacija proteinov v raztopini s poliakrilamidnim gelom

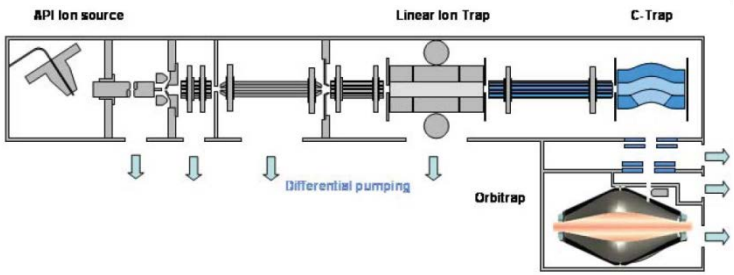
Identifikacija proteinov z masno spektrometrijo

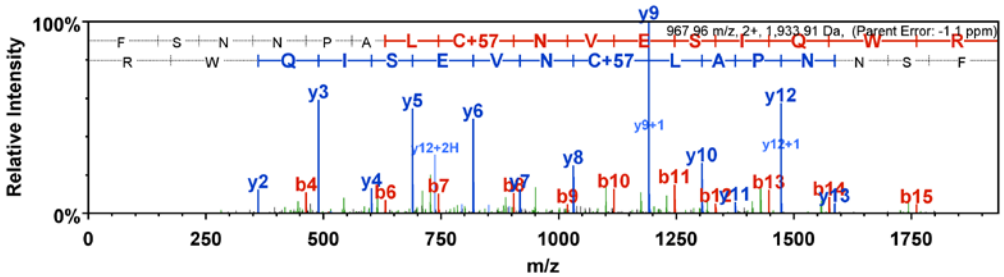


# Masna spektrometrija



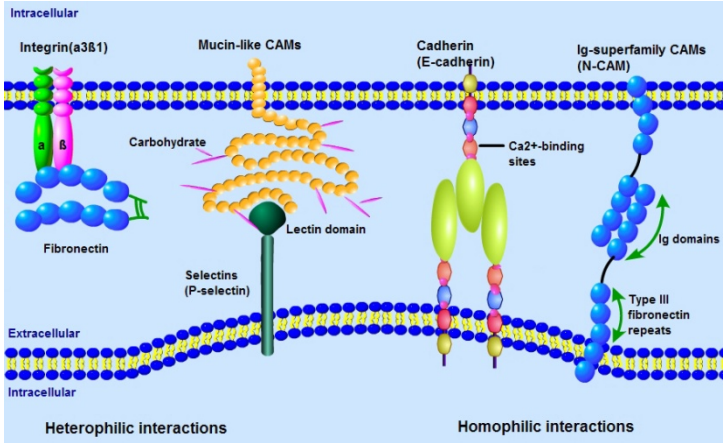


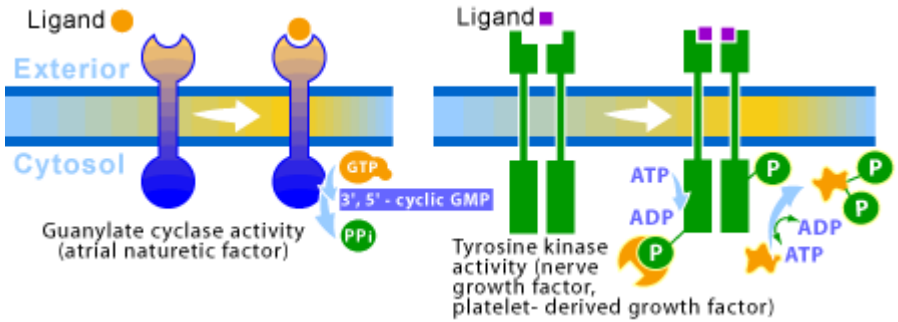
Identificirani proteini

**Adhezijski proteini:**
ALCAM
L1CAM
MUC18 (MCAM)
nectin-like protein 5
CD44

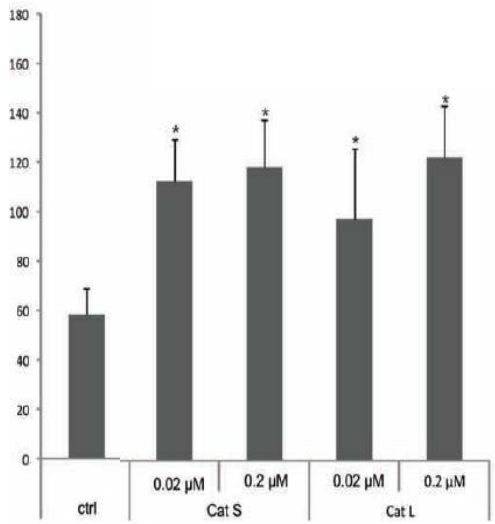
**Celični receptorji:**
neuropilin1
plexin A1
plexin B2
EGFR
ephrin type A receptor 2

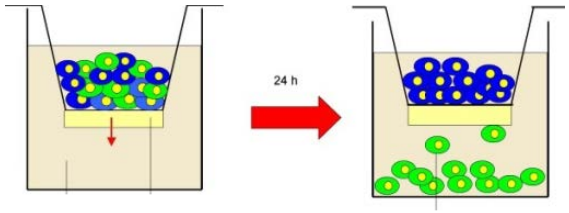



SAB ®



# Prisotnost katepsinov pospeši migracijo rakastih celic



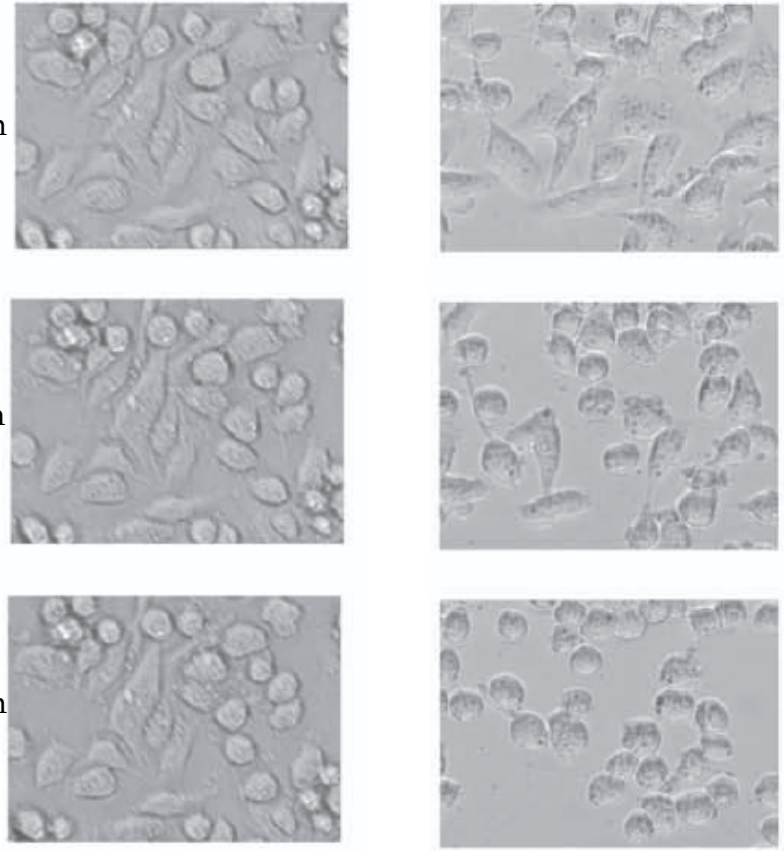

Negativna kontrola

celice tretirane s katepsinom

t=0 min

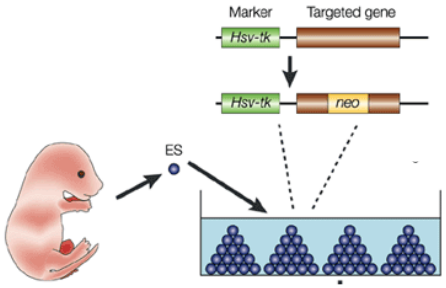
t=3 min

t=10 min

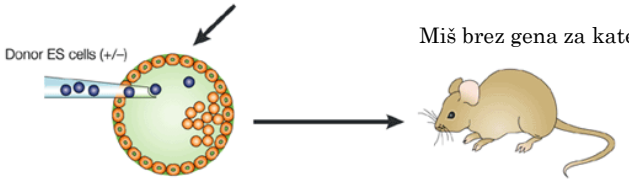


Soncin in sod., 2009

Ali se opažene cepitve membranskih proteinov dejansko zgodijo v živem organizmu?
(dokaz na mišjem modelu raka trebušne slinavke)



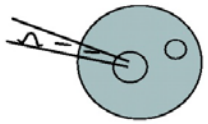

Vnos okvarjenega gena v mišjo zarodno celico




Miš brez gena za katepsin

Mak in sod., 2001

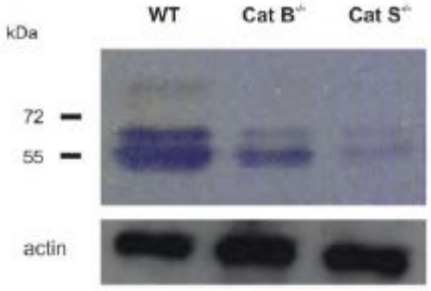
DNA z zapisom za onkogen

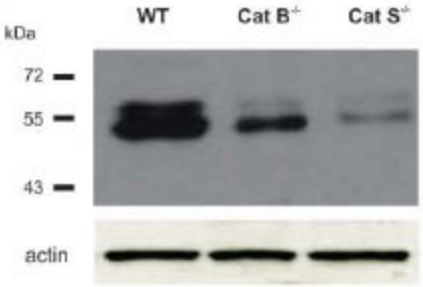
vnos DNA v mišje jajčece

Transgena miš

Bockamp in sod., 2002




ALCAM




CD44

IJS

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