# Molekularni mehanizmi imunološkog djelovanja proteina PVR u virusnoj i tumorskoj patogenezi


**Tihana Lenac Roviš**

**Centar za proteomiku**
**Medicinskog fakulteta**
**Sveučilišta u Rijeci**

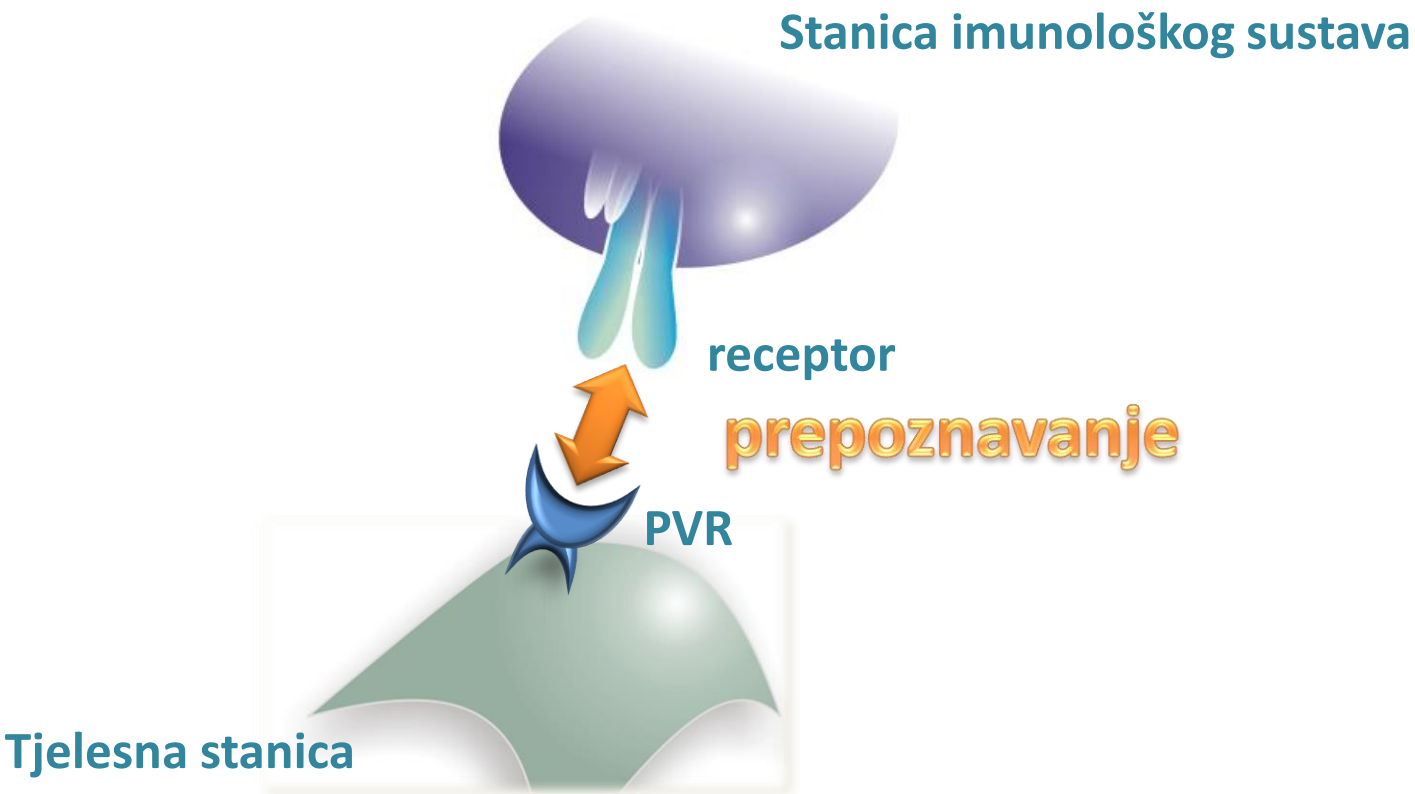

hrzz
Hrvatska zaklada za znanost

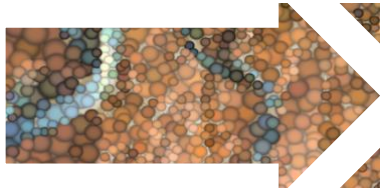
CENTAR ZA PROTEOMIKU

MEDRI

UNIRI

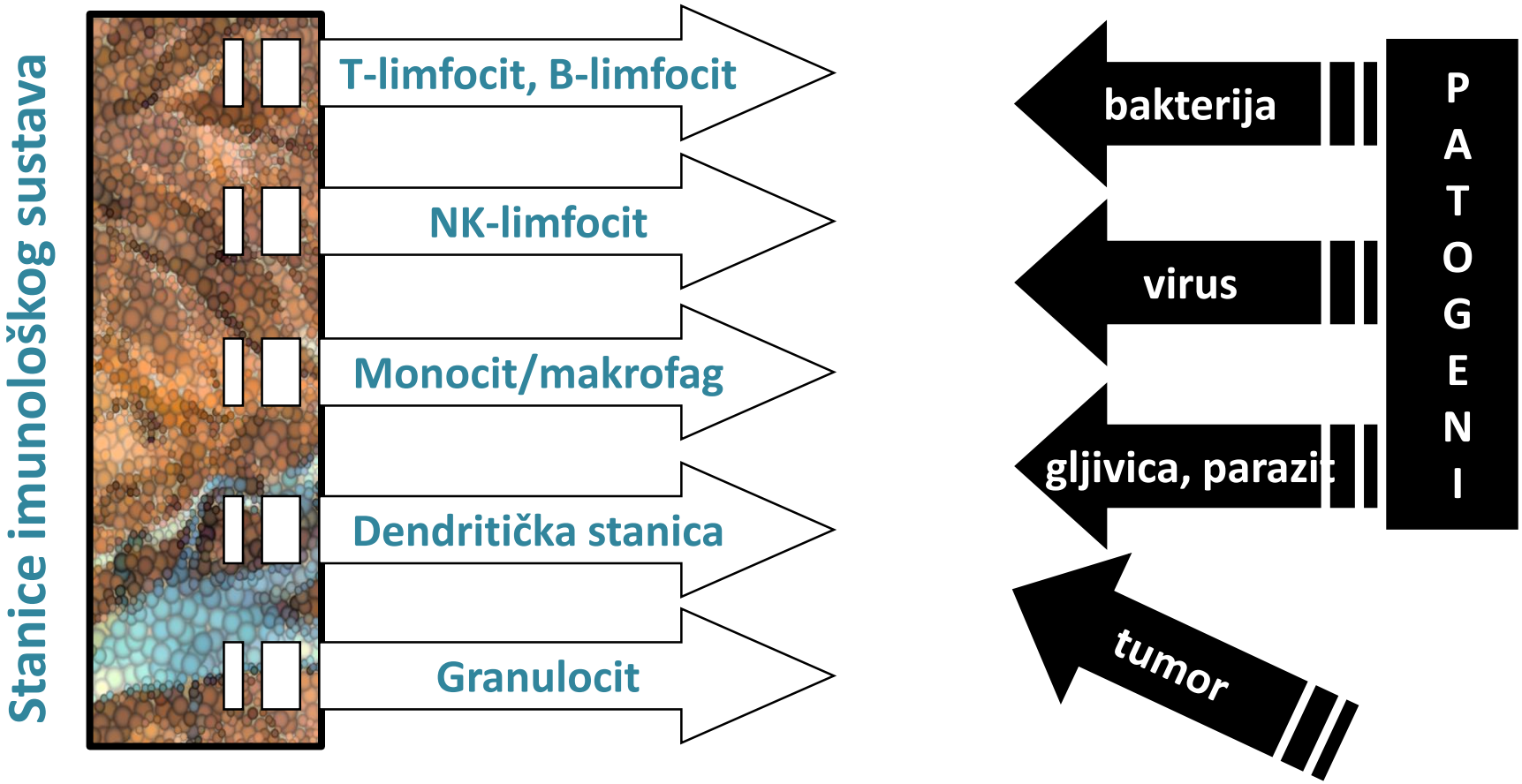
# Stanice imunološkog sustava prepoznaju PVR



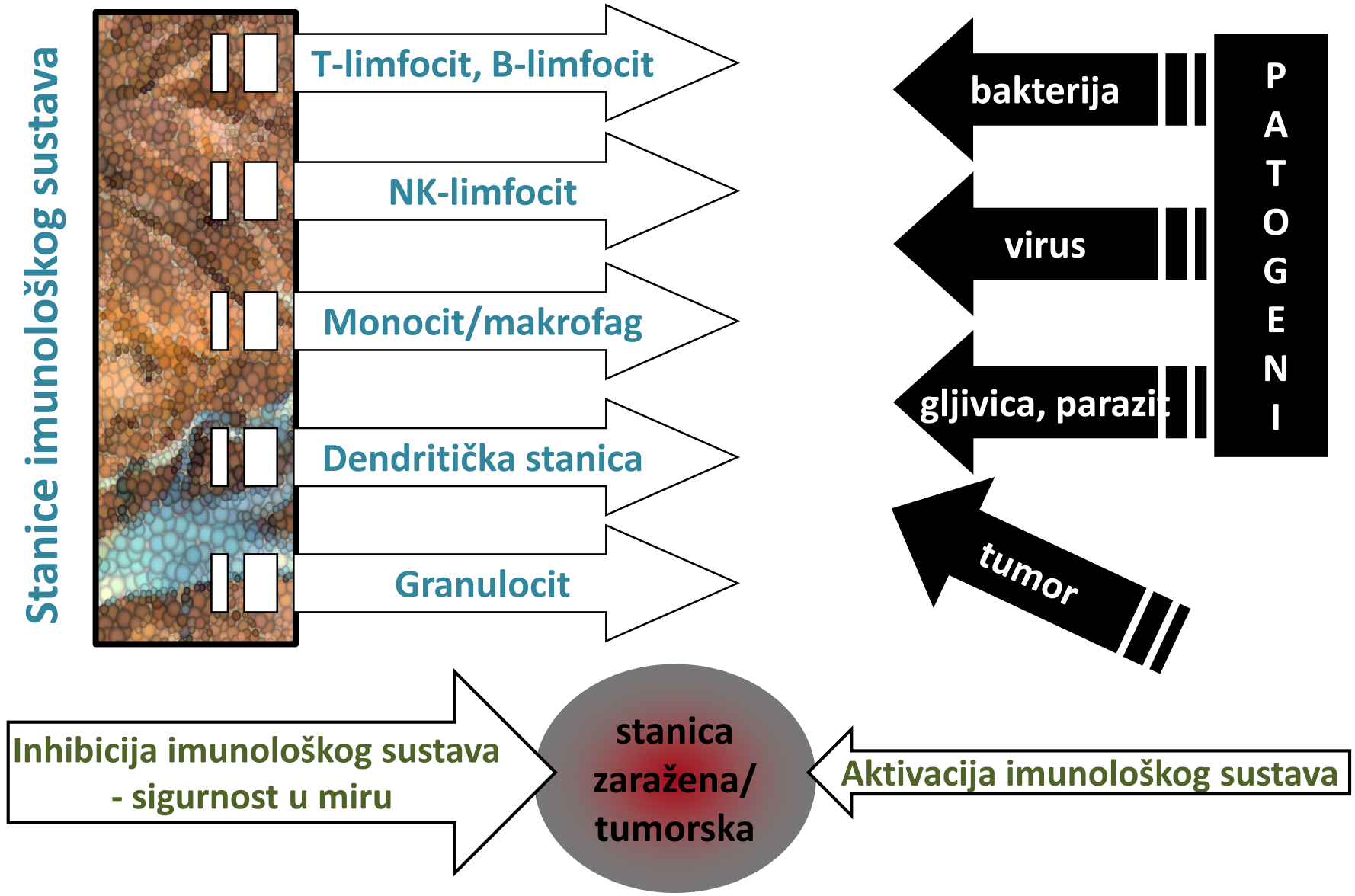



Količina proteina PVR na površini tjelesne stanice utječe na imunološki odgovor

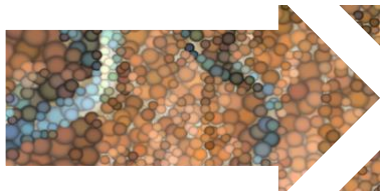
# Dužnost stanica imunološkog sustava je obrana



# Dužnost stanica imunološkog sustava je obrana

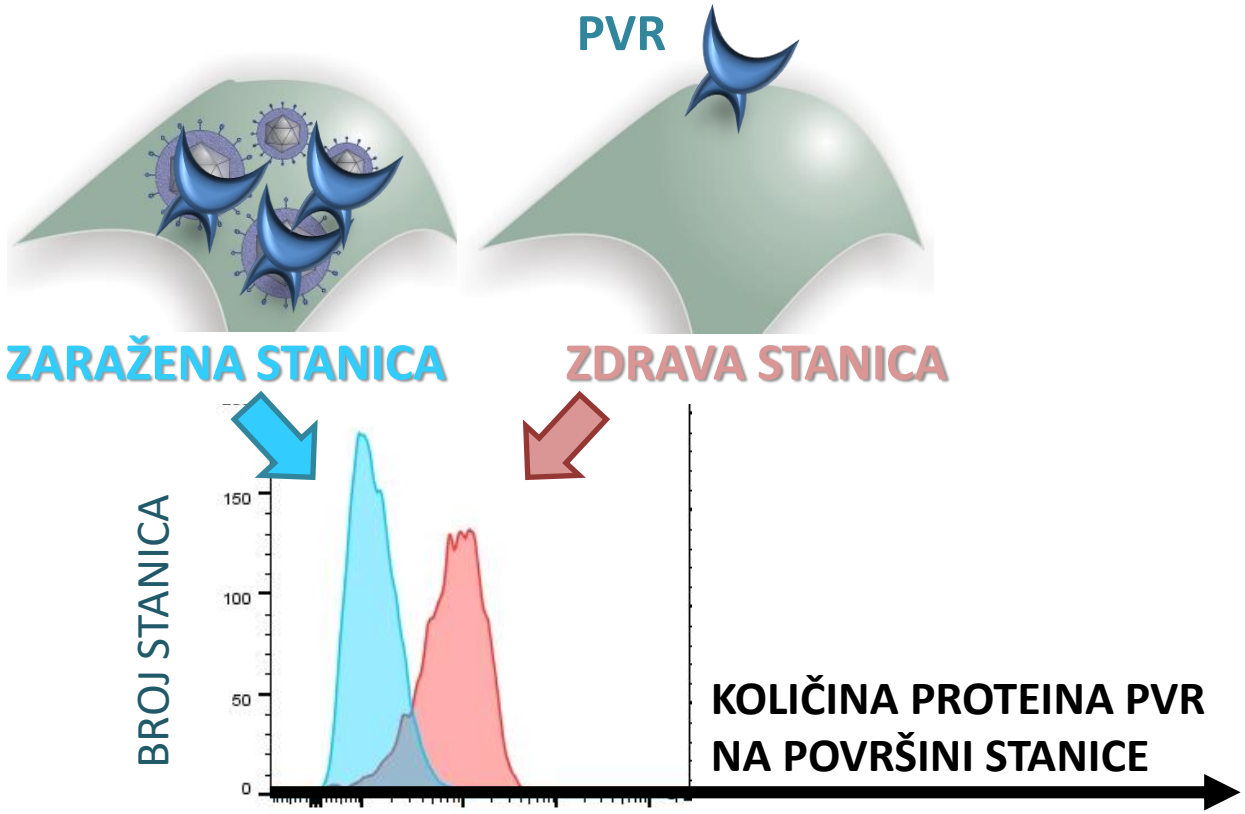


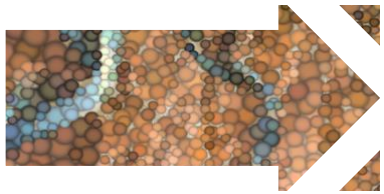
# Cilj i patogena i tumora je izbjeći imunološki nadzor

**virusi** i **tumori** koriste dijametralno suprotnu strategiju izbjegavanja imunološkog nadzora, kada je riječ o proteinu PVR

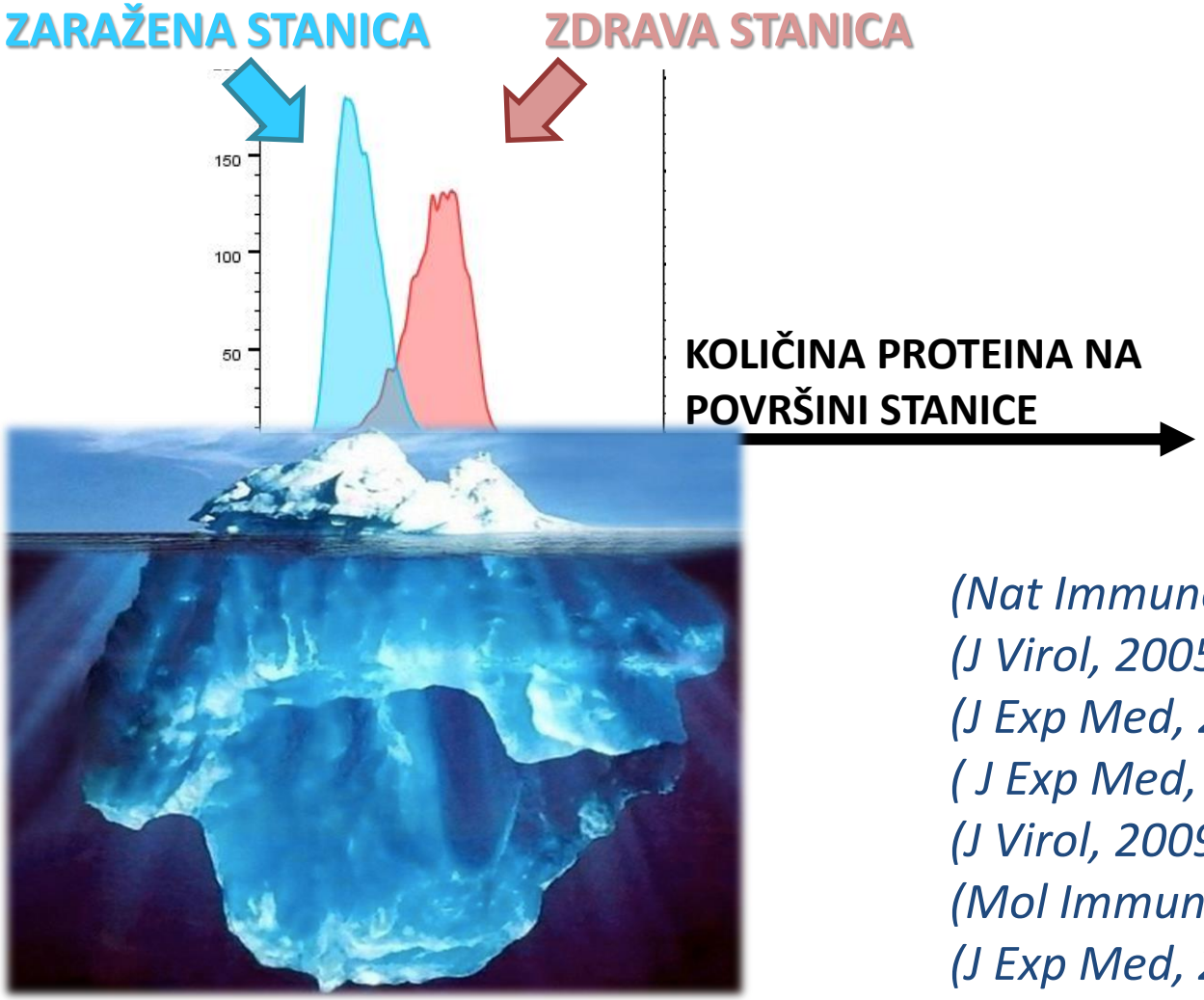
# Virus sprečava pojavu proteina PVR na površini



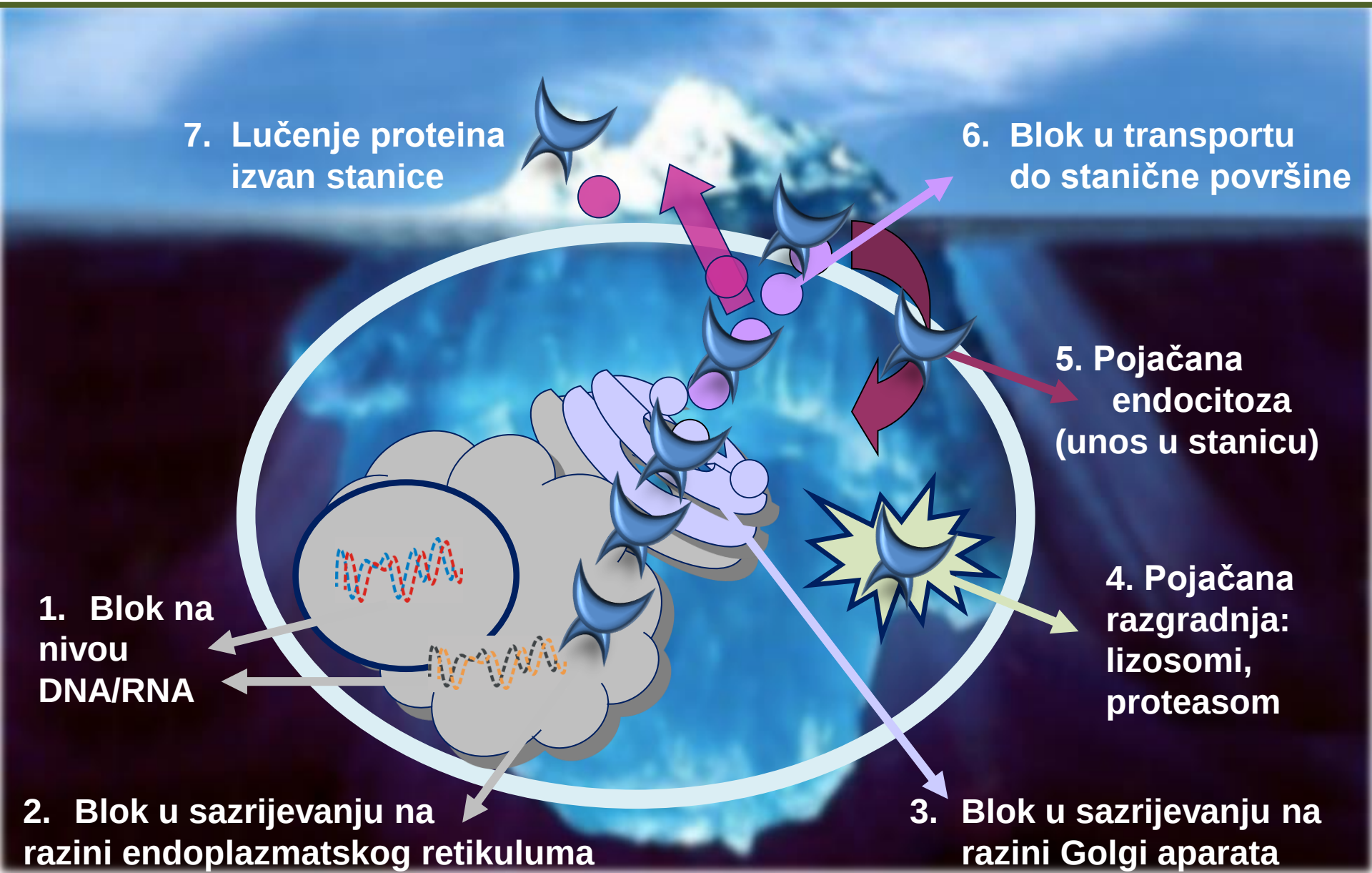
**KAKO? Kojim molekularnim mehanizmom**

# Virus sprečava pojavu proteina na površini

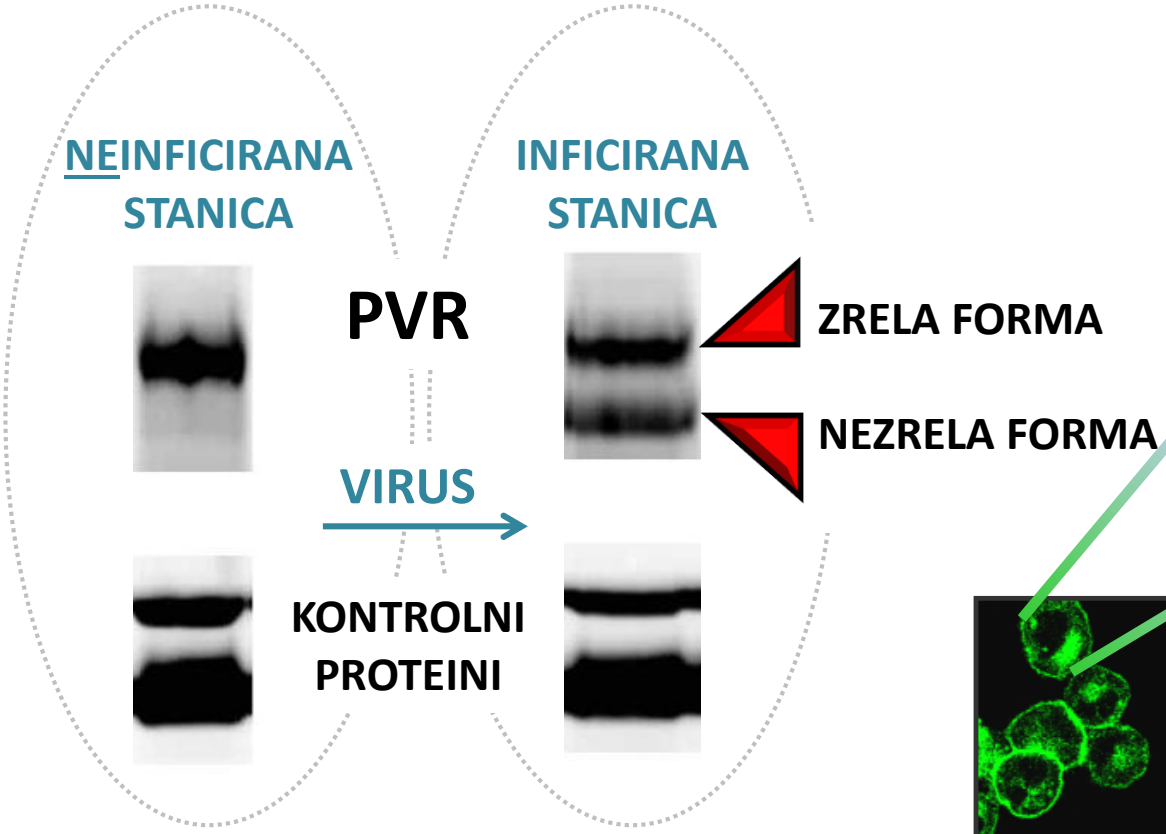


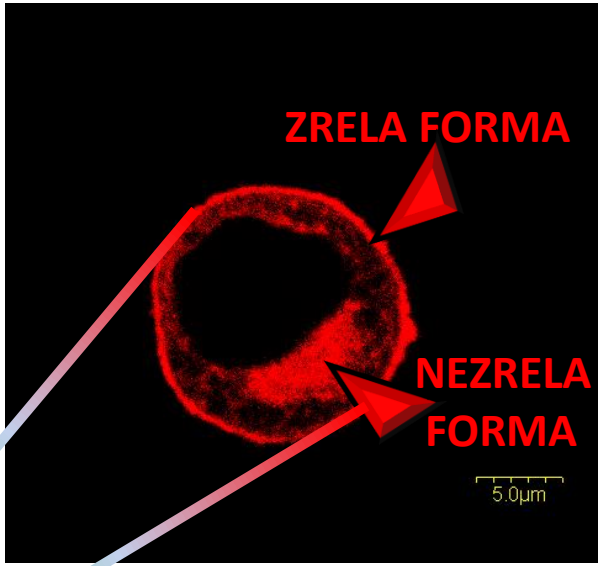

*(Nat Immunol, 2002)*
*(J Virol, 2005)*
*(J Exp Med, 2005)*
*( J Exp Med, 2006)*
*(J Virol, 2009)*
*(Mol Immunol, 2009)*
*(J Exp Med, 2016)*

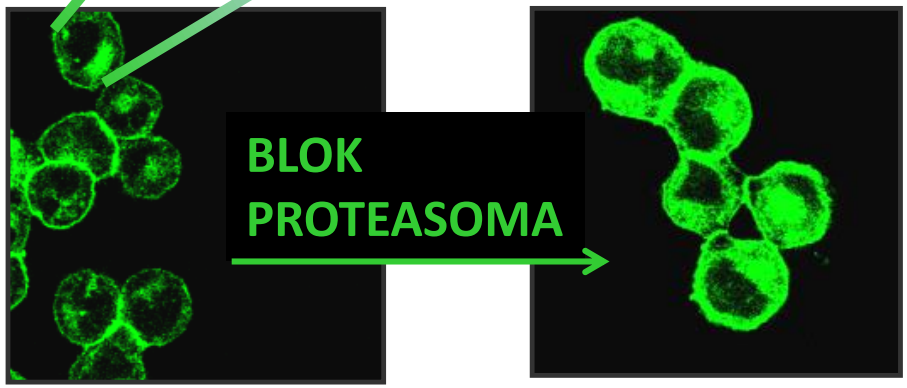
# Virusi mogu manipulirati svim staničnim putevima



# U virusom inficiranoj stanici nakuplja se nezrela forma proteina PVR koju uklanja proteasom

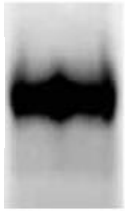


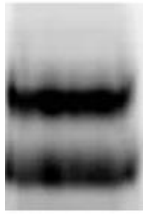
# Koji dio virusa omogućava regulaciju proteina PVR?

PVR



VIRUS →

TKO TOČNO?



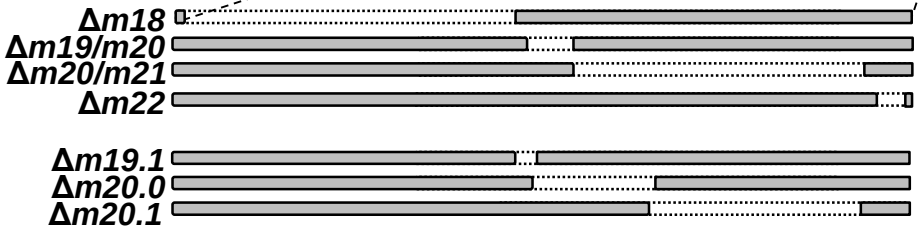
GENOM DIVLJEG TIPA VIRUSA

VIRUS KOME NEDOSTAJE 1. SET GENA

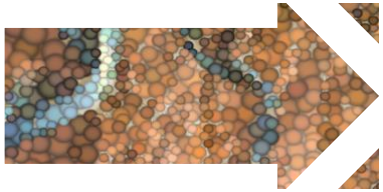
VIRUS KOME NEDOSTAJE 2. SET GENA

VIRUS KOME NEDOSTAJE 3. SET GENA

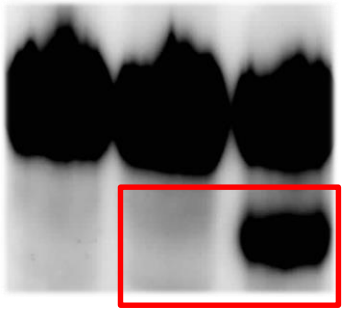
...


preko 10 novih rekombinantnih mutanti virusa



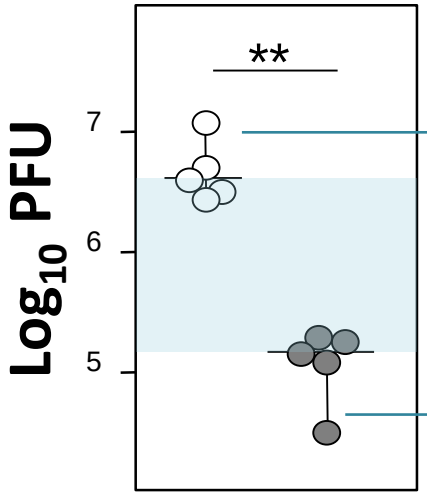
virusni protein m20.1 regulira protein PVR




PVR

# Virus koji ne uspije sprječiti PVR da stigne na površinu biti će 10X manje uspješan

**TITAR (KOLIČINA) VIRUSA U ORGANU**




Virus koji **može** smanjiti količinu proteina PVR na površini zaražene stanice (**DIVLJI TIP**)

**Razlika između količina dva virusa u organu je 10X**

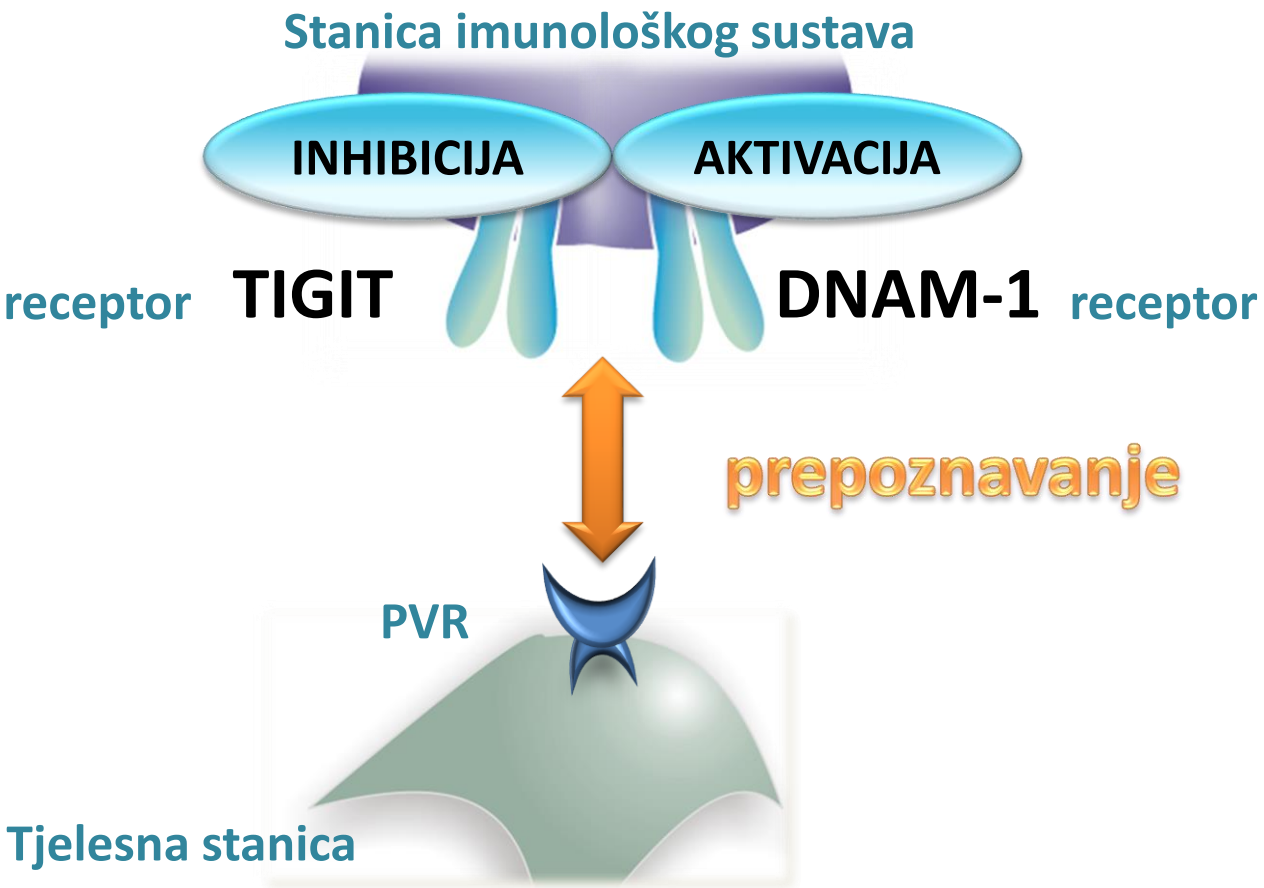
Virus koji **ne može** smanjiti količinu proteina PVR na površini zaražene stanice (**MUTIRAN U m20.1**)

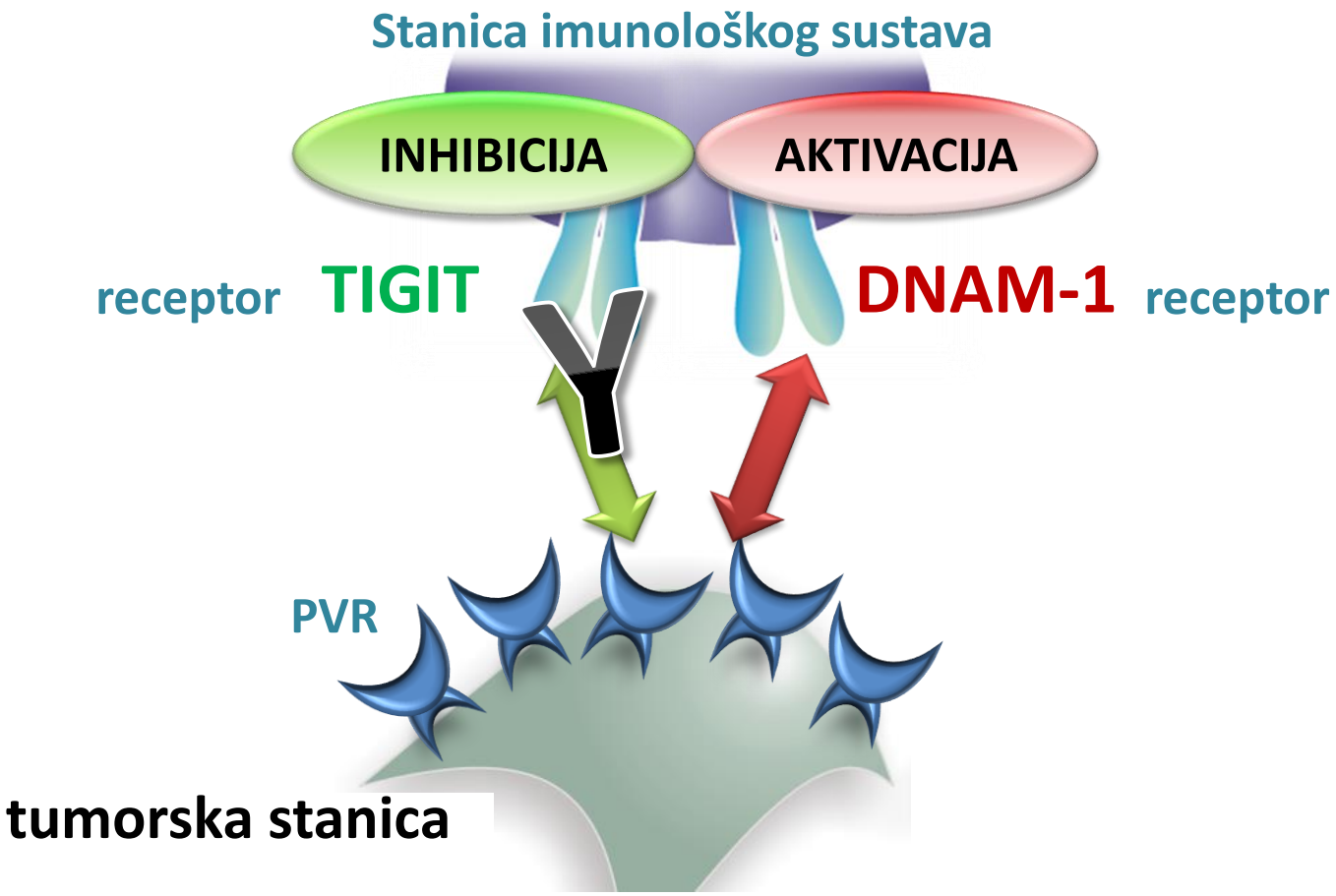
- Upalni monociti i NK limfociti su stanice koje uklanjaju citomegalovirus, putem ključnih molekula koje luče: citokina IFNγ i imunotoksina NO

*(J Exp Med, 2016)*

**Nastamba za laboratorijske životinje:**
Posebni SPF uvjeti čistoće od patogena

- 90 sojeva, 12 000 miševa


Stanica imunološkog sustava
INHIBICIJA
AKTIVACIJA
receptor
TIGIT
DNAM-1
receptor
prepoznavanje
PVR
Tjelesna stanica


Stanica imunološkog sustava
INHIBICIJA
AKTIVACIJA
receptor
TIGIT
DNAM-1
receptor
PVR
tumorska stanica


Hvala djelatnicima Centra za prot