



Nádory a imunitní systém

Blanka Říhová

Mikrobiologický ústav AV ČR, v.v.i.

AMBULANCE



„Takže vy nekouříte? No to je škoda, protože kdybyste kouřil, tak by pomohlo přestat.“



**Může imunitní systém
ovlivnit léčbu nádorů**

Imunitní systém

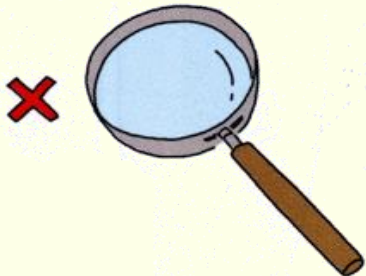
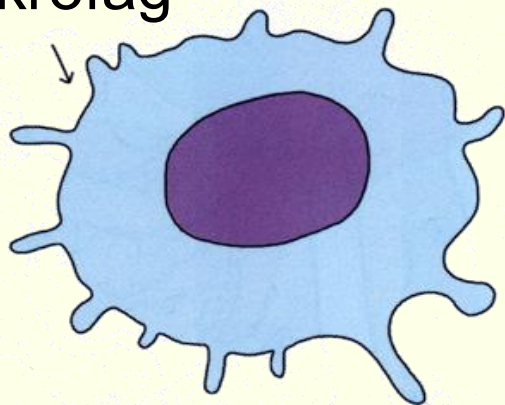
```
graph TD; A[Imunitní systém] -- jako --> B[jedna z příčin nádorového onemocnění]; A --> C[spoluvůrce úspěšné terapie];
```

jako

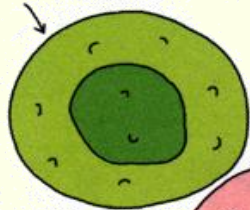
jedna z příčin nádorového
onemocnění

spoluvůrce úspěšné terapie

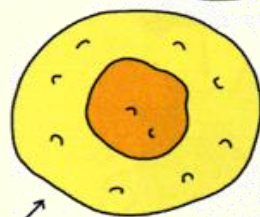
makrofág



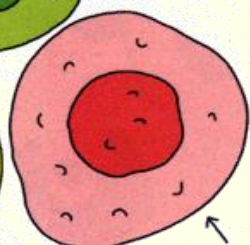
B buňka



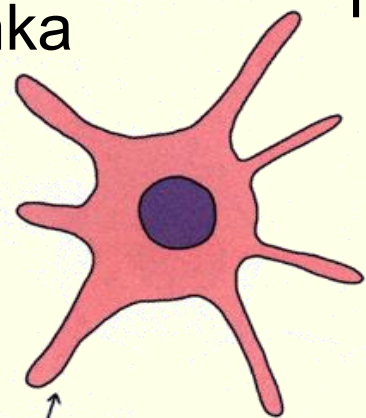
cytotoxická
T buňka

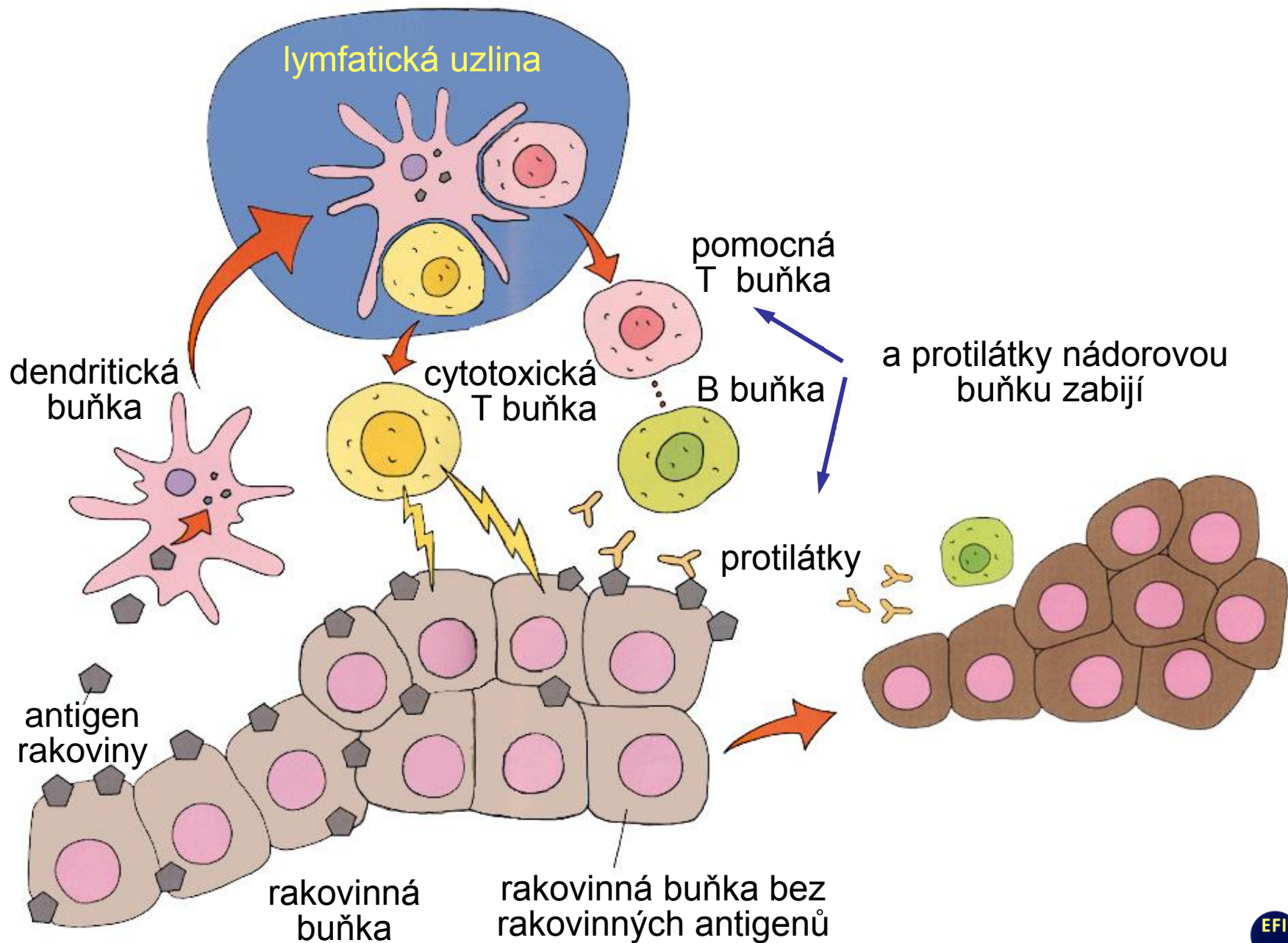


pomocná
T buňka



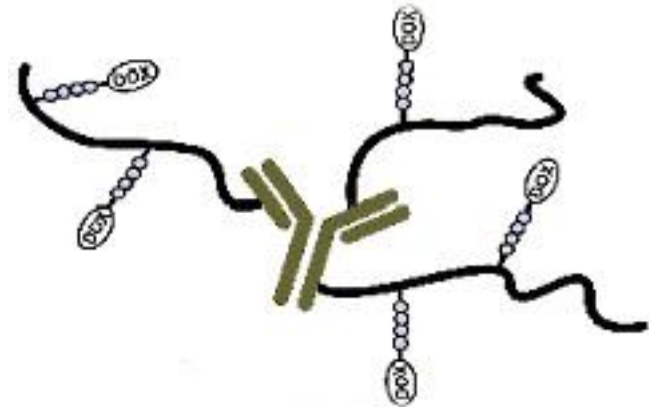
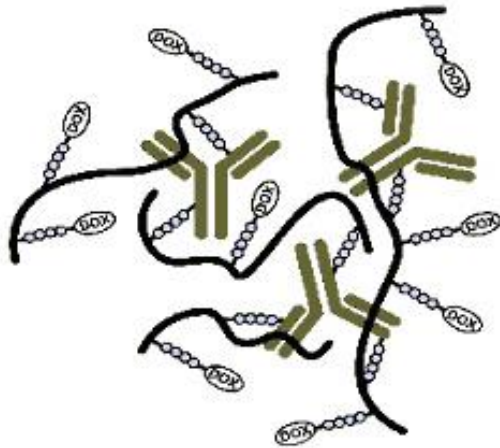
dendritická
buňka



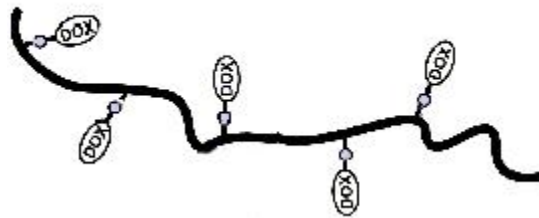


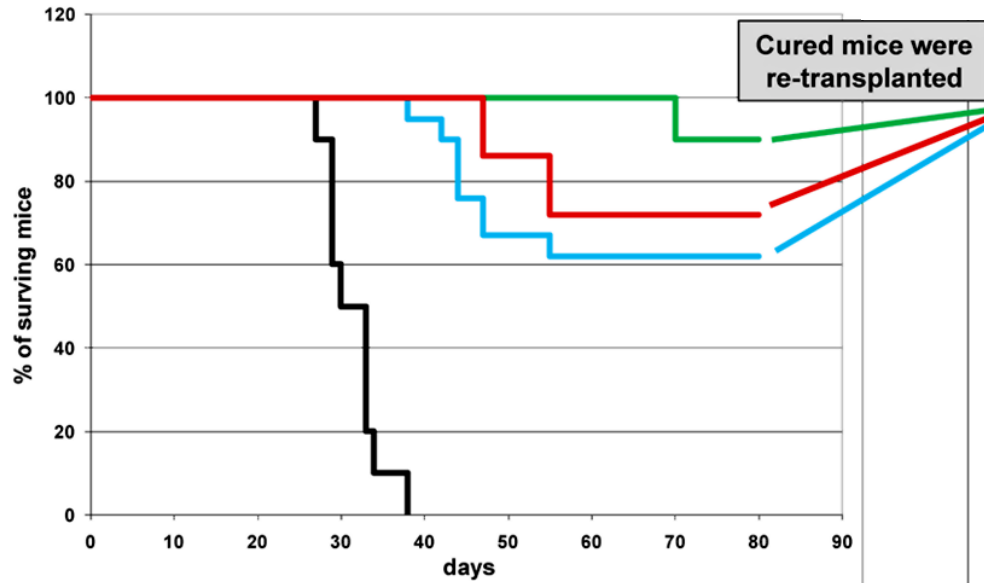
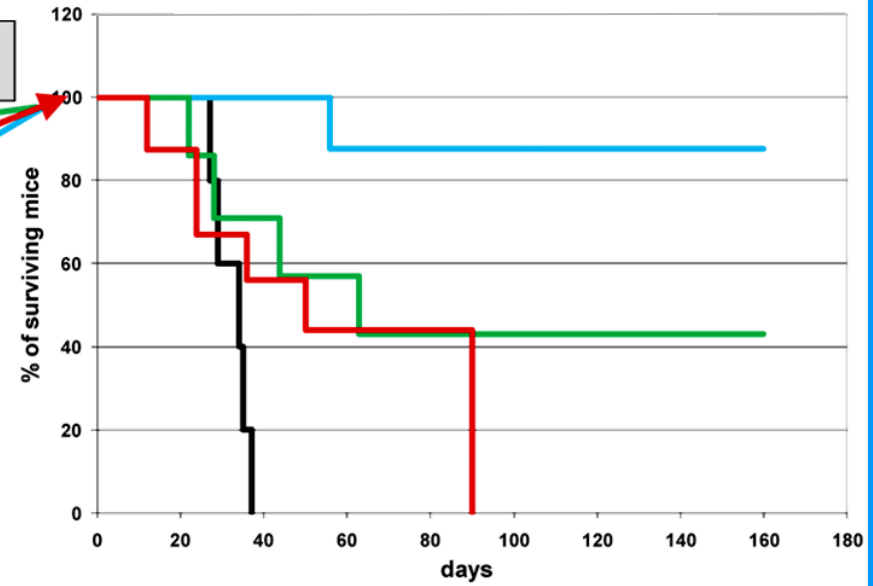
STRUCTURE OF PRODRUGS

PRODRUGS with ACTIVE TARGETING



PRODRUGS with PASSIVE TARGETING



A**Survival of mice – PRIMARY TREATMENT****Dox-HPMA^{HYD}****B****Survival of mice – RE-TRANSPLANTATION****Dox-HPMA^{HYD}**

■ controls

■ 1x75 mg/kg

■ Dox

■ 1x25 mg/kg



**Ochrana před sekundární
nádorovou atakou**





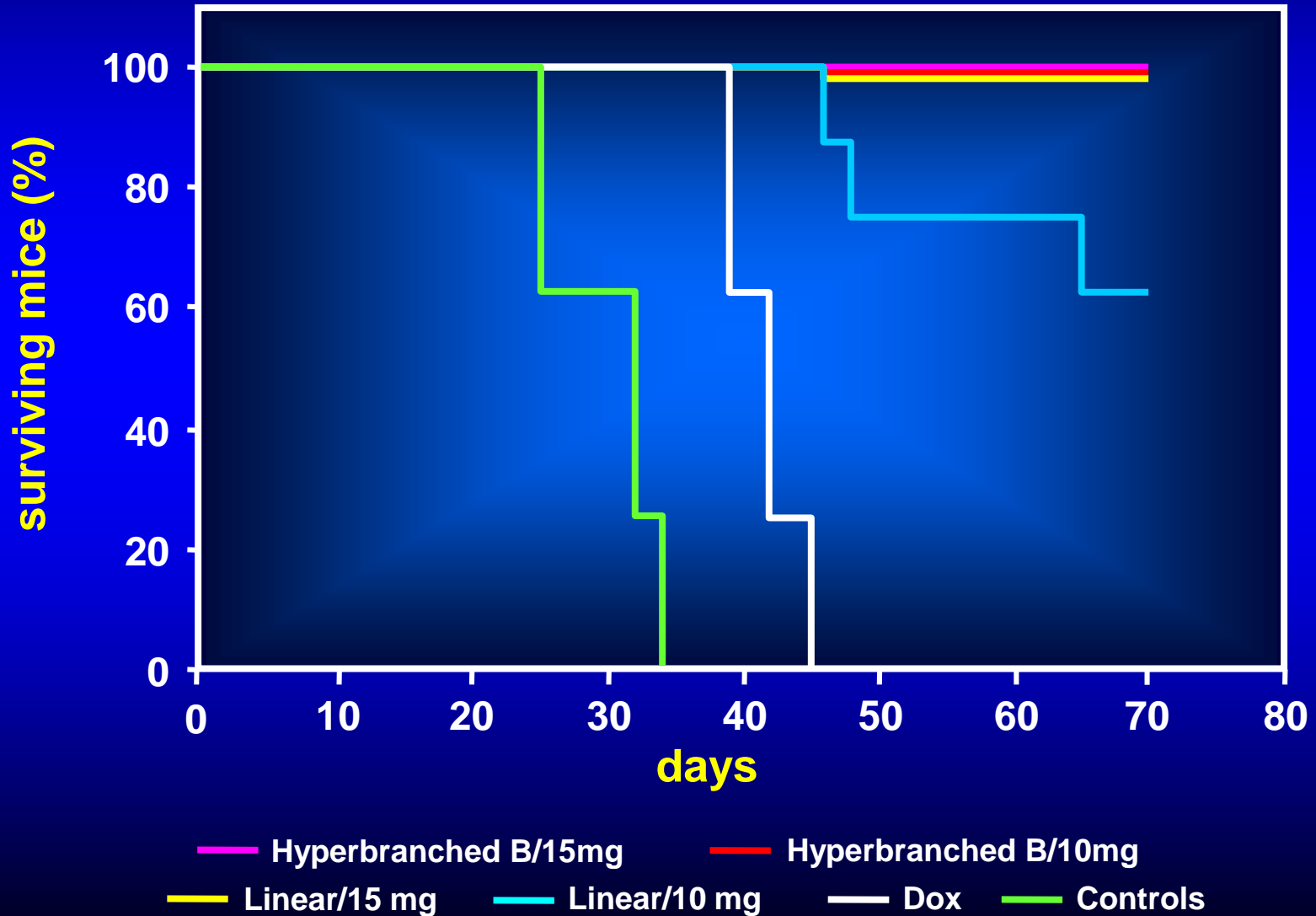
**Therapy-dependent activation of
anticancer immune response by
polymeric therapeutics**

Agresivnější léčba

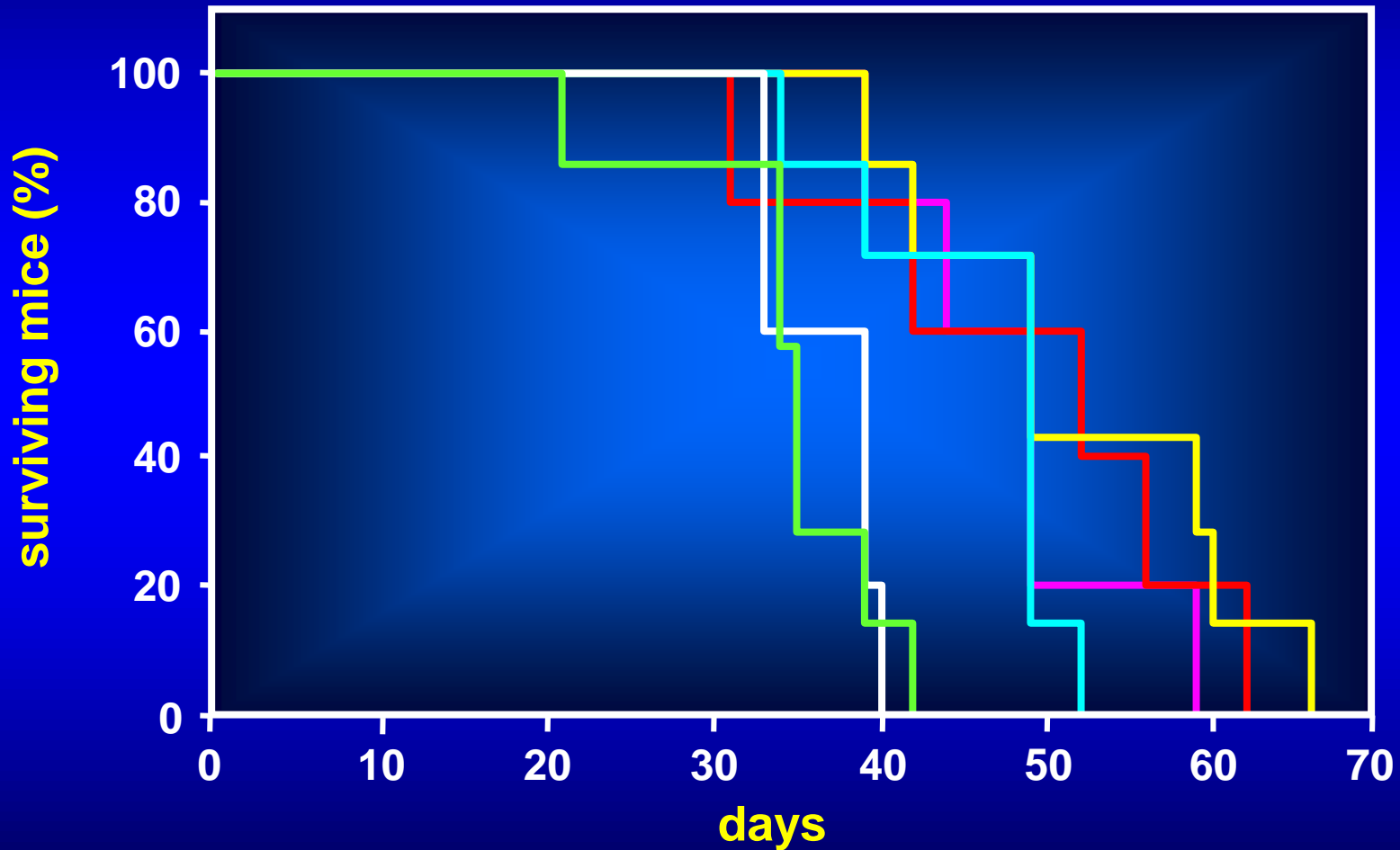


nižší protinádorová resistance

Survival of mice bearing EL4 T cell lymphoma and treated with hyperbranched conjugate B^{HYD} or linear conjugate Dox-HPMA^{AM} - conventional mice

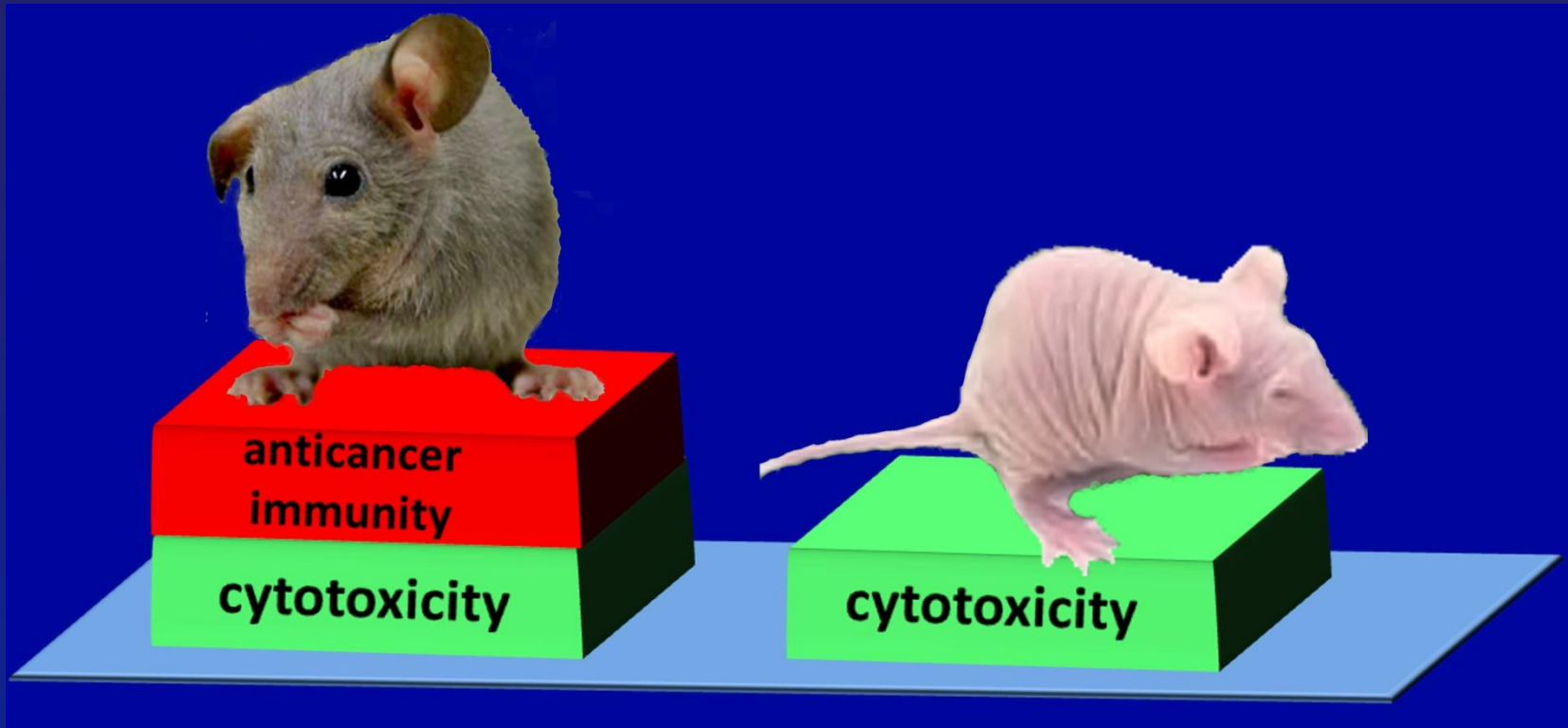


Survival of mice bearing EL4 T cell lymphoma and treated with hyperbranched conjugate B^{HYD} or linear conjugate Dox-HPMA^{AM} - nu/nu mice



— Hyperbranched B/15mg
 — Hyperbranched B/10mg
 — Linear/15 mg
 — Linear/10 mg
— Dox
 — Controls

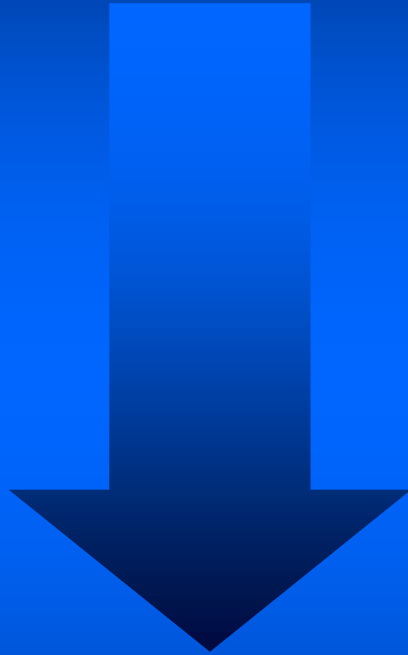
Anti-cancer drug testing



**conventional
mice**

**immunocompromised
mice**

Cytotoxicita a imunomodulace



dvojitý útok na nádorovou buňku při léčbě polymerními cytostatiky

**Navození imunogenní buněčné smrti
*in vivo***

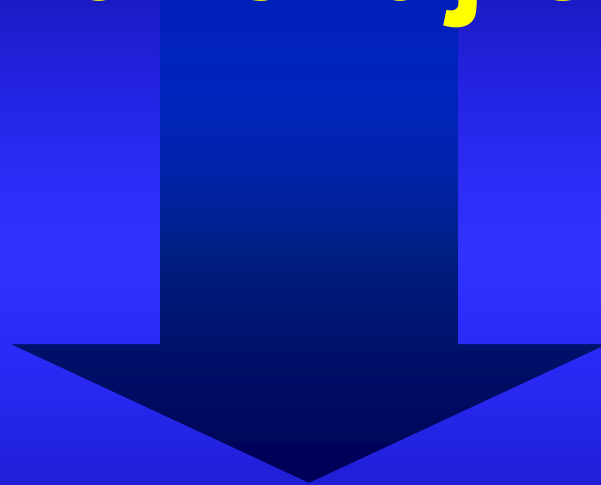


ICD

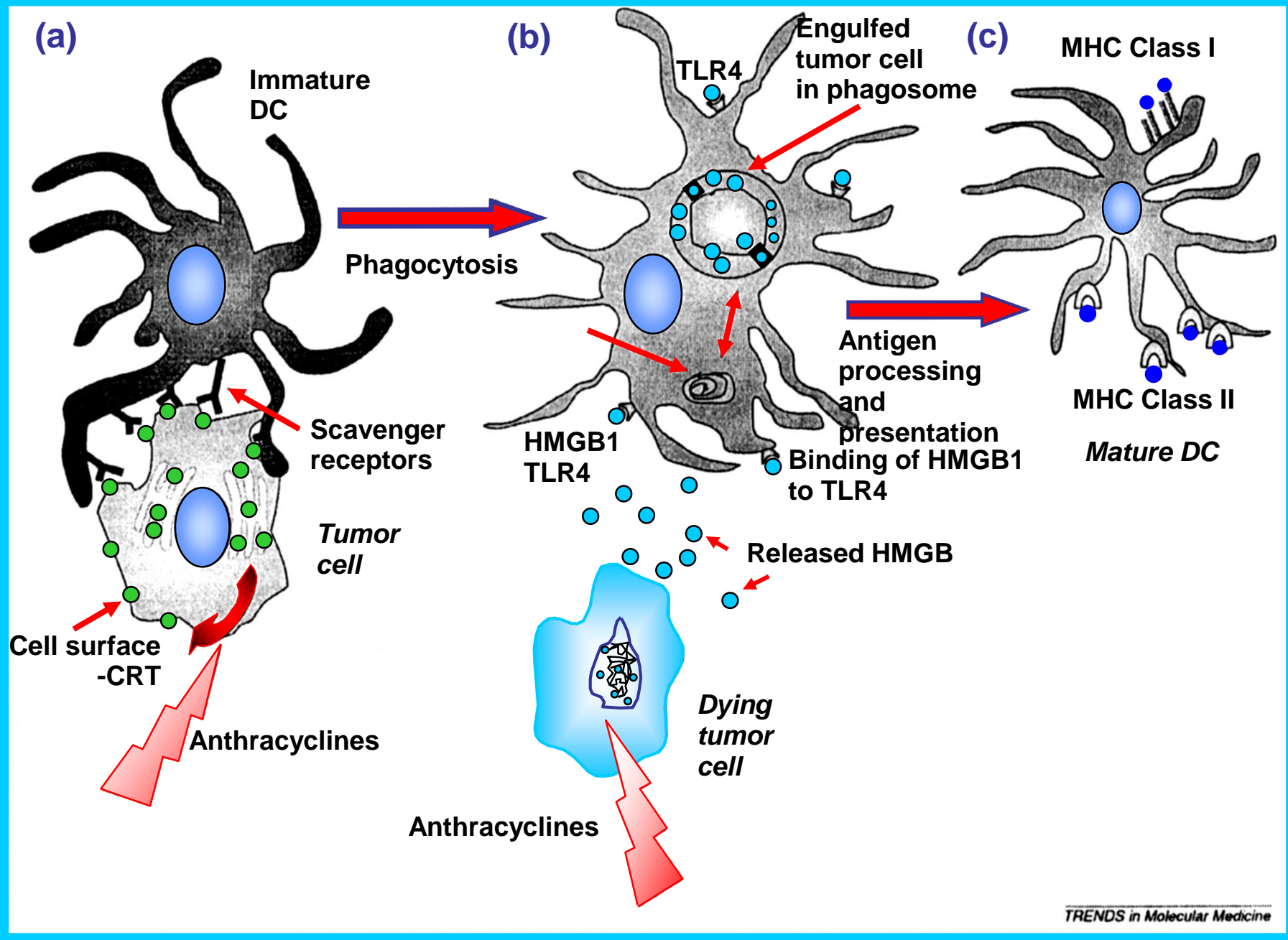
Imunogenní buněčná smrt

Immunogenic Cell Death

léky navozující ICD



ICD inducers



ICD

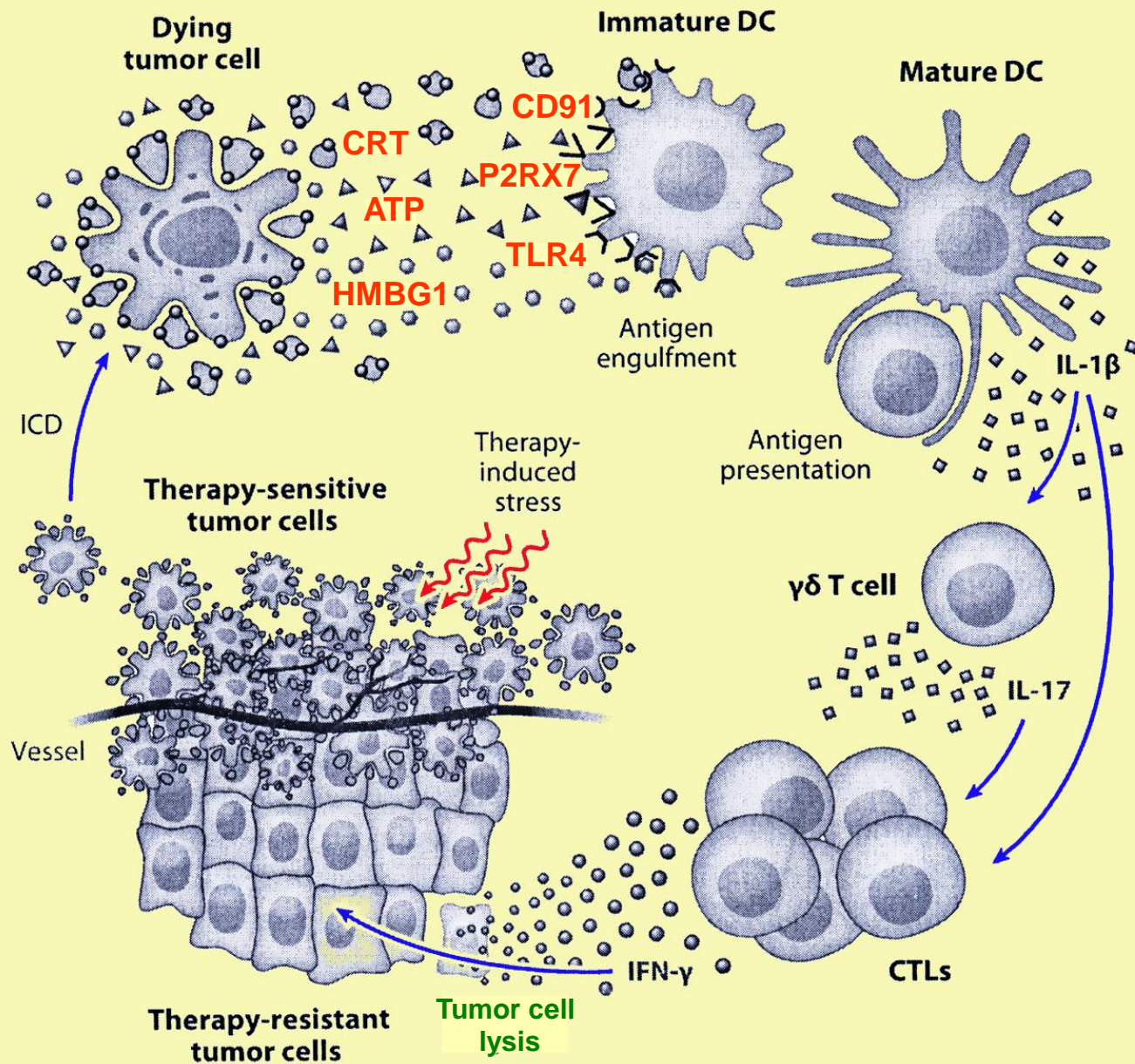
translokace CRT

+

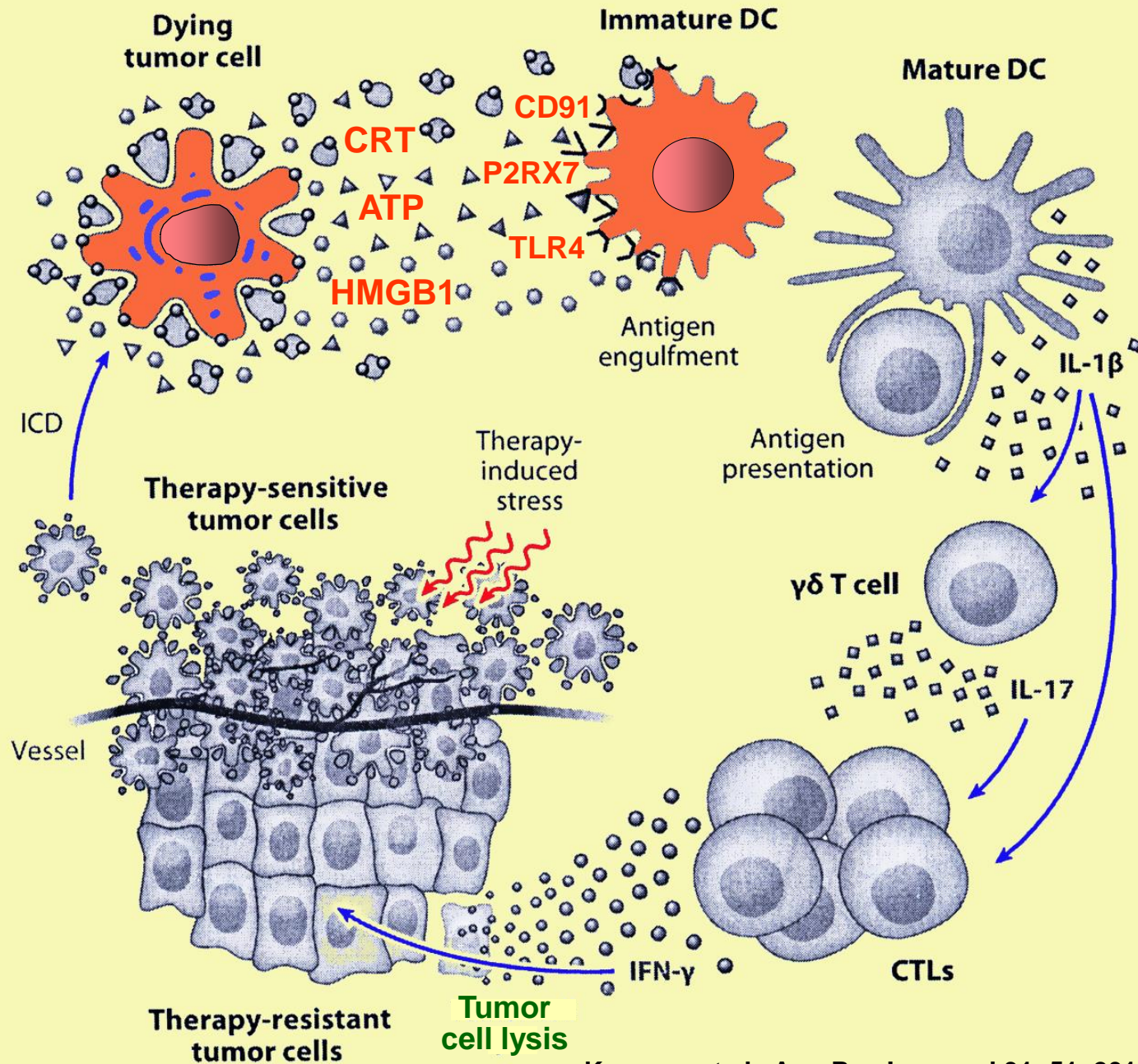
sekrece ATP

+

uvolňování HMGB1 alarminu



- CRT** → **CD91** = fagocytóza
nádorových antigenů
DC
- ATP** → **P2RX7** = akumulace DC v
nádoru
- HMGB1** → **TLR4** = optimální prezentace
antigenů T buňkám



Děkuji



vám!

Protinádorová reakce



cytotoxické T lymfocyty
(CTL)

+

$\gamma\delta$ T buňky



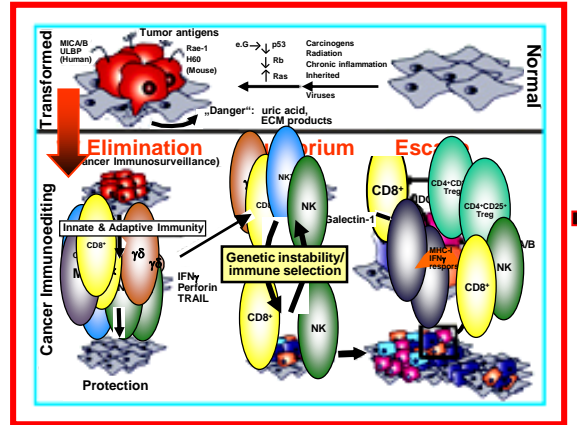
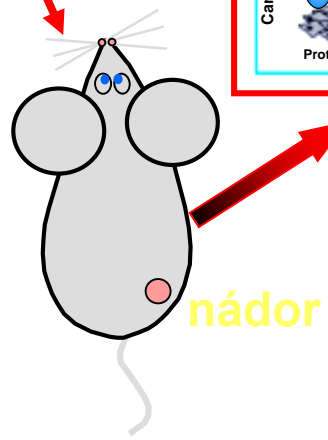
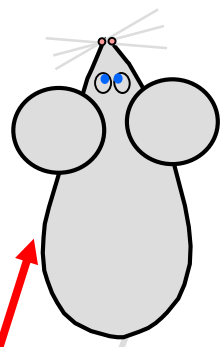
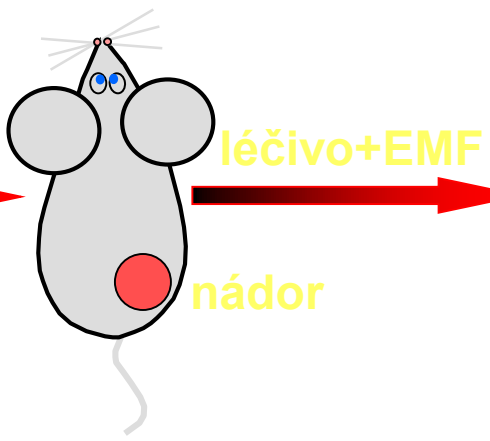
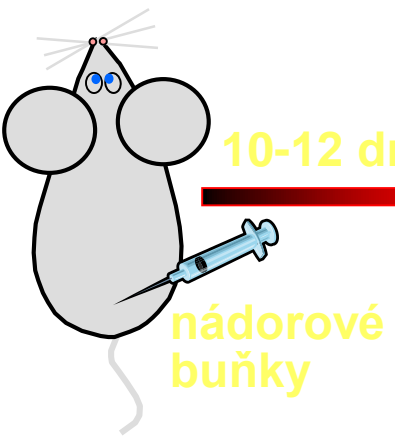
CTL + $\gamma\delta$ T buňky

*** jsou dependentní na IL - 1 β a IL-17**

*** reakci uskutečňují pomocí IFN - γ**



Premortem stress endoplasmatického retikula



4 měsíce

