



Raznolikost *DRB* lokusa MHC gena skupine II u divokoza (*Rupicapra* spp.)

Sunčica Stipoljev

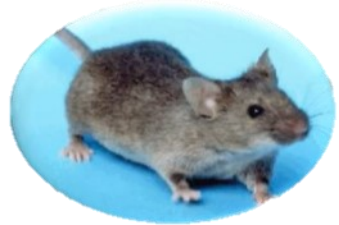
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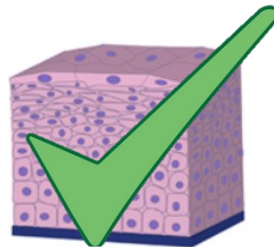
Glavni sustav tkivne podudarnosti (Major histocompatibility complex)

- Otkriven kao gen. lokus koji određuje da li će se transplantirano tkivo prihvatiti ili odbaciti

Donor



Recipient

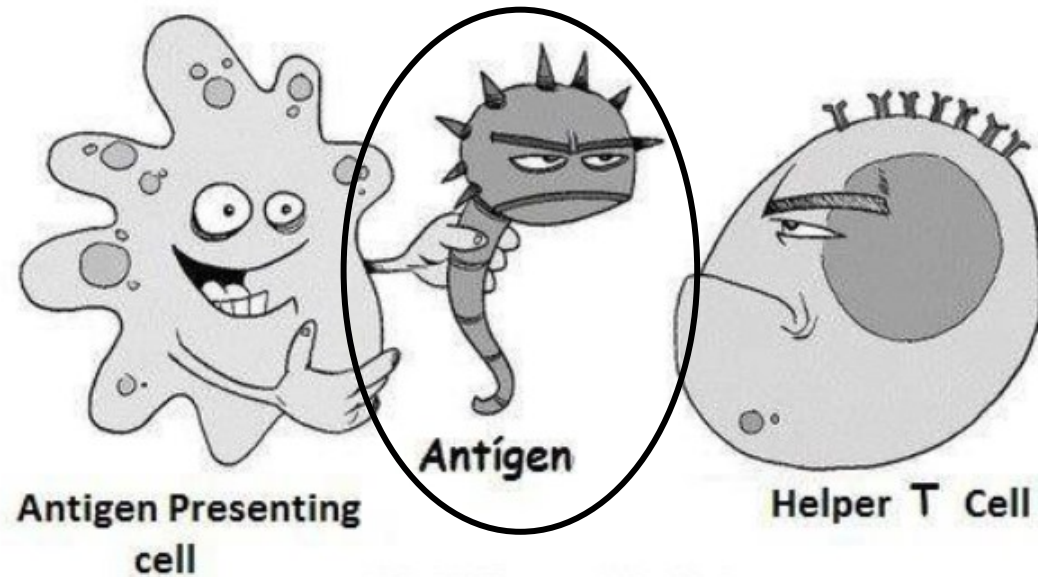


- Transplantacija organa nije prirodna biološka pojava – nije mogao evoluirati zbog te funkcije
- Danas se zna fiziološka funkcija MHC molekula



Funkcija MHC molekula

- **adaptivni imuni odgovor**
- transport antigena na površinu stanica, gdje ih T stanice mogu pregledavati i po potrebi reagirati



Red Queen hypothesis



“It takes all the running you can do, to keep in the same place.”

- koevolucija domaćina i patogena

2 odlike MHC-a:

POLIMORFNOST
POLIGENOST

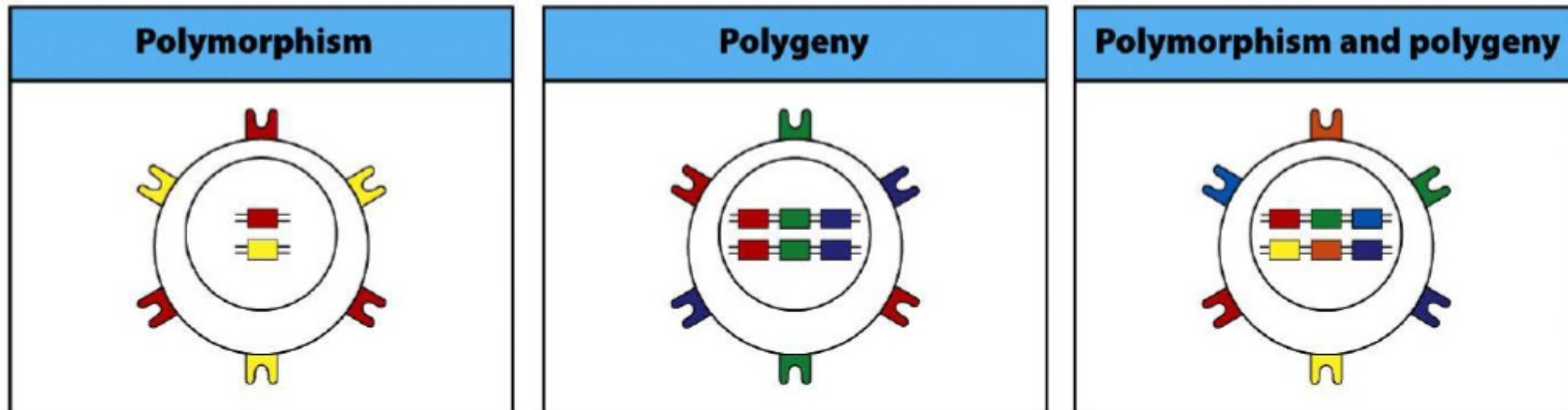
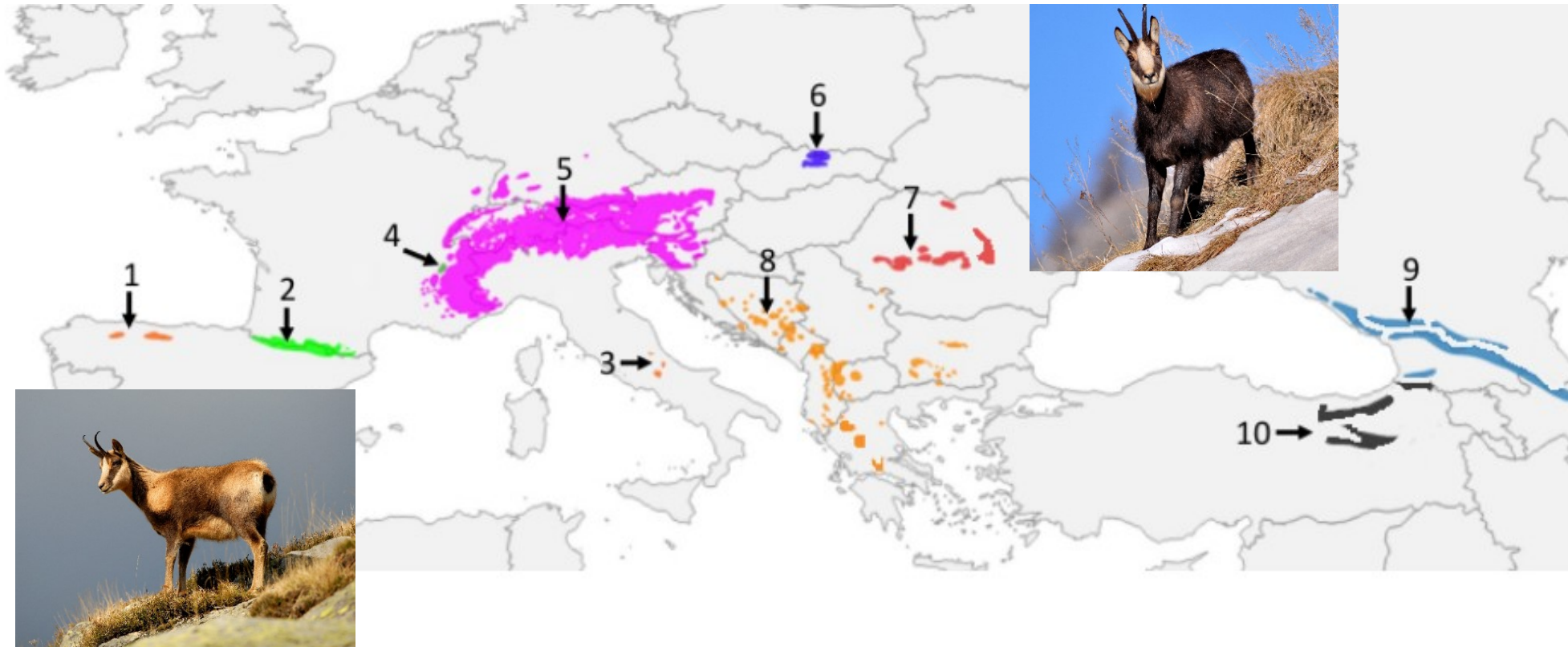


Figure 5-16 Immunobiology, 7ed. (© Garland Science 2008)

Divokoza *Rupicapra* spp.



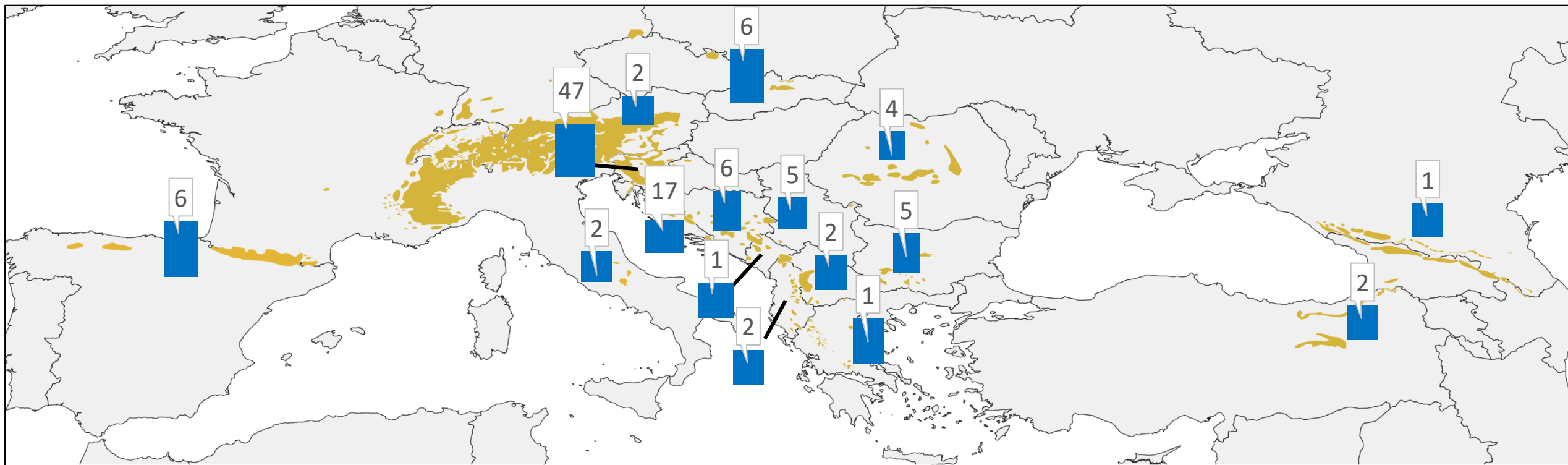
R. pyrenaica

- 1 – *parva*
- 2 - *pyrenaica*
- 3 - *ornata*

R. rupicapra

- | | | |
|-----------------------|----------------------|----------------------|
| 4 – <i>cartusiana</i> | 7 – <i>carpatica</i> | 10 - <i>asiatica</i> |
| 5 - <i>rupicapra</i> | 8 - <i>balcanica</i> | |
| 6 - <i>tatrica</i> | 9 - <i>caucasica</i> | |

Broj uzoraka



Ion Torrent sekvenciranje (Next Generation Sequencing)

PCR

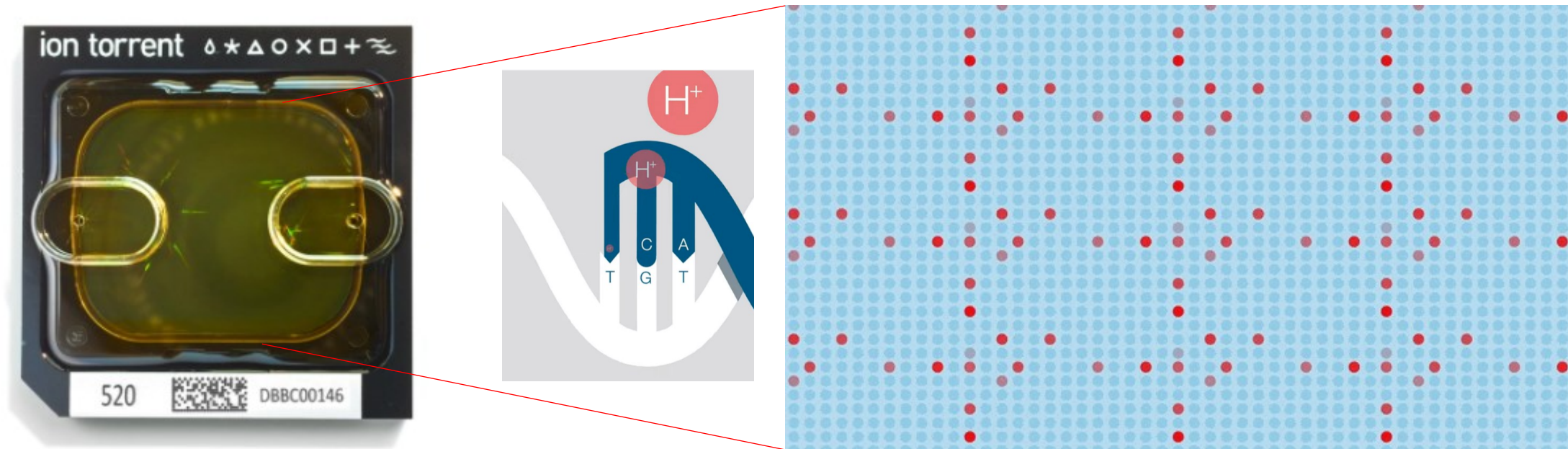


DNA sekvenciranje



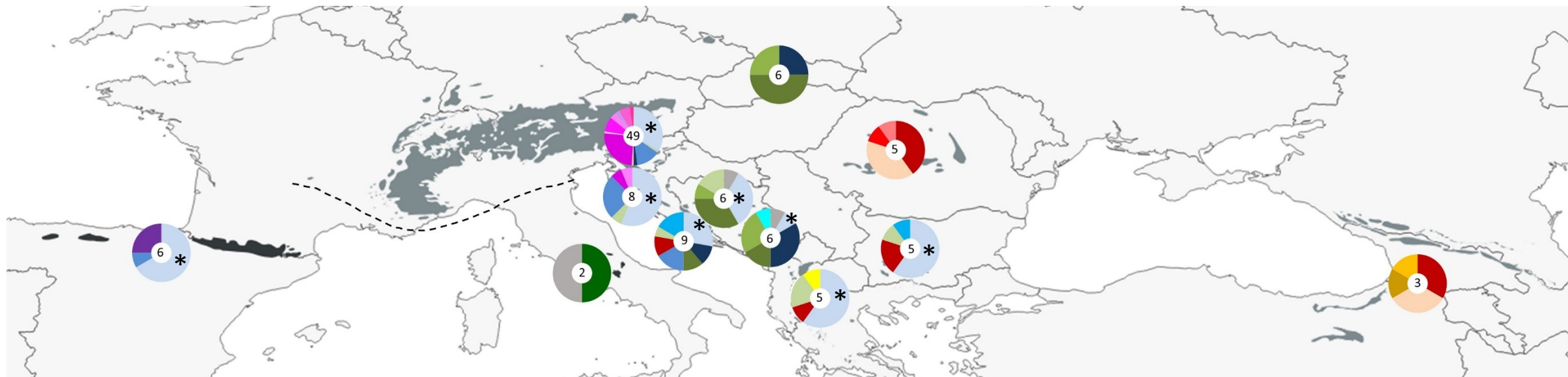
Ion Torrent S5

Masivno paralelno sekvenciranje

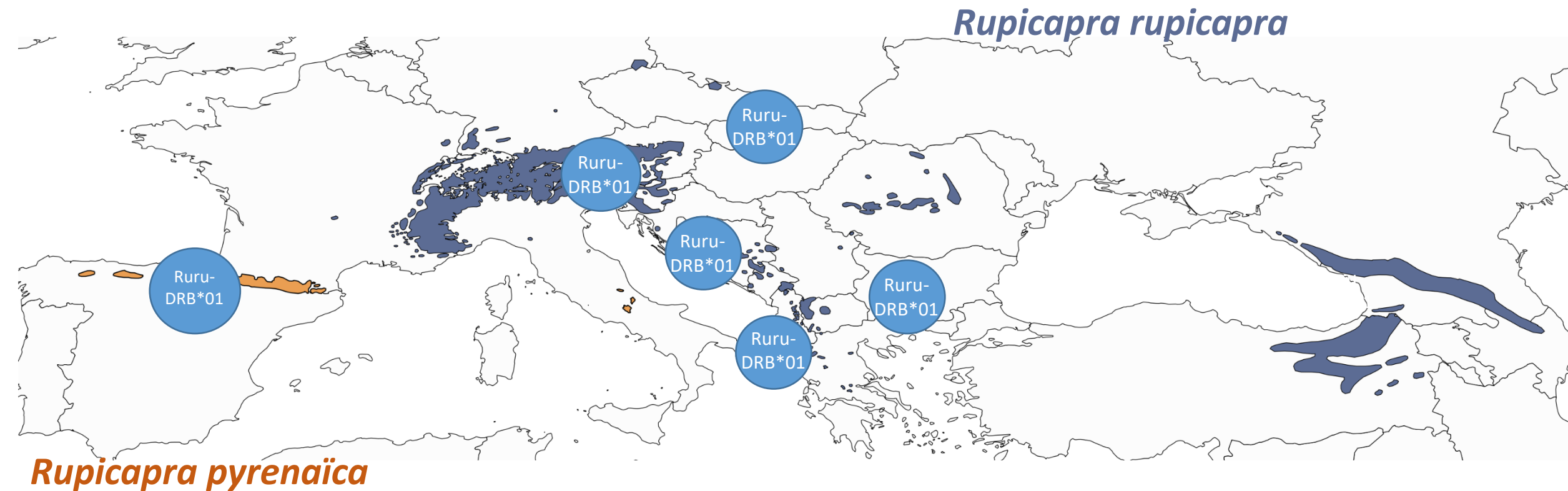


Ion Torrent chip

Raznolikost MHC alela u divokoze



Trans-specijski polimorfizam



Kvantificiranje selekcijskog pritiska

Različite MHC molekule vežu različite peptide

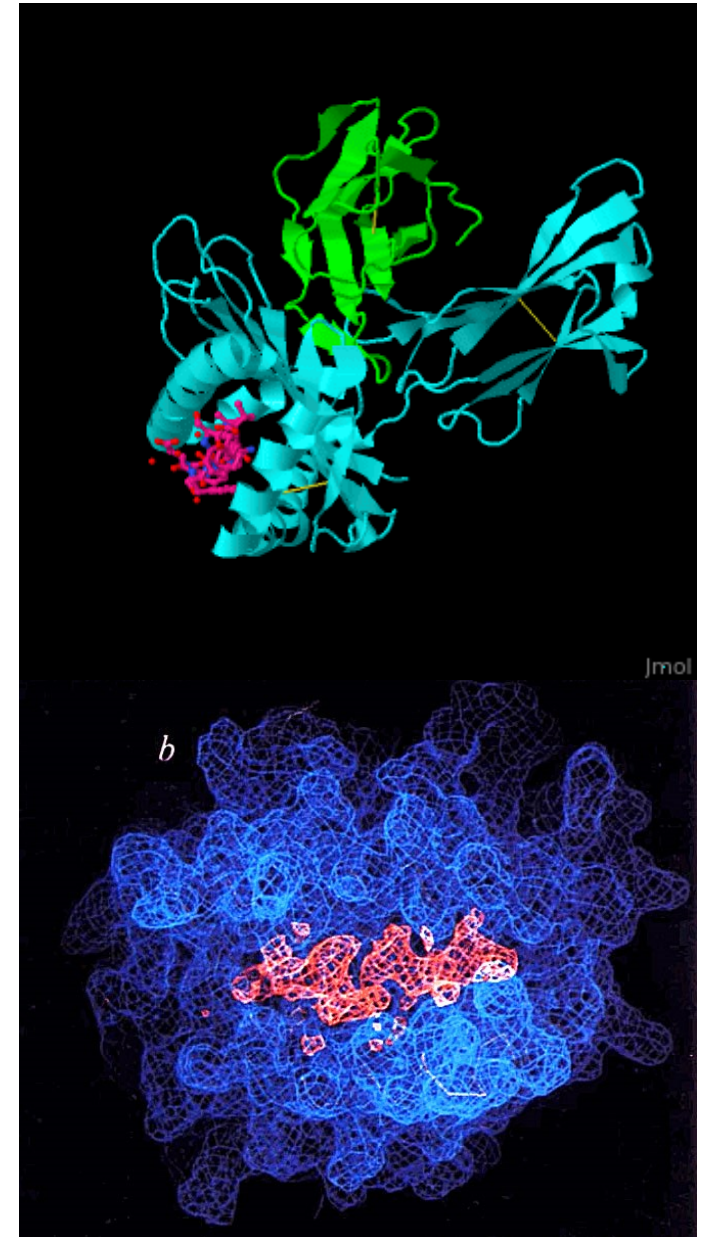
➤ aminokiseline koje tvore utor

dS	dN	dN/dS	P
0.003	0.05	16.67	<0.001

≈ 1 neutralna evolucija

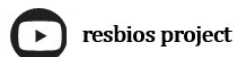
< 1 negativna selekcija

> 1 pozitivna selekcija



*Dragi kolege,
hvala Vam na pažnji! 😊*

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The ResBios logo is a large, stylized letter 'B' with a colorful gradient from purple at the top to yellow at the bottom. Inside the 'B', there are three white circles connected by lines, resembling a molecular structure. The text 'ResBios' is written in white across the middle of the 'B'.

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HRZZ

Croatian Science
Foundation



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