

# ***Molecular Immunology***

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# *Immunology*

- ◆ Is a milestone in the 3 pillars of Health research:
  - ◆ Biotechnology, generic tools
  - ◆ Translating research for human health
  - ◆ Optimizing delivery of healthcare

# ***Aim of this talk***

- ◆ **Introduce the EAI, MIU-Azhar**
- ◆ **Key problems**
- ◆ **Key solutions**

# ***The Egyptian Association of Immunologists***

- ◆ A national network of aprx. 300 immunologists in various disciplines/ institutions
- ◆ Member of the IUIS
- ◆ The Egyptian Journal of Immunologists is listed on the Pubmed.
- ◆ Website: [www. ejimmunology.tripod.com](http://www.ejimmunology.tripod.com)

# *Key problem with EAI*

- ◆ Lack of resources to pursue training of researchers
- ◆ Primitive website
  - ◆ Not contributing to scientific update of researchers
  - ◆ Not contributing to health education of patients and community.

# *The MIU-Azhar*

- ◆ Located at the Faculty of Medicine for Girls, Al-Azhar U.
- ◆ Its official Journal is the “Molecular Diagnosis & Vaccines”
  - ◆ [www.fmg-azhar.edu.eg](http://www.fmg-azhar.edu.eg)
  - ◆ [miu@menanet.net](mailto:miu@menanet.net)

# ***MIU areas of interest***

- ◆ Cellular immunology
- ◆ Antibody technology and assay development
- ◆ Immune modulation, pathogenesis, and vaccine development
- ◆ Autoimmunity, Cancer
- ◆ Molecular epidemiology
- ◆ Microbial genetics & drug resistance

# *Laboratory skills*

- ◆ Multi parameter Flow cytometry
- ◆ Tissue culture
- ◆ T cell cloning
- ◆ Elispot assay
- ◆ T cell proliferation assay
- ◆ CTL assay\ Apoptosis assay
- ◆ Cytokine & antibody ELISA
- ◆ Immunohistochemistry and IF

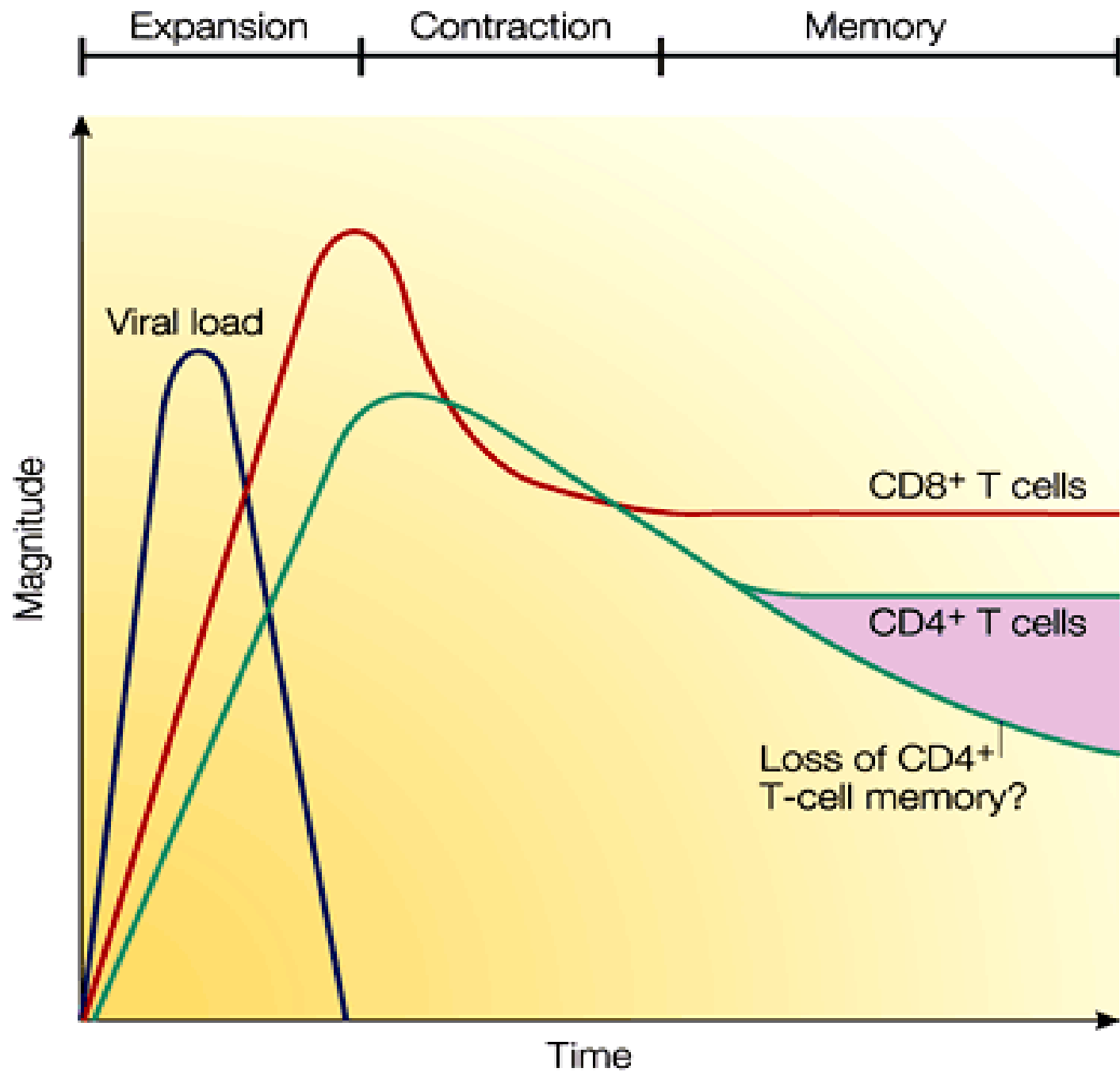


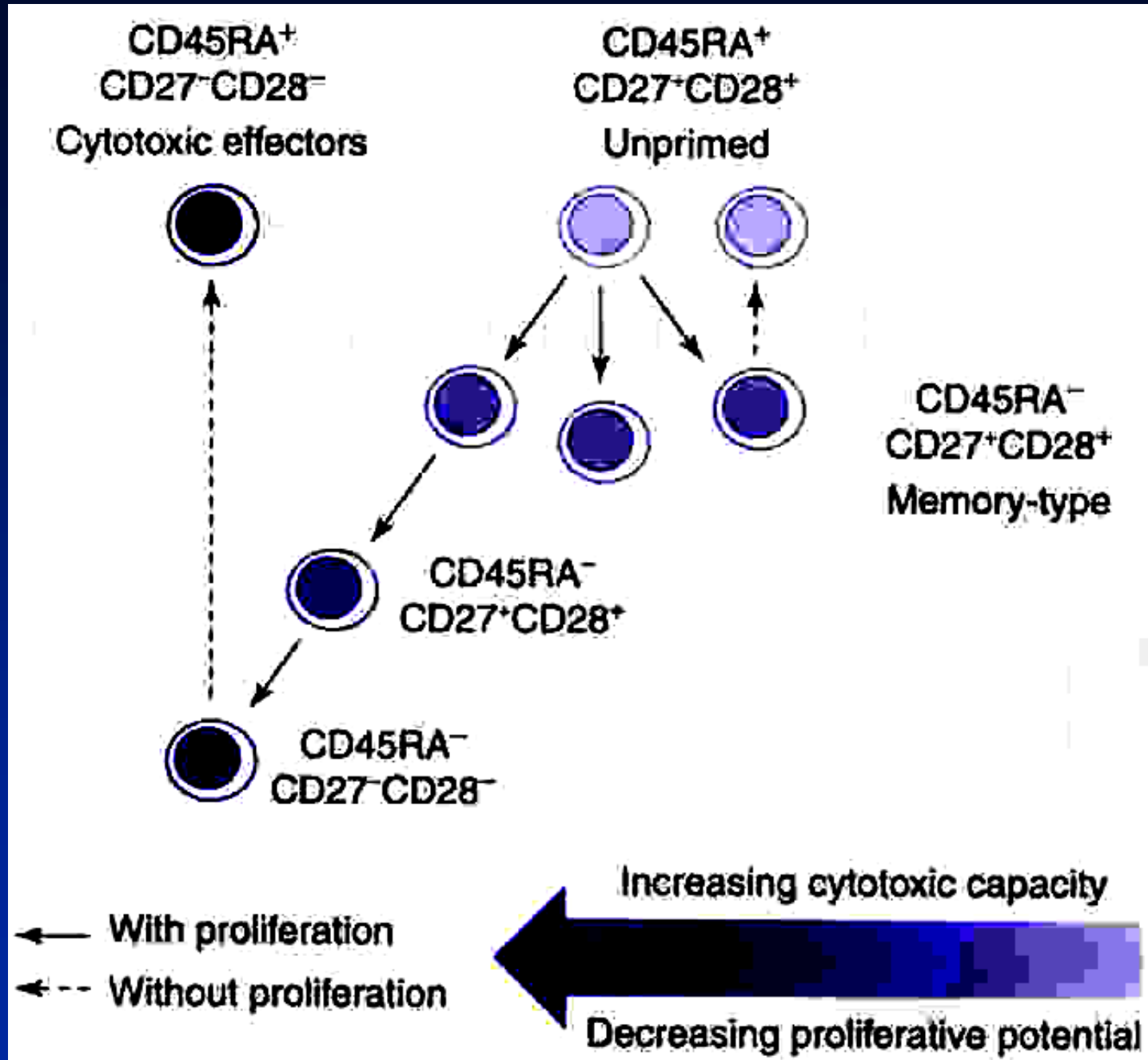
# *Lab skills cont'*

- ◆ RFLP
- ◆ PFEPH
- ◆ RT-PCR
- ◆ Western Blots
- ◆ DNA sequencing
- ◆ DNA cloning
- ◆ Virus neutralization assay
- ◆ In situ hybridization

# *Hepatitis C*

- ◆ T-regs
- ◆ Memory cells
- ◆ We demonstrated evidence for in vivo modulation of a specific subset of HCV-specific memory T cells by a parasitic co-infection.





# ***Tuberculosis***

- ◆ Protection/ Susceptibility markers to TB
- ◆ Molecular epidemiology of TB
- ◆ Molecular Characterization of drug resistance isolates
- ◆ Assessment of recombinant candidate vaccines

# *Schistosomiasis*

- ◆ Cytokines/ Adhesion molecules interactions.
- ◆ In vitro granuloma model
- ◆ Characterization of recombinant vaccine candidates
- ◆ Vaccine testing in animals

# *Needs*

- ◆ Excellence research requires not only a research program of the highest caliber, but also dedication to the education and training of researchers of the future.
- ◆ We need to develop and sustain a **Regional Program** of research and training in immunology

# ***Needs cont'***

- ◆ We need to improve the networking capacity of the immunology researchers.
  - ◆ Maintain websites
  - ◆ Partnership with similar communities
  - ◆ Access to databases
  - ◆ Raise awareness on future sciences