Presenter Disclosure Information

Richard C. Wu

The following relationships exist related to this presentation:

No relationship to disclose

Identification of a Novel $CD8^+CD57^+$ T-cell Subset in Melanoma Exhibiting An Incompletely Differentiated CTL Phenotype

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Session on Human Immunology

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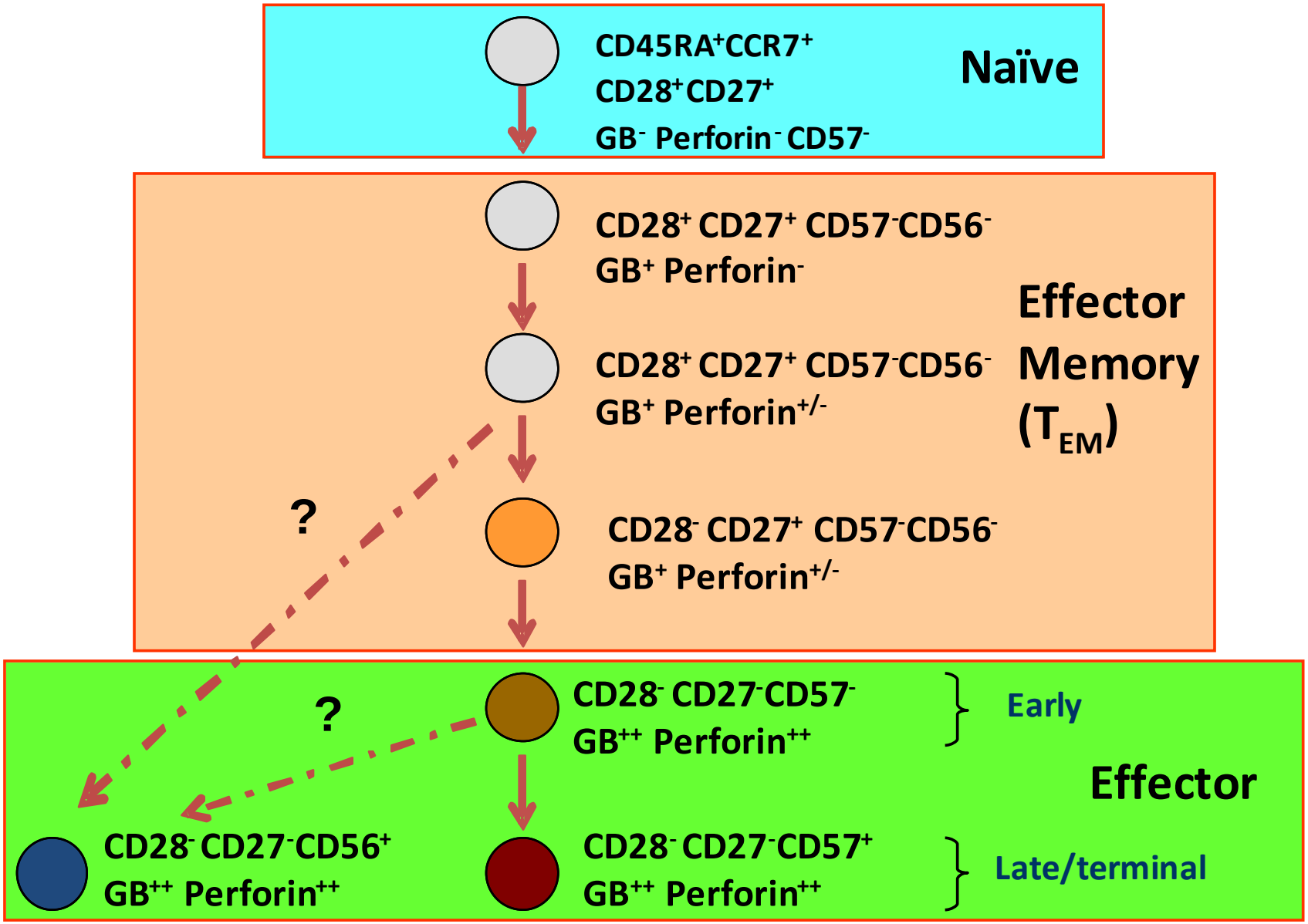
Introduction

- **$CD8^+$ cytotoxic T lymphocytes (CTL) play a critical role in anti-tumor immunity. They are an essential component of TILs.**
- **Composition of $CD8^+$ TILs is not homogeneous, but rather represents varying contributions from different subsets.**
- **Understanding the phenotypic and functional characteristics of different subsets of anti-tumor $CD8^+$ T cells is important in understanding the mechanism of action of cancer vaccines and adoptive T-cell therapy.**

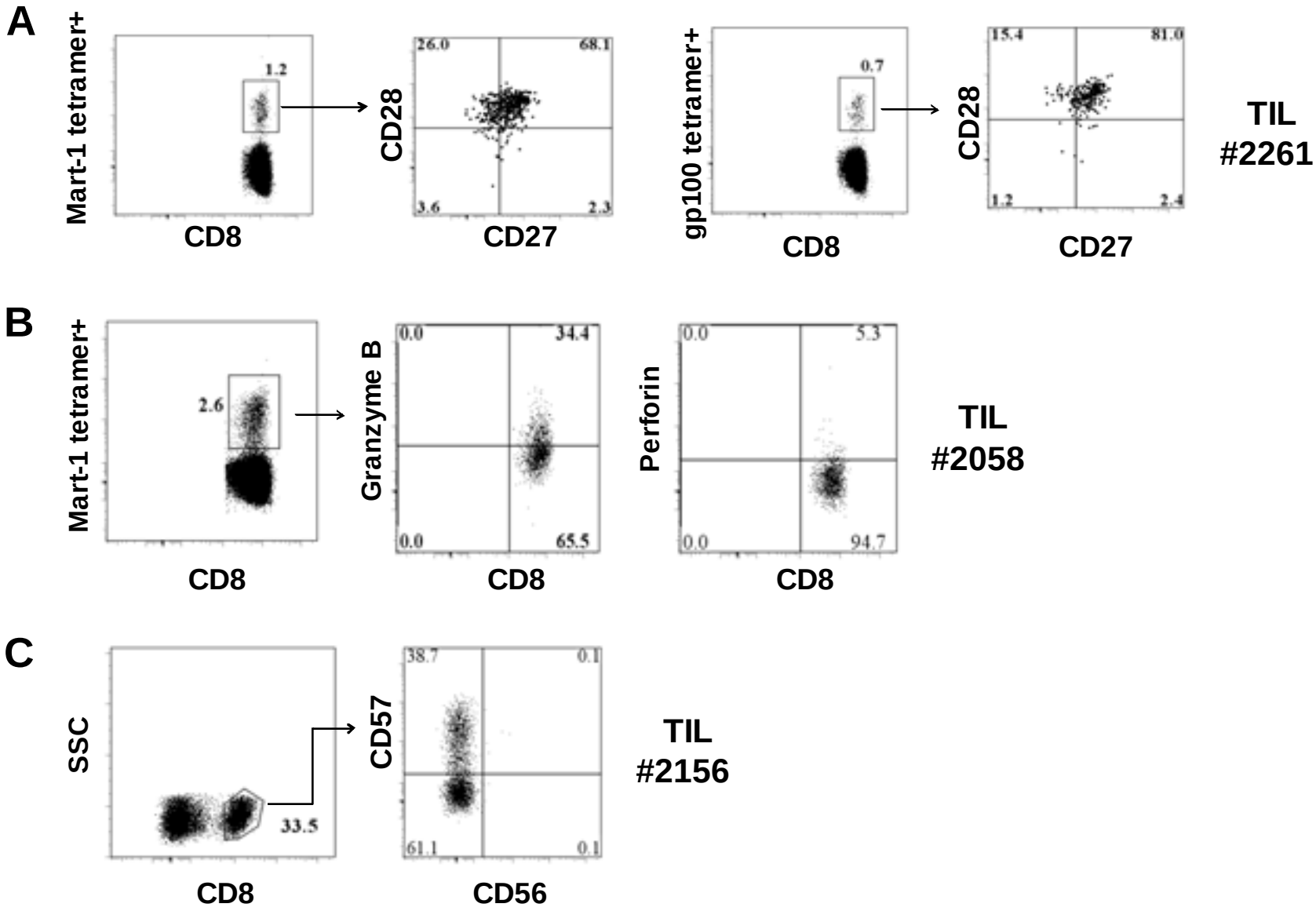
A working model for $CD3^+CD8^+$ antigen-specific T-cell differentiation



Key Questions

- **What are the phenotypic and functional characteristics of different $CD8^+$ T-lymphocyte subsets in TILs?**
- **How do these characteristics of $CD8^+$ TILs fit in with current models of $CD8^+$ CTL differentiation?**
- **Which subsets of $CD8^+$ TILs have the most potent killing activity against cancer cells?**

Freshly-isolated melanoma CD8+ TILs mainly reside in the early effector-memory (T_{EM}) subset



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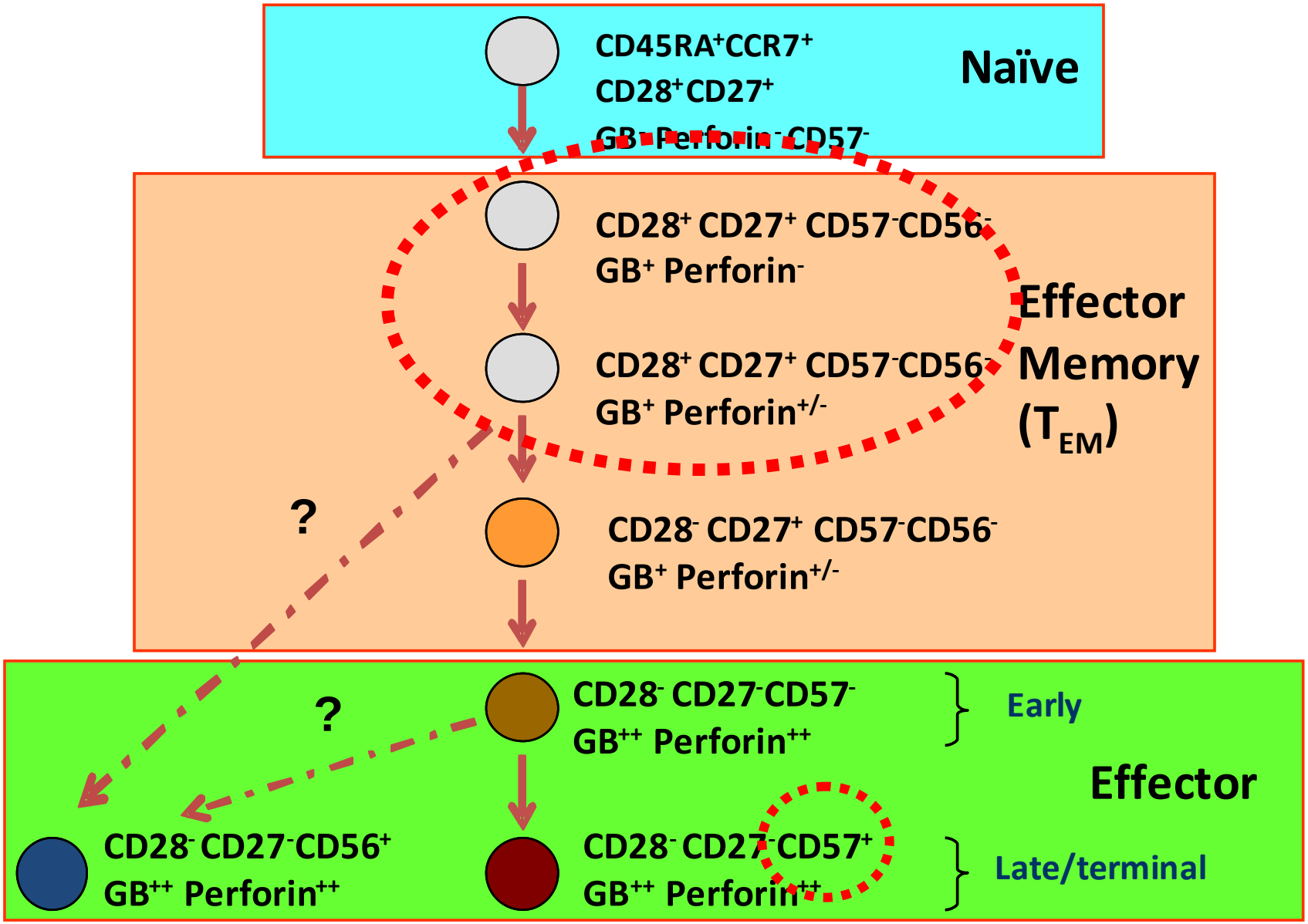
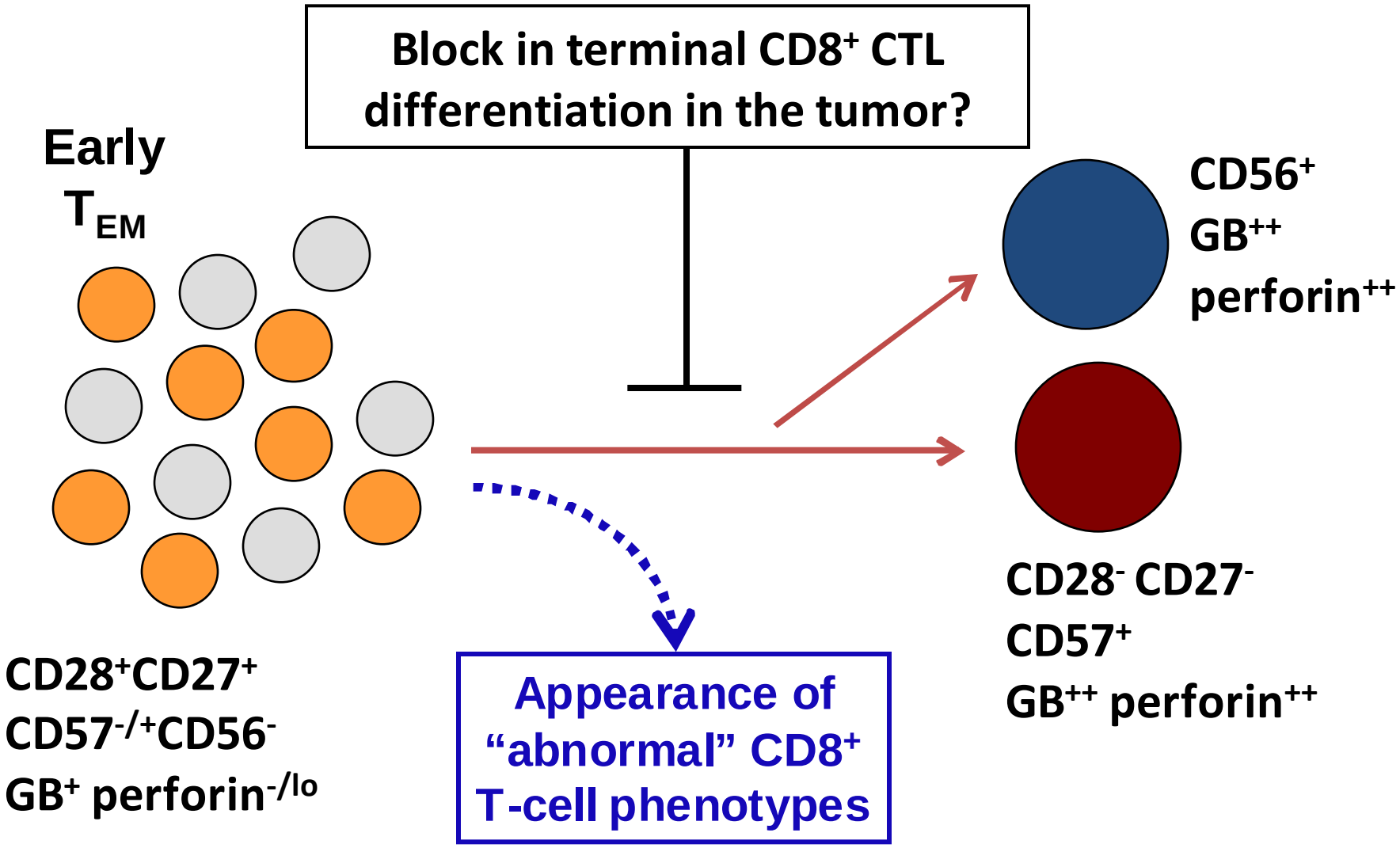
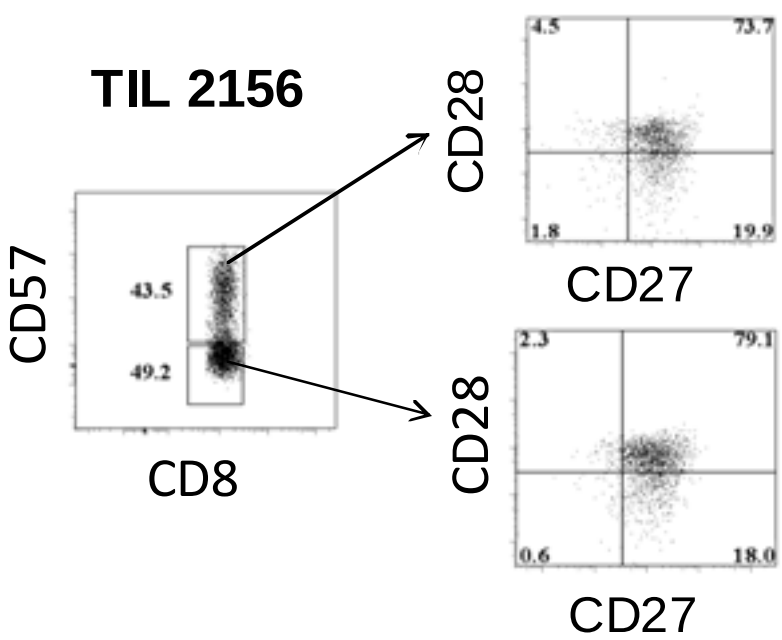
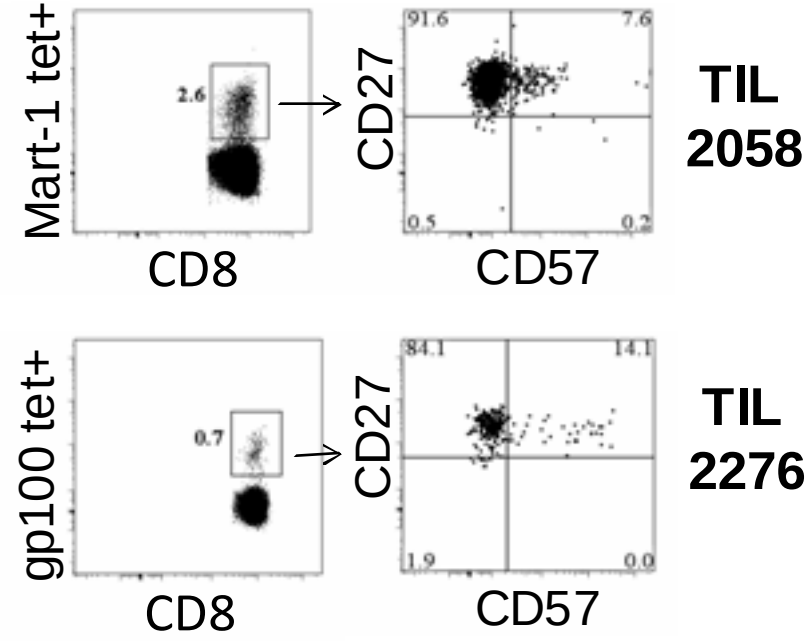


Working Hypothesis



Presence of CD8$^+$ CD27$^+$CD28$^+$ lymphocytes co-expressing CD57 in metastatic melanomas





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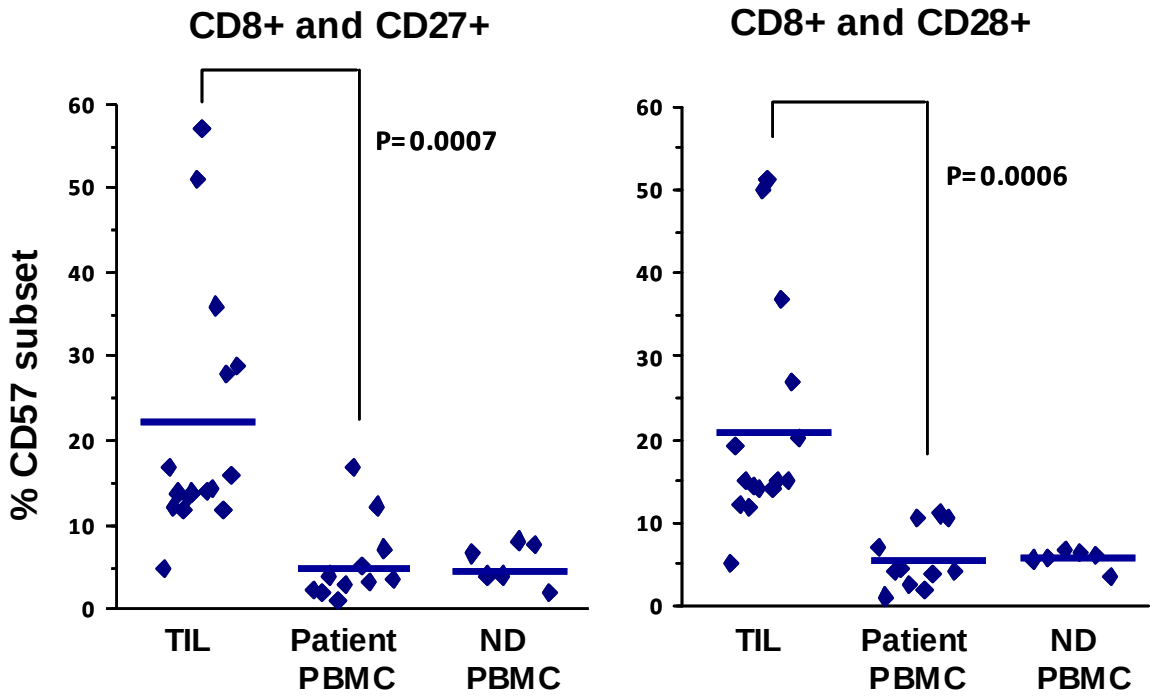
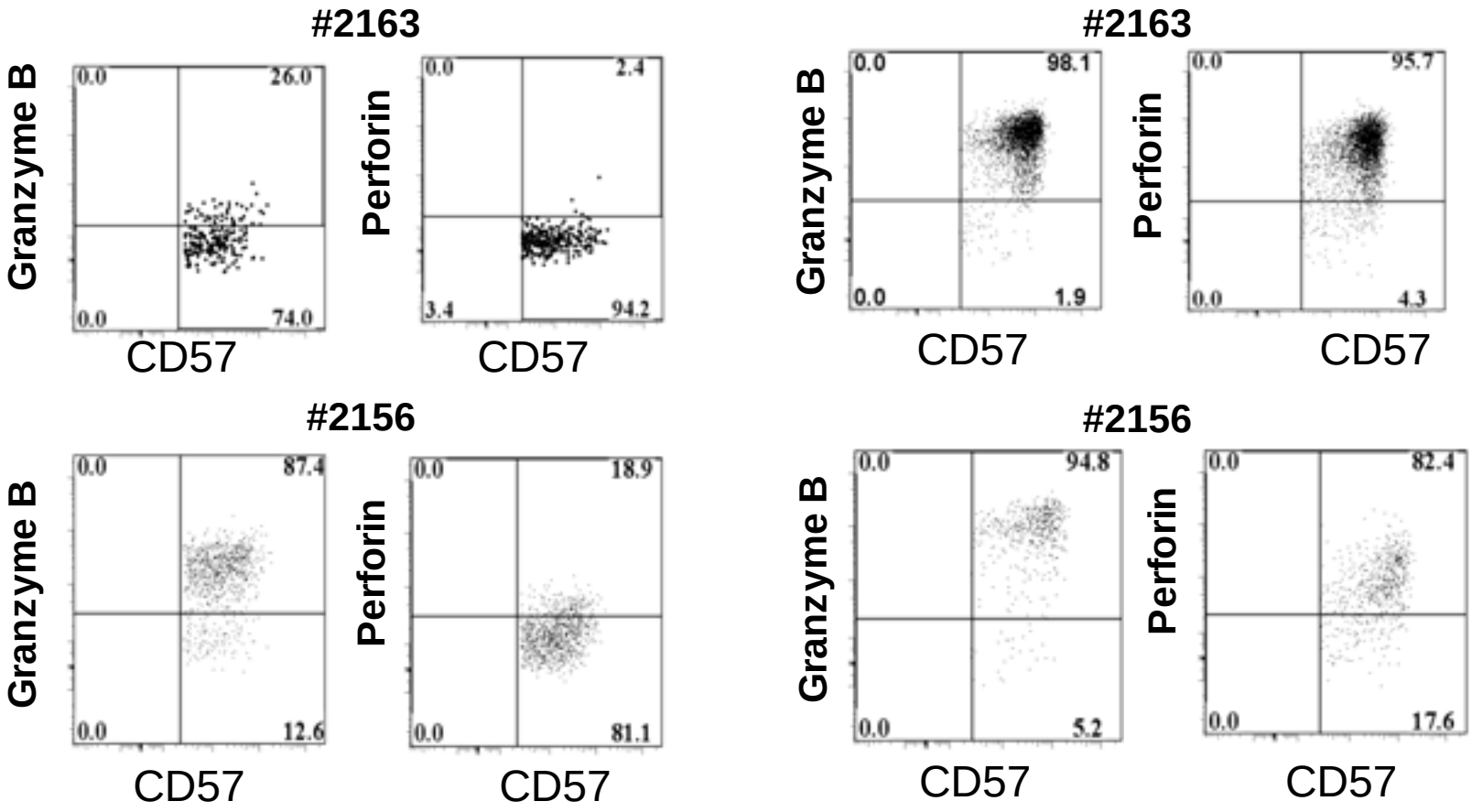
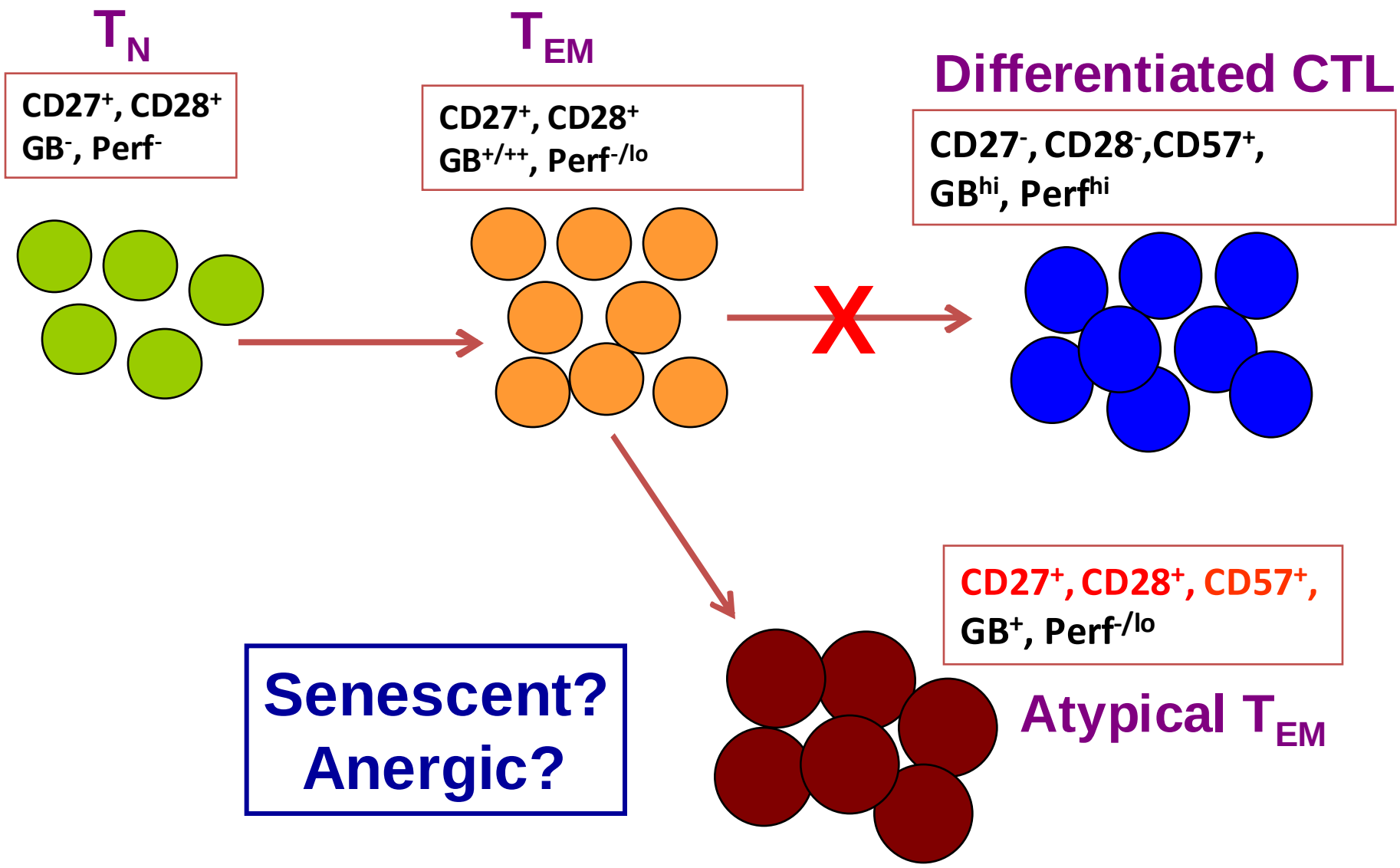


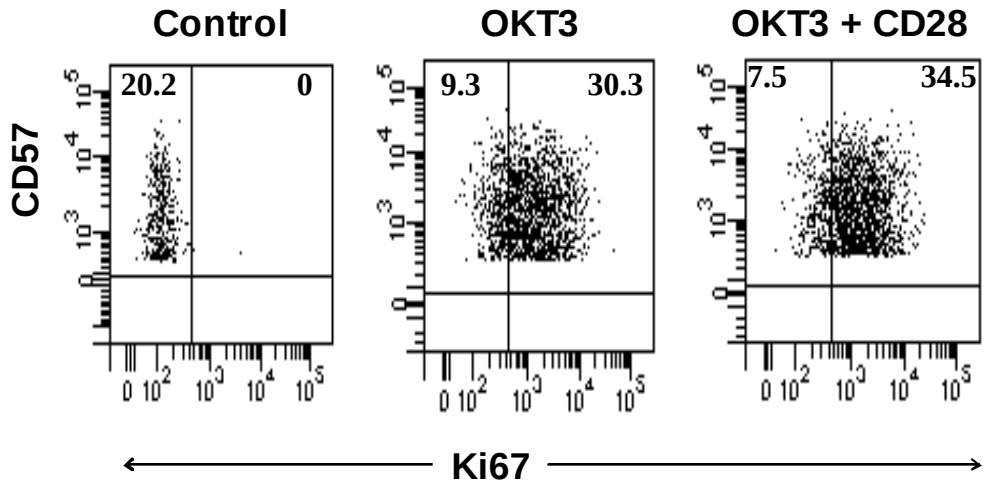
$CD8^+CD57^+$ TILs are less differentiated compared to $CD8^+CD57^+$ lymphocytes in peripheral blood

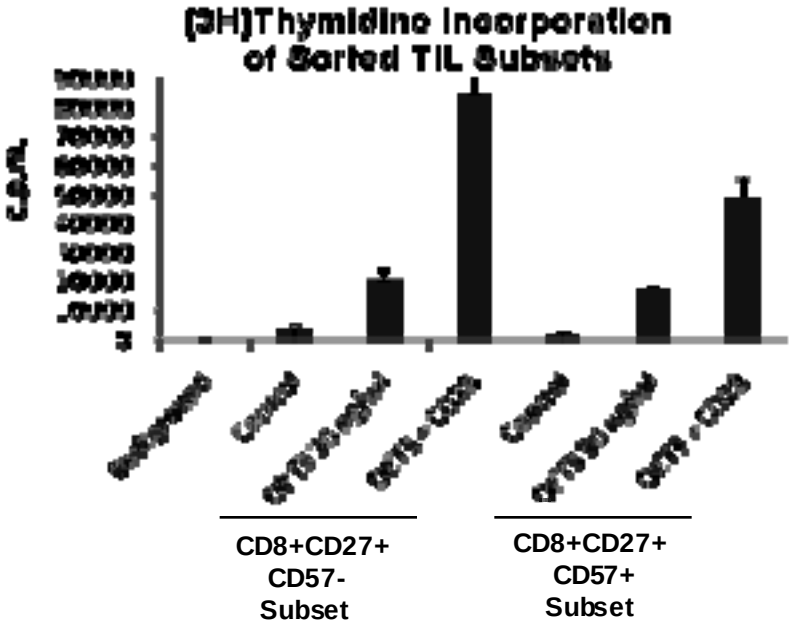


Abnormal CD8+ T cell differentiation to end-stage CTL in tumor microenvironment



$CD8^+CD27^+CD57^+$ subset is not senescent or anergic





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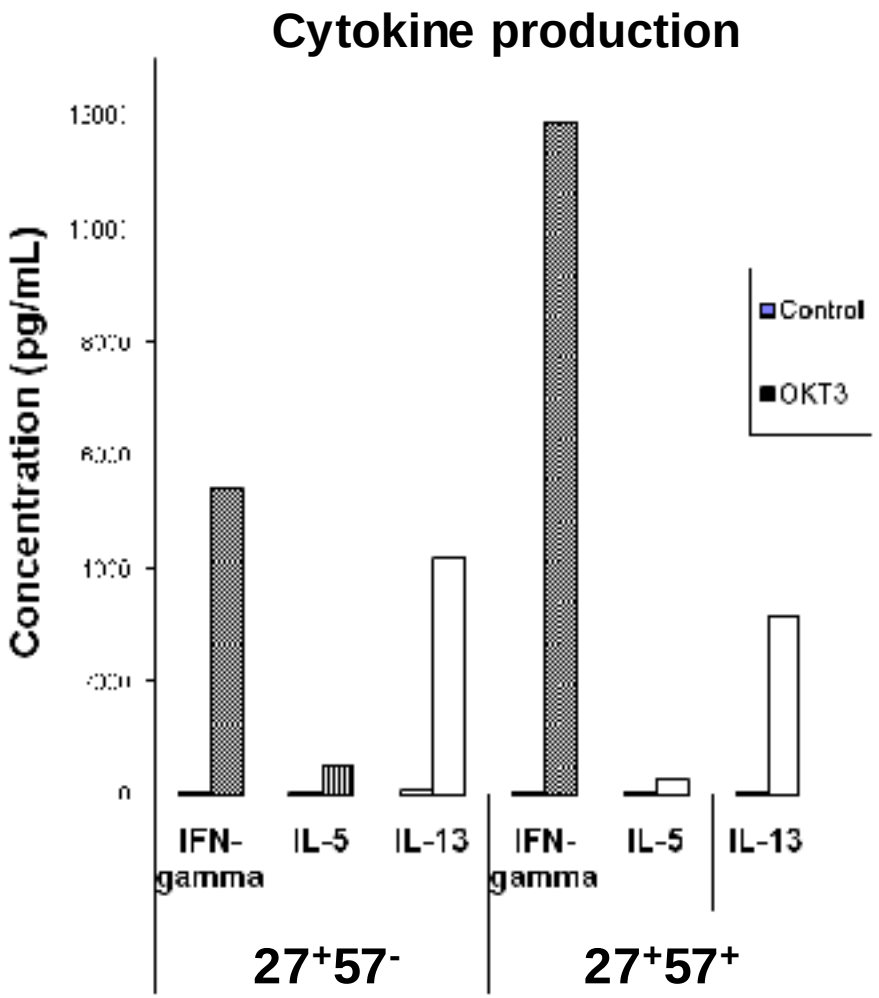
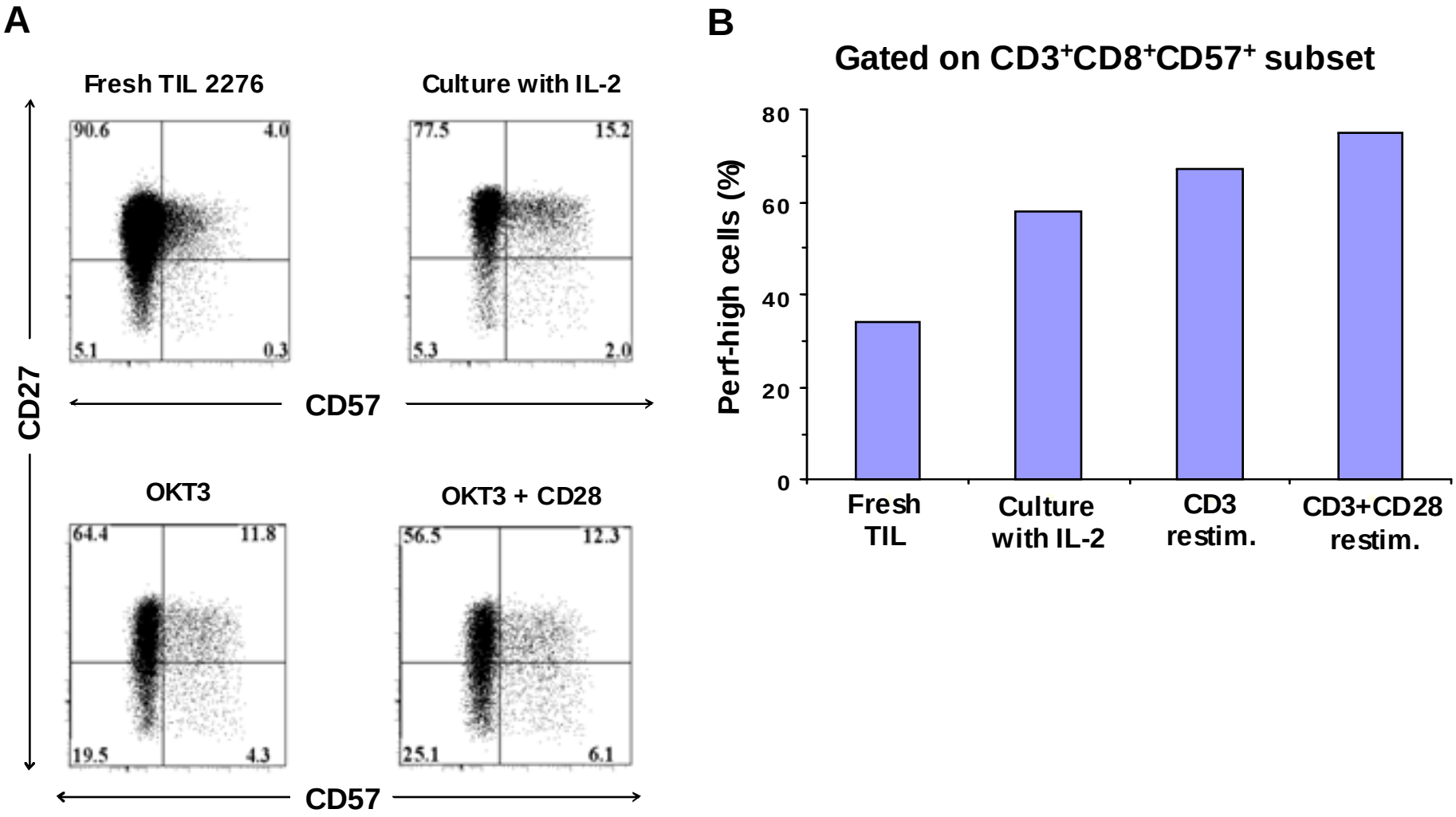


$CD8^+CD57^+$ can differentiate further into $CD27^-CD57^+$, perforin$^+$ cells *ex vivo*



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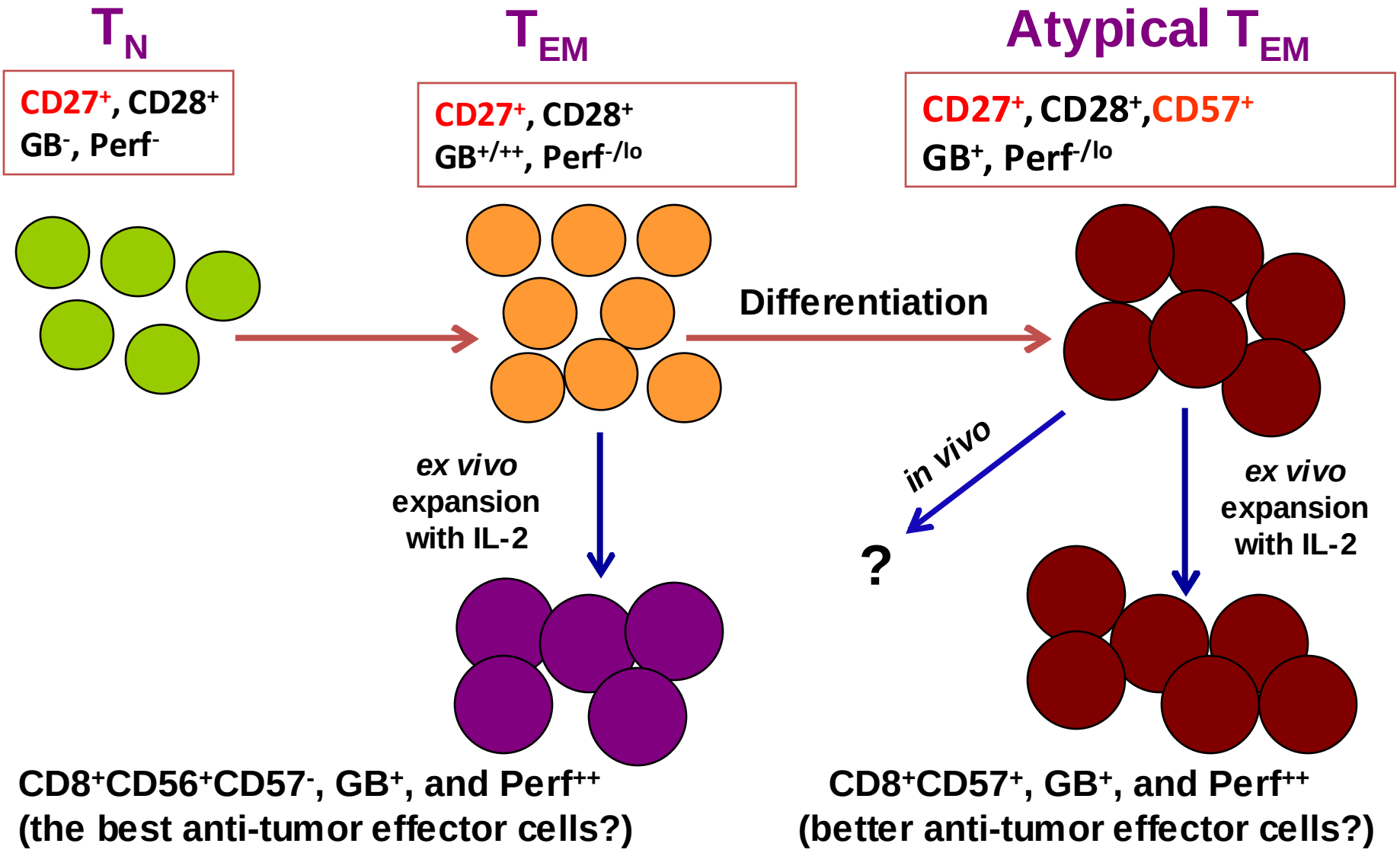

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