

Cytokines Reinvented

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Cytokine approvals

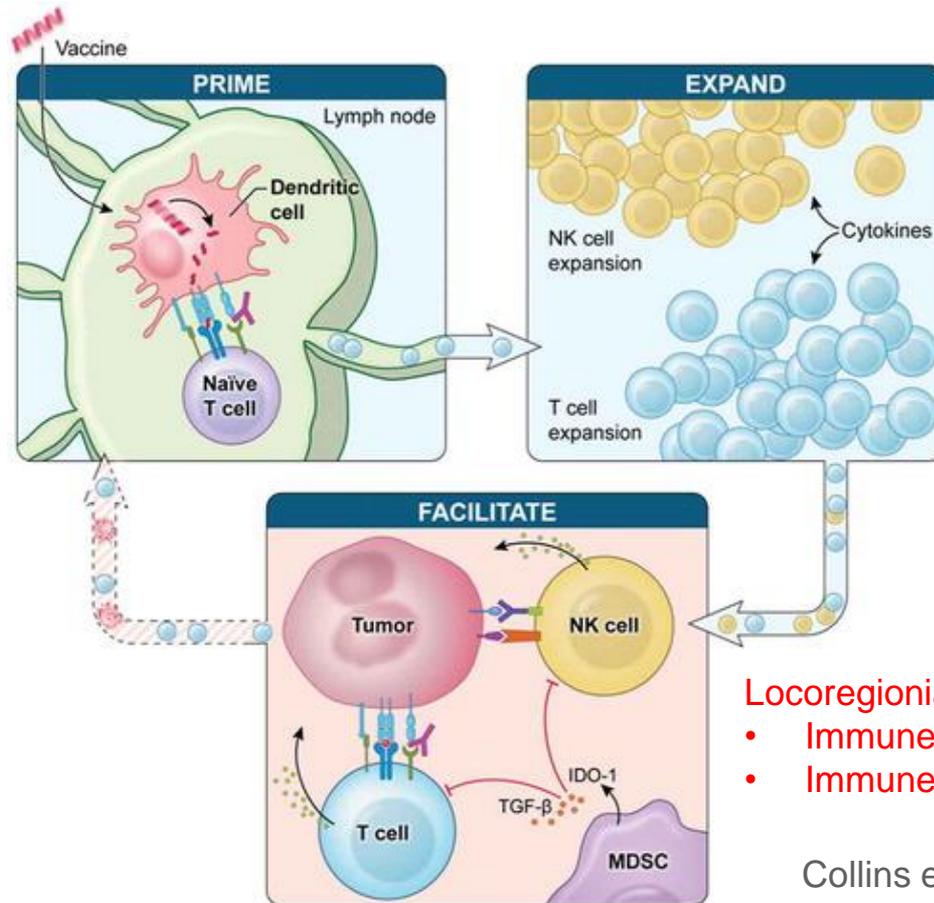
- IL-2 (1992)
- IFN- α (1986)

RCC, Melanoma, others

Toxicities and small proportion of patients benefiting limited clinical use

Requirements for Effective Immunotherapy

Cytokines to prime existing responses and help prime de-novo responses



IL-2, IL-12, IL-15, IL-18

Locoregional cytokines

- Immune stimulatory
- Immune inhibitory: e.g., TGF- β

Collins et al., Expert Rev Vaccines 2018

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5:07 p.m.	NHS-IL-12, IL15 superagonist, M7824 Marijo Bilusic, MD, PhD – National Cancer Institute, National Institutes of Health
5:27 p.m.	Harnessing Potent Immune Agonist Pathways through Kinetic Engineering Deborah Charych, PhD
5:47 p.m.	Locoregional Cytokine Immunotherapy K. Dane Wittrup, PhD – Massachusetts Institute of Technology
6:07 p.m.	Immune monitoring after NKTR-214 plus nivolumab (PIVOT-02) in previously untreated patients with metastatic Stage IV melanoma Adi Diab, MD – The University of Texas MD Anderson Cancer Center
6:17 p.m.	Decoy-resistant Interleukin-18 overcomes the soluble immune checkpoint IL-18BP to unlock a potent immunotherapeutic cytokine pathway Aaron Ring – Yale School of Medicine