HIV/AIDS and the Tumor Niche

Elizabeth Read-Connole Ph.D.
Division of Cancer Biology

Geraldina Dominguez Ph.D.
Rebecca Huppi Ph.D.
Office of HIV and AIDS Malignancies
RFA Purpose
Continue Advancing our Understanding of the

- Risks
- Development
- Progression
- Biology
- Diagnosis
- Treatment

of Malignancies observed in individuals with an underlying HIV infection
HIV’s role in the tumor niche current state of knowledge:

**T Cells**

**Monocyte/Macrophage**

**Dendritic Cells**

Role largely unknown:

**Stroma**

**B Cells**

**Extracellular Matrix**

**Others?**

Image from Eickhoff et al. 2015, Cell 162, 1322
Scientific Question 1

Does HIV influence the tumor niche?

- How does HIV directly or indirectly establish a tumor niche?

- Do HIV induced activities lead to altered risks of various tumors in the HIV positive population?

- How is the stroma affected during acute or chronic HIV infection?
Scientific Question 2

Do inflammation & immune dysfunction direct & establish the tumor niche?

• Does inflammation contribute to establishing and maintaining the tumor niche?

• Do changes in the extracellular matrix alter the environment to make it an attractive tumor niche?

• Does immunosuppression contribute to an increased risk of developing rare AIDS-defining tumors or non-AIDS-defining tumors?

• Does co-infection of HIV+ with infectious agents (HBV, HCV, HPV, KSHV, EBV) also contribute to the tumor niche?
Administrative

• Mechanism: R01 (5 years)
• Two Receipt Dates
  • Anticipated Award Dates
    • ~December, 2017
    • ~ July, 2018
• Anticipate Funding 4-5 applications per each receipt date

Budget

• First Year Budget Set Aside (per receipt date): $ 2 million
• Source of Funds: RPG
• Total Budget for Project Period: ~$ 20 million
• Funding through OAR
Background

• Each year NIH OAR requests new AIDS-related Initiatives from ICs that receive funds for OAR-defined “High” or “Medium” Priority AIDS research.

• NCI’s Requests to OAR were submitted to the NCI Director for Prioritization and submitted to OAR.

• This topic corresponds to relevant areas of emphasis in the NIH OAR FY2017 Plan for HIV-related Research.
Current Portfolio Analysis

175 total NCI AIDS Funded Grants 2015-2016 (searching terms “AIDS” and “all”)

then added Terms to the above search for

- AIDS tumor microenvironment 3
- AIDS and Tumor Niche 0
- HIV and Tumor Niche 0
- AIDS cancer and microenvironment 0
- AIDS-malignancy & tumor environment 0
- AIDS-environment 0
- Tumor Niche and AIDS 0
Justification for Use of an RFA

- As an incentive to propose projects that will address the Tumor Niche with an underlying HIV infection, set aside funds are necessary.

- The requested budget set-aside may attract applications from AIDS/HIV investigators who may be new to cancer research.

- Applications will be reviewed by a panel of area experts convened by NCI DEA.
Evaluation of the HIV Infection and the Tumor Niche RFA

- Extramural scientific staff from DCB, OHAM and other DOCs (Committee) will;
  - Track all applications from receipt and evaluations of responsiveness through funding plan approval.
  - Comment on progress/accomplishments.
  - Track the number and impact factors of publications and the subsequent new awards.
  - Solicit input from the BSA ad hoc sub-committee on HIV and AIDS Malignancies.
Questions?