Society for Immunotherapy of Cancer

May 26th, 2020

The Honorable Norman E. Sharpless, MD
Director
National Cancer Institute

Dear Director Sharpless,

The Society for Immunotherapy of Cancer (SITC) appreciates the opportunity to comment on the National Cancer Institute's (NCI) Request for Information (NOT-CA-20-065) regarding research approaches and priorities related to SARS-CoV-2 serology, as well as potential connections derived through cancer research.

SITC is the world's leading member-driven organization specifically dedicated to improving cancer patient outcomes by advancing the science, development and application of cancer immunology and immunotherapy. SITC volunteers and experts have been working for decades to develop effective immunological approaches to inducing and maintaining an active anti-tumor response. While our experts' research has primarily helped facilitate the recent introduction of cancer immunotherapeutics as standard of care in many disease settings, a number of basic immunology breakthroughs have been uncovered that we feel could prove helpful in the fight against SARS-CoV-2 and COVID-19. Below are four examples of how SITC membership could translate immunological experience in cancer to benefit the development of treatments for COVID-19 and serological testing techniques for SARS-CoV-2:

1. COVID-19 is mediated by an abnormal immune response to SARS-CoV-2. Similarly, cancer is another disease where immune responses are deficient. As such, our members' understanding about the basic principles of immune system interactions with cancer has immediate relevance to understanding anti-viral immunity in COVID-19 patients. Further research into tumor immunology and immunotherapy are important for enhancing our understanding of immune system regulation and therapeutic manipulation for diseases like COVID-19. Furthermore, approved cancer immunotherapeutics may be useful for treatment of COVID-19, providing an important area of research in which cancer immunologists can contribute.

2. Through our member's efforts to develop anti-cancer vaccines, data suggest that vaccine formulation – including both the primary immunological components and the adjuvant – can have a significant impact on the type and duration of the generated immune response. We feel that the expertise of our membership related to inducing an effective and sustained vaccine-based immune response against cancer could readily be applied to SARS-CoV-2 immunization and testing.

3. Incidentally, the emergence of treatment-resistant clones that have lost the targetable antigens is a significant problem in both cancer and anti-viral immunity. Our members have determined that we can address this challenge in cancer by inducing an immune response in a manner that

results in “epitope spreading” so that immunity is not restricted to a single molecular target. This technique could be highly applicable to the development of novel treatments for COVID-19, and our experts’ experience could be more heavily utilized.

4. The complexity of the immune system has become more readily understood throughout our members’ experience in developing cancer immunotherapeutics. More specifically, it is now appreciated that effector immune mechanisms are far reaching beyond simply inducing antibodies against a surface target. Our stakeholders have vast experience in evaluating antibody isotypes and engineering modifications that better engage other immune effectors, techniques of which could potentially allow for increased efficacy of future COVID-19 treatments in a similar fashion to what we observe in the oncology arena.

These examples represent only a few of the ways in which current cancer immunotherapy research could be applicable in the testing for SARS-CoV-2 infection and treatment of COVID-19. SITC membership includes experts across all facets of immunology, and they are happy to participate in this important initiative in any way possible.

We thank the NCI for providing the opportunity to provide comment on the relation between current cancer research, SARS-CoV-2, and COVID-19. Should you have any questions, please do not hesitate to contact me at twithington@sitcancer.org.

Sincerely,

Tara Withington, CAE
Executive Director; Society for Immunotherapy of Cancer