

POSTER PRESENTATION

Open Access

L-tyrosine is a promising cancer vaccine adjuvant

Hiep Khong*, Meenu Sharma, Zhimin Dai, Manisha Singh, Yared Hailemichael, Willem Overwijk

From 30th Annual Meeting and Associated Programs of the Society for Immunotherapy of Cancer (SITC 2015) National Harbor, MD, USA. 4-8 November 2015

The choice of adjuvants is critical for any vaccine whether prophylactic or therapeutic. Our group previously showed that incomplete Freund's adjuvant, commonly used in different cancer vaccine trials, had many undesirable effects on T cell trafficking and function which directly translates into poor anti-tumor efficacy in preclinical murine model. Switching from oil-based (IFA) to water based (saline) vaccine eliminates those undesirable effects but at the cost of low specific T cell number. We therefore screened for adjuvants capable of inducing high T cell number with superior function and trafficking to the tumor. Here, we show that L-tyrosine particle is a very promising adjuvant for peptide based cancer vaccine. In combination with covax (including IL-2, anti-CD40 and imiquimod, a TLR-7 agonist), particle based L-tyrosine vaccine induces superior tumor specific CD8 T cell response, in terms of T cell number and function, resulting in remarkable anti-tumor efficacy. Mechanistic study shows that L-tyrosine particle extends antigen presentation time which is long enough for optimal T cell priming but not too long to induce a "grave yard" for the primed T cells. Understanding how the L-tyrosine particle works will provide more rationale for future vaccine adjuvant design.

Published: 4 November 2015

doi:10.1186/2051-1426-3-S2-P440

Cite this article as: Khong et al.: L-tyrosine is a promising cancer vaccine adjuvant. *Journal for ImmunoTherapy of Cancer* 2015 **3**(Suppl 2):P440.

**Submit your next manuscript to BioMed Central
and take full advantage of:**

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



University of Texas - MD Anderson Cancer Center, Houston, TX, USA



© 2015 Khong et al. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated.