



March 6, 2025

## **Acuitas' CSO Co-Authors Article in *Nature Communications* with Scientists from the University of Pennsylvania**

**Vancouver, B.C.** – Acuitas' Chief Scientific Officer, Ying Tam, collaborated with scientists from University of Pennsylvania (including Drew Weissman) on an article published by *Nature Communications* titled: "Monitoring mRNA vaccine antigen expression in vivo using PET/CT."

The scientists utilized mRNA encoding the enzyme dihydrofolate reductase (eDHFR) fused to the delta furin diproline modified vaccine antigen SARS-CoV-2 spike glycoprotein (S2P<sup>Δf</sup>) to enable imaging of antigen expression following immunization. Using [<sup>18</sup>F]fluoropropyl-trimethoprim ([<sup>18</sup>F]FP-TMP) and whole-body positron emission tomography (PET), transient expression of the vaccine antigen was detected at the injection site and in draining lymph nodes of immunized mice and non-human primates. Importantly, fusion of eDHFR did not impact S2P<sup>Δf</sup> immunogenicity and no humoral or cellular immune responses were detected against eDHFR in either species. In this work, the scientists showed that eDHFR can be used as an mRNA-encoded PET reporter gene to non-invasively monitor the spatiotemporal dynamics of mRNA vaccine antigen *expression in vivo* which has important implications in vaccine development and evaluation. This technique could be applied in clinical translation of future mRNA vaccines or therapeutics.

Please click [here](#) to read the publication.

-END-