

7th Annual Congress on

**Cell Science, Stem Cell Research and Regenerative Medicine****August 15-16, 2022 | Chicago, United States of America***John J Miles*

James Cook University, Australia

**Using synthetic biology to generate hyper-stable vaccines**

Polypeptide vaccines effectively activate human T cells but suffer from poor biological stability, which confines both transport logistics and in vivo therapeutic activity. Synthetic biology has the potential to address these limitations through the generation of highly stable antigenic “mimics” using subunits that do not exist in the natural world. We developed a platform based on non-natural chemistry and used this platform to reverse engineer entirely artificial T cell agonists that immunogenicity more than 5-fold of their natural blueprints. This non-natural chemistry is highly stable in human serum and gastric acid. In vitro, these synthetic agonists expanded antigen-specific responses against multiple epitopes across multiple viruses. In vivo, synthetic vaccinated mice were protected from lethal challenge. Moreover, the synthetic agonists were immunogenic after oral administration. We have since expanded this technology to other human viruses, including SARS-CoV-2. These proof-of-concept studies highlight the power of synthetic biology to expand the horizons of vaccine design and therapeutic delivery. Is providing 180 prosthetic devices to refugees with lower limb amputations with capacity of 12 devices. Nearly 90% of the beneficiaries are warrelated injuries, out of them 10% are females. Post rehabilitation impact on Syrian refugees with lower limb amputation is seeking to collect and analysis of information provides a gathered from the beneficiaries through surveys and focus group discussions that includes quantity and quality indicators that aim to monitor the functional improvements by using functional independence measure and amputee mobility predictor during

among all refugees eligible for services by the Government of Turkey, the center is providing 180 prosthetic devices to refugees with lower limb amputations with capacity of 12 devices. Nearly 90% of the beneficiaries are warrelated injuries, out of them 10% are females. Post rehabilitation impact on Syrian refugees with lower limb amputation is seeking to collect and analysis of information provides a gathered from the beneficiaries through surveys and focus group discussions that includes quantity and quality indicators that aim to monitor the functional improvements by using functional independence measure and amputee mobility predictor during assessment, discharge and follow up session after 45 days of discharge date. Vel ene sollenit quid et optat. Xerrore perunt et exere corro officiliatur ad molore in enis re officatempas alistias volupti sunt voloreium, omnime volupta speli- que et ipid ut alit, cuptasp editati orepedictas quam earchilit ut lant, quidemporro eribus experspicium ut ea consene stotatis ellorrorem in nis explandesci dem aut rempor res pliquo bea que dolendant, sit magnate mporum adio mos excerit hitatis as aciis as re inctis autatiis aliquam se nimporiatum vit fugias eaquid que voluptatur, senis quodia accullaut et es et delit que aut harum voloreperis comni volor adi acest voloruptatur sed ut ut mi, sitatur, volorem il est quam est, sit que preptatur? Anda quas remporu ptatiam adi te adit eic tem volut apiendelenis mos sed maxi- mus repe sam nempellest voluptatem et ma nimagni hiciisdolest alicius nisitatet estem quo mod etur aut as illoriatem sam,et, cumquidel eseceptatin earibus maximped enet adi denet remunt omnimus veribearit enihill antinul parumet omnihillabo. Ut etquas aliciiis

7th Annual Congress on

## Cell Science, Stem Cell Research and Regenerative Medicine

August 15-16, 2022 | Chicago, United States of America

among all refugees eligible for services by the Government of Turkey, the center is providing 180 prosthetic devices to refugees with lower limb amputations with capacity of 12 devices. Nearly 90% of the beneficiaries are warrelated injuries, out of them 10% are females. Post rehabilitation impact on Syrian refugees with lower limb amputation is seeking to collect and analysis of information provides a gathered from the beneficiaries through surveys and focus group discussions that includes quantity and quality indicators that aim to monitor the functional improvements by using functional independence measure and amputee mobility predictor during assessment, discharge and follow up session after 45

### Biography

Professor John Miles is Principal Research Fellow of Molecular Immunology at the Australian Institute of Tropical Health and Medicine, James Cook University, Australia. He is co-director for the Centre for Tropical Bioinformatics and Molecular Biology and theme leader for the Centre for Molecular Therapeutics at James Cook University. Professor Miles is an expert in human immune system monitoring and modulation, where he has published 117 papers (h-index 44 and 6,700 citations), I am in the 100th percentile in percentile by my worldwide Topic of Cluster Prominence in my field of T cell biology. groundwork for long-term impact. in response to the devastating. Relief international which is a leading nonprofit organization working in roughly 20 countries to relieve poverty, ensure well-being and advance dignity, We specialize in fragile settings.

### About University

Since its founding in 1831, NYU has been an innovator in higher education, reaching out to an emerging middle class, embracing an urban identity and professional focus, and promoting a global vision that informs its 19 schools and colleges.

Today, that trailblazing spirit makes NYU one of the most prominent and respected research universities

Anchored in New York City and with degree-granting campuses in Abu Dhabi and Shanghai as well as 11 study away sites throughout the world, NYU is a leader in global education, with more international students and more students studying abroad than any other US university.



### References:

1. Shwetha A., Hosetti B.B., Dube P.N. (2012). Toxic effects of zinc cyanide on some protein metabolites in freshwater fish, [Cirrhinus mrigala](#) (Hamilton). International Journal of Environmental Research, 6 (3), 769- 778.
2. Mudder, T. I. and Whitlock, J. L. (1984). Biological treatment of cyanidation waste [waters](#). Mineral and Metallurgical Processing., 1, 161–165
3. Mathangi, D. C. and Namashivayam, A. (2000). Effect of Chronic Sublethal Cyanide Administration on Brain Neurotransmitters and Behaviour in Rats. Int. J. Occup. Environ. Health., 42, 88–90.

E: [miles09@ukr.net](mailto:miles09@ukr.net)