



# Psoralen-Inactivated Coronavirus Vaccine and Method of Preparation

**Unmet Need:** Coronaviruses like SARS, MERS, and COVID-19 are persistent threats to public health. The global death toll for COVID-19 alone is over 7 million. Since the beginning of the COVID-19 pandemic, the SARS-CoV-2 virus has evolved to produce multiple Variants of Concern (VOCs) and Variants of Interest (VOIs). While vaccines exist for many of these variants, the need for more efficacious vaccines against broad spectrum of coronaviruses is considerable. The global market is believed to reach over \$10B USD by 2024 for COVID-19 vaccines, with an annual growth rate of 20% until 2028. In the US, current estimates of the profits made by major pharma companies on COVID-19 vaccines are on the order of \$90B to date. In short, there is an increasing need for efficacious vaccines.

**Solution:** The US Navy, through the Naval Medical Research Command (NMRC), has been at the forefront of developing vaccines to protect its warfighters from coronaviruses, including COVID-19/SARS-CoV-2, and it has developed an innovative vaccine prepared using a unique method of inactivation. The vaccine does not use mRNA or ribonucleotide immunogens (to which a large segment of the populace has an irrational bias). Instead, the vaccine uses a non-replicative, psoralen-inactivated whole virus immunogen. SARS-CoV-2 whole virus inactivated vaccines are prepared by treating the coronavirus with a psoralen compound followed by exposure to ultraviolet light, using a specific set of conditions SARS-CoV-2 is inactivated while preserving its immunogenicity.

**Stage of Development:** Preliminary development is complete and clinical trials are in the planning stages.

**IP or IP status:** This technology was developed by the NMRC and is patent pending. The pending patent application may be found at [US 2022-168411](#). This technology is available for licensing from the NMRC.

- **Command:** NMRC
- **Category:** Vaccines
- **License Status:** available for exclusive or non-exclusive licensing and collaborations
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- **Contact:** [usn.detrick.nmrc.mbx.technology-transfer@health.mil](mailto:usn.detrick.nmrc.mbx.technology-transfer@health.mil)