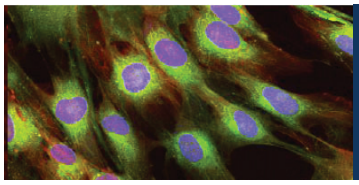

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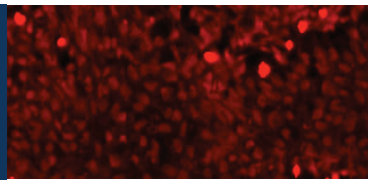


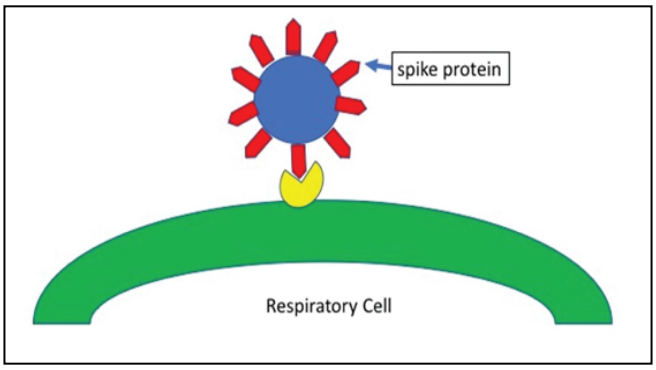
March 2020 Newsletter - "Campaign for Cures" - 2019 Update and 2020 Goals to Develop a Coronavirus Vaccine

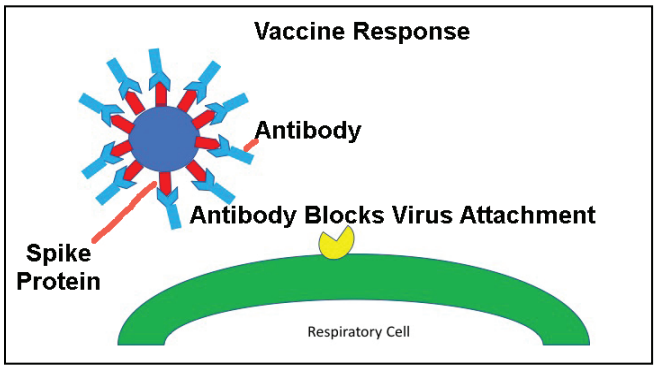
Dear Friend:

Thanks to your support, the John Paul II Medical Research Institute raised $280,000 towards our $300,000 "Campaign for Cures" research goal in 2019. "Campaign for Cures" was launched in June 2019 to establish ethically derived human cell lines to replace current cell lines created from aborted fetal tissue, the latter of which are being widely used in vaccines, gene and cell therapy, protein medicines and other bio-manufacturing applications. In 2019, JP2MRI's goal was to use the funds to demonstrate that we could develop methods to create "immortalized" human adult stem cell lines. All cells eventually die over time and have a limited shelf life unless they are made immortal. In July 2019, the Institute isolated 2 adult stem cell types from newborn cord blood and from placenta. Our research team genetically altered these cells and immortalized them so that they could grow indefinitely and hopefully be used in bio-manufacturing of advanced medicines. Research of this nature had never been attempted before using adult stem cells. In fact, there is an unwritten scientific bias that only fetal cells could be immortalized - thus perpetuating the justification to always use tissue from abortions. JP2MRI is very happy to report that after more than eight months, the two cell lines are still growing strong. This is a HUGE scientific milestone which could not have been accomplished without your financial support and for which we offer our deepest thanks! So, what's next in 2020 and how can you help?

These immortalized human cell lines, combined with our stem cell technology, now enable us to create morally licit cell therapies, gene therapies, biologics and vaccines for the first time. Moreover, we believe that these biotechnologies will offer scientific advantages over prior aborted fetal cell lines and non-human cell lines currently used in bio-manufacturing. For 2020, JP2MRI has three major priorities to help advance the "Campaign for Cures": (1) file US and Foreign Patents to protect the intellectual property; (2) validate the capabilities and properties of our cell lines; and (3) apply this technology to address an immediate healthcare problem facing society. All three of these milestones will be executed simultaneously. Given the global healthcare issue now before us, the Institute needs to deploy our technology to conduct research to develop a vaccine for Coronavirus (COVID-19). The World Health Organization recently stated that the death rate for Coronavirus is expected to be three times higher than influenza. The Institute feels that it is uniquely positioned to help address this healthcare problem for the reasons explained below.

Vaccines are typically created by producing a key viral protein that is critical in causing an infection. A vaccine works by producing an antibody in response to a specific viral protein that will prevent infection. Coronavirus carries a special protein called a "spike protein" that attaches to the surface of human airway cells (see figure below to the left). Once the spike protein attaches, the virus rapidly enters respiratory cells and causes cell injury. Thus, the key to creating a vaccine is to produce a purified spike protein that can immunize patients to produce antibodies and neutralize Coronavirus from attaching to respiratory cells (see figure below to the right).





Unfortunately, the conventional ways to produce a protein have several major shortcomings because of a process called "glycosylation" in which mammalian and human cells add sugar molecules to a cellular protein. This final sugar-protein molecule confers the necessary pharmacologic properties for producing a vaccine. However, the process of glycosylation is specific to each species. Current cells typically used for producing proteins like bacteria, yeast, insect cells and Chinese Hamster Ovary (CHO) cells either lack glycosylation processes or do not provide a normal human glycosylation system. Moreover, aborted fetal cells have been so genetically altered over decades of use that they have lost their normal glycosylation process. Thus, our cell lines likely represent the closest glycosylation process to native human cells. Since the Coronavirus is a global medical priority, this infection represents a moral healthcare priority for the "Campaign for Cures." Consequently, JP2MRI intends to simultaneously validate our cell lines and apply the technology to this healthcare issue.

JP2MRI's financial goal for the 2020 "Campaign for Cures" is to raise $325,000. However, given the recent global threat of this respiratory viral infection, the financial expenditure for this year could rise even higher given the recent news reports. The Institute will need to file provisional US and foreign patents as a requirement before we can publish or distribute these cell lines and produce the product. We will also need to purchase $60,000 of new equipment. The remaining budget is dedicated to research personnel and research supply costs. We are confident that the Institute can meet this scientific goal, but your financial support will be critical in this effort. Every single dollar will help and will make it that much easier for us to meet or exceed our 2020 goal. I am asking each of you to please make a meaningful donation to JP2MRI and also help us promote this campaign through your network of family members, friends, social groups, church parishes, academic and business organizations with which you may be involved. Many of you have previously held fundraisers on behalf of our non-profit and these events are a great way to get the word out. JP2MRI even has a fundraising guide on our website to help you plan such an event.

JP2MRI is committed to advancing ethical medical research and our team is working hard to find new therapies and cures. We take pride in applying the majority of every dollar we receive towards medical research. Please join the fight to support ethical research by donating today. To learn more, please visit www.jp2mri.org. Thank you.

Kind regards and God Bless,

Jay M. Kamath, J.D. / CEO
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