Will Sixth Wave's fast and accurate breathalyzer revolutionize global pathogenic virus testing?

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I'm hopeful that we will soon see this whole COVID issue become an endemic as opposed to a pandemic, and life as we know it, can return to something a lot more like it was before this annoying virus became the bane of our existence. Whether continued mutation of the virus allows us to get on with life or not, we need to be better prepared for the future, so we can get a handle on things sooner and keep the economy rolling, keep the kids in school and get rid of this whole division of society over masking and vaccinations. I've suggested in past articles that, in my opinion, effective, reliable rapid testing could go a long way to resolving this, and any potential future viruses that come along. However, after getting my hands on the current generation of rapid tests and using them a few times to visit family and friends over the Holiday Season, I find it necessary to add one more descriptor – convenient. I actually stopped going out because the thought of jamming that swab up my nose again brings tears to my eyes and a bit of a queasy feeling.

But what if I told you there is a company out there that is on its way to developing a rapid breathalyzer test that can identify COVID and potentially many other viruses. I know it has certainly caught my attention. Sixth Wave Innovations Inc. (CSE: SIXW | OTCQB: SIXWF) utilizes unique applications of nanotechnology called Molecularly Imprinted Polymers (MIPs) for imprinting, capturing, and releasing substances at the molecular

level. The technology has applications in multiple areas with a current focus on the recovery of gold, explosives detection, metabolite extraction and medical diagnostics for viruses. Sixth Wave can design, develop and commercialize MIP solutions across a broad spectrum of industries. The company is focused on nanotechnology architectures that are highly relevant for the detection and separation of viruses, biogenic amines, and other pathogens, for which the Company has products at various stages of development.

I'll try to briefly explain how this works without getting into too many hard-core science details given it's mostly over my head. Viruses have unique chemical profiles that result in different shape, size, and surface chemistry characteristics. Sixth Wave designs polymerizable ligands specifically to take advantage of the size, shape and surface chemistry of a target virus or target class of virus to achieve selectivity and sensitivity in diagnostic applications.

Source: Sixth Wave Innovations Inc. Corporate Presentation

They say a picture is worth a thousand words, but I suspect the diagram above would be a lot more than that if I could properly explain it. My simple analogy is that you build a puzzle with one specific piece missing and the only puzzle piece that will fit in that spot is the COVID-19 virus (or whatever virus or family of viruses you selected to fit your polymer puzzle). If you have the correct piece of the puzzle, it will indicate a positive result. If that doesn't make sense to you then you can go to the Company's website and do some more digging on your own because that's the best I've got.

Beyond the science, here is where Sixth Wave currently stands in its mission to stem the tide of emerging outbreaks quickly in

order to prevent worldwide pandemics in the future. On December 14th the Company announced it had successfully demonstrated selective binding and detection of live SARS-CoV-2 virus in saliva samples using its patent-pending Accelerated Molecularly Imprinted Polymer (AMIPs™) technology. The next and final stage of laboratory-based development is to expand testing to a standardized panel of respiratory viruses to confirm that there is no cross-reactivity (or false positives as near as I can tell). Completion of the cross-reactivity testing is the last scientific development step required to produce specificity data before the Company can begin the process of applying for regulatory approval from government agencies such as the U.S.'s FDA and Health Canada.

Sixth Wave's technology overcomes problems that impact current methods to test for COVID-19 that require using biological materials (antibodies) to detect the virus. PCR, Polymerase Chain Reaction, tests are expensive, generally require unpleasant nasal swabs, and rely on laboratory analysis to return results, and as we've seen of late this has completely overwhelmed the system resulting in several days to get results. Rapid antigen tests are faster but significantly less accurate, are also somewhat unpleasant (at least to me) and diminish in effectiveness as the virus mutates. Compare that to a handheld breathalyzer that could be used multiple times by the same user for easier, less expensive, less wasteful testing. Sixth Wave envisions its unit would have a disposable biosensor (cartridge) that is simply replaced upon a positive detection or after a predetermined sampling time if there is no positive detection.

Personally, I really hope that Sixth Wave can get this technology to the finish line as I think it would be a great benefit to society as a whole. Then there's the potential impact on the share price if they are the ones to come up with the de

facto, go-to gadget for simple, convenient and inexpensive virus testing. With a current market cap of C$27 million and trading almost at its all-time low share price, this could be quite the game-changer for Sixth Wave Innovations.