

Mucosal Mapping™ – an invention, a discovery and the presence of health

Slime and snot. Something most living creatures have because they help get rid of disease and are the first line of defence. Slime, or mucus. Five years ago even James Watson, discoverer of the double helix, said we know almost nothing about the mucosal immune system. But now we know much more. The award winning invention of Mucosal Mapping™ (3D investigations from 2D sections) let Quantidoc test what slimy barriers do when challenged by for example diet, hydrogen peroxide and parasites. Just as proof of principle, you understand, not to limit the applications.

The invention happened in 2010 because we wanted to measure the mucus cells in a meaningful way to compare the effect of treatments. It is objective, quantitative and so statistically robust that, if there is a difference in a cage full of many thousands of fish, we can find it, down to 7 square microns. It has been tested in 4 countries (Norway, Canada, Spain and Japan) on 4 species of slimy creatures (salmon, trout, seabass and amberjack) and on 3 tissues (skin, gills and guts). In over 15 commercial scale and lab trials. The IP was transferred to Quantidoc, a startup out of University of Bergen, in 2013 for commercial exploitation. Mucosal Mapping won the Hordaland Inventor Prize in 2013. Our current clients include big fish farming companies, feed developers, other international research institutions and developers of antiparasitic treatments as well as those trying to find good ways to measure welfare.

The discovery is that the mucous cells as a group have a distinct behavior, changing size and density in response to the challenges. The behavior is predictable and shows an immune response that can be enhanced or dysregulated by the test treatment and we can use this objective, quantifiable Mucosal Mapping™ to test for real differences using standard statistical tests. We can aim for documenting health. This is a unique tool to show how well the mucosal slimy barriers are standing up to environmental and other challenges. It is the best, sustainable way forward. Isn't your health worth it too?

Quantidoc AS, quantification and documentation of barrier health.

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