Sandro Sonnino, a *FEBS Letters* editor since 2004, is a prominent expert in the field of lipid biochemistry. He is Professor of Biochemistry at the University of Milan, where he is Coordinator of the Doctorate School in Biochemical Science, of a unit of the Center of Excellence on Neuropathological Diseases (CEND) and of the Interdisciplinary Laboratory for Advanced Technology (LITA). “LITA is one of the best places to do science in Milan”, he says with pride. “The seven-story glass building was built ten years ago, and benefits from state-of-the-art technology.”

Which part of your work do you enjoy the most?

I mostly like tutoring young scientists in the lab. I enjoy the scientific discussions, and I always find it interesting to be among young people. They make me feel younger!

What is the current focus of your research?

We study membrane sphingolipids and the organization of the plasma membrane [1]. In particular, we are interested in sphingolipid metabolism at the level of the membrane, and the biochemistry that can alter membrane geometry. There are enzymes in the plasma membrane that modify the structure of sphingolipids, and cause a change in membrane curvature. For example, sphingomyelin, which confers a positive curvature to the cell surface with its large hydrophilic head group, can be converted to ceramide by sphingomyelinase. Ceramide, due to its small hydrophilic head group, has a more hydrophobic character, and can decrease the membrane curvature, or even flip it from positive to negative [2]. We have shown that sphingolipids segregate at the edges of caveolae [3], which are plasmalemmal invaginations implicated in endocytosis, and this structural change in the membrane is believed to be the first step in the process of endovesiculation, or endocytosis. Membrane curvature also has an important role in the segregation of membrane proteins and cell signaling. Several years ago we developed a technique to photolabel membrane proteins [4]. Thanks to this method we have set up collaborations all over the world.

Do lipid rafts somehow fit into the story?

They certainly do. Sphingolipids are not randomly distributed in the cell membrane. Rather, they are segregated together with cholesterol in lipid domains with specialized signaling functions, the so-called “lipid rafts”. Our group was one of the first to introduce the idea of glycosphingolipid segregation at the end of the seventies [5]. In a way, it can be considered an initial step towards the concept of lipid rafts later supported by many other scientists.

Are sphingolipids implicated in genetic diseases?

Since sphingolipids have an important role in cell function and signaling, a defect in sphingolipid metabolism can obviously lead to a great number of dysfunctions, ranging from insulin resistance to cancer. Sphingolipids are directly involved in neurotrophic function and superoxide generation. Moreover, faulty metabolism of sphingolipids can lead to sphingolipidoses like Gaucher, Tay Sachs or Sandoff disease. As a result, our research takes us into all of these fields.

Do you enjoy *FEBS Letters* more as a reader or as an editor?

Editing and reviewing is a time consuming job. I belong to the old school of biochemists who like science to be precise. Therefore, as an editor, I am sometimes skeptical about some procedures in molecular biology, such as over-expression experiments, where the conditions are not topologically or quantitatively physiological.

As a reader and an author, I appreciate *FEBS Letters* because it publishes short studies that are not preliminary, as the results are mostly clear and conclusive. Moreover, in my opinion, the rapid publication and the high number of articles per issue allow the journal to keep up with the fast pace of science.

What is your favorite pastime?

I like to be creative and work with my hands. In the lab I enjoyed the work at the bench, but I have no time for that now. At home, I like to make things out of wood and iron. I recently bought an old barn up in the mountains. During the weekends I spend my time renovating it and building the kitchen furniture.

References


Contact Information

*E-mail address:* sandro.sonnino@unimi.it

*Interview by Daniela Ruffell*

Only monarchs or rulers mentioned in the text appear on the chart. The Celts The Romans The Anglo-Saxons The Viking Invaders The Normans. 900 B.C.-55 B.C. 55 B.C.-450 A.D. 450-1066 8th-11th centuries 1066-1154. Spotlight 11 develops all four skills (listening, speaking, reading and writing) through a variety of communicative tasks, and systematically recycles key language items. Above all, it is designed to promote active learning (activating all new vocabulary and structures in meaningful, everyday situations), holistic learning (encouraging..."Spotlight on..." campaigns address industrywide issues and aim to raise awareness, provide information and practical advice on how the construction industry can tackle the issue. Through taking action to help tackle the issues highlighted, the construction industry can play an important role in making a difference, and ultimately, improve the image of construction. Latest campaign. Spotlight on equality, diversity and inclusion.