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〈教育セミナー〉

第47回教育セミナー（2022）・「老化について考える～原因追究から治療まで，不変の課題への挑戦～」

糖鎖から探る細胞老化・個体老化

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Glycans and Aging

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Abstract

Cells are constantly changing in response to environmental changes in order to maintain the unique functions of each organ. However, cells have a life span, and eventually they lose their ability to divide, resulting in cellular senescence. The accumulation of these senescent cells leads to inflammation, deterioration of tissue function, and the onset of disease, which in turn affects individual aging. However, the details of how the senescence process occurs remain unclear. Therefore, it is difficult to distinguish between healthy aging, which occurs as functional decline, and aging that leads to disease. Recently, however, interest in aging research has increased, and studies of cellular and individual aging have been conducted from various approaches. And clinical research for anti-aging is also being conducted. However, since we cannot shorten the time axis of aging, further research is required to fully understand the aging process. To study the aging process, we focused on glycans on the cell membrane. Glycans cover the cell surface and are involved in various biological activities, and are called the face of the cell. In other words, cellular changes correlate with glycan structures and their functions. In this section, we would like to introduce our research and the latest information on how glycan as the cellular face changes during the aging process.

Key words: aging, glycan, lectin microarray, senescence, inflammation.