Study of axillary osmidrosis

Research Objectives

A wide variety of microorganisms (bacteria, fungi, viruses, etc.) exist in the body. Until now, only a few bacteria and fungi could be cultured; thus, the effect of microorganisms on the human body was unclear. In recent years, however, advances in genetic analysis technology have made it possible to analyze microorganisms in more detail.
One disease that may be related to microorganisms is axillary odorosis. Axillary odorosis is a condition in which a peculiar odor is produced by sweat secreted from apocrine glands in the armpits and bacteria on the skin surface. The secreted sweat has almost no odor, but when the proteins and fats present in the sweat are metabolized by microorganisms, axillary odor substances are produced, giving rise to a peculiar odor.
In this study, we aim to investigate the relationship between the types and proportions of microorganisms inhabiting the skin of the armpits and axillary odorosis (armpit odor), clarify the extent to which microorganisms are involved in the development of axillary odorosis (armpit odor), and gain knowledge for the development of new microbe-related treatments.

Research Outline

In this study, we extracted the total DNA from the microorganisms inhabiting the armpit skin (on the skin surface and in the hair follicles) of people with axillary odorosis, and comprehensively analyzed the microbial flora genetic data by next-generation sequencing. In addition, we isolated and cultured the constituent microorganisms and investigated the general properties and pathogenicity of each microorganism. We also collected various substances on the armpit skin of patients with axillary odorosis and analyzed those involved in axillary odor based on previously reported studies on axillary odor substances.