

*Aspergillus* species are among the most important filamentous fungi from the viewpoints of industry, pathogenesis, and mycotoxin production. Fungal cells are exposed to a variety of environmental stimuli, including changes in osmolality, temperature, and pH, which create stresses that primarily act on fungal cell walls. In addition, fungal cell walls are the first interactions with host cells in either human or plants. Thus, understanding cell wall structure and the mechanism of their biogenesis is important for the industrial, medical, and agricultural fields. Here, we provide a systematic review of fungal cell wall structure and recent findings regarding the cell wall integrity signaling pathways in aspergilli. This accumulated knowledge will be useful for understanding and improving the use of industrial aspergilli fermentation processes as well as treatments for some fungal infections.

Fungal cell wall is mainly composed of polysaccharides and essential for cell viability. This review describes the current understanding of cell wall biogenesis in aspergilli.

