

## Immunomodulators

### Abstract:

Fungal immunomodulators are high-value compounds in nutraceuticals and the high-value pharmaceutical market. Fungal immunosuppressors such as cyclosporins, mycophenolic acid and their derivatives are important medicines for the treatment of many diseases; and they are widely used as the main therapy for pre- and post-organ transplantation treatments to minimize the risk of the body's rejection of the xenotransplanted organ. Further, fungal immunostimulators have a long history in nutraceuticals and preventive medicine through stimulation of the body defense mechanisms. However, most of the known immunostimulators were obtained from macrofungi (mushrooms). More recently, many fungal immunostimulators were used effectively to prevent and to treat many types of cancer. Thus, both the roles of immunosuppressor and immunostimulator are equally important. This chapter provides recent information regarding the chemistry, biosynthesis and industrial production of different types of fungal immunomodulators.