

SOYBEAN TOXIN (SBTX) AND ITS ROLE IN PLANT DEFENSE AGAINST FUNGI
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SBTX is a toxin from soybeans, lethal to mice (LD₅₀ 5.6 ± 0.1 mg/kg mouse body weight) upon intraperitoneal injection. This study reports on structural characterization of SBTX and analyzes its involvement in plant defense against phytopathogens. SBTX was purified by ammonium sulfate fractionation followed of chromatographic steps DEAE-Sepharose, CM-Sepharose and Superdex 200 HR FPLC. SBTX is a 44-kDa basic glycoprotein composed of two polypeptide chains (27 and 17 kDa) linked by a disulfide bond. The N-terminal sequences of the 44 kDa and 27 kDa chains were identical (ADPTFGFTPLGLSEKANLQIMKAYD) differing from that of 17 kDa (PNPKVFFDMTIGGQSAGRIVMEEYA). The secondary structure content was 35% α -helix, 13% β -strand and β -sheet, 27% β -turn, 25% unordered, and 1% aromatic residues and disulphide bridges. SBTX (50 μ gP/mL) inhibited the spore germination of the filamentous fungi *Aspergillus niger* and *Penicillium herguei*, but did not inhibit those of *Fusarium solani* e *F. oxysporum*, even at concentrations ten times higher. Nevertheless, SBTX did not interfere in the vegetative growth of the fungus cited. On the other hand, SBTX slowed the growth of the yeasts *Candida albicans* and *Kluyveromyces marxianus*, but did not have effect on *Saccharomyces cerevisiae*, suggesting that its effect is species-specific. The treatment of soybean seeds with 50 μ M jasmonic acid, for 24 h, led to remarkable increase in SBTX content. These results suggest that SBTX may have a role in the plant defense strategy against pathogens. Supported by CNPq and FUNCAP. Keywords: *Glycine max*, soybean, plant toxin and antifungal protein.