

## ABSTRACT

Mucus was extracted from Grass carp through anesthesia and alkali stress for comparison of effect of these stresses on mucus quality and quantity. Mucus extracted through alkali stress was much viscous, yellowish in color and about 3-4 fold more compared to mucus extracted through anesthesia stress which was less viscous and transparent. Half of the mucus extracted through alkali stress was buffered and pH was adjusted to normal. Samples were stored at -40°C after centrifugation. Samples were used to determine antimicrobial activity against four bacterial strain including *Sarsinia luea* (ATCC 9341), *Staphylococcus aureus* (ATCC 25923), *Escherichia coli* (ATCC 25922), *Bacillus subtilis* (ATCC 6633) and one fungal strain *Candida albicans*. Quality and quantity of mucus protein was evaluated through standardized PAGE. The results showed that most peptides ranges from 15-50KDa. The mucus presented the antimicrobial activity against all bacterial strains but *Candida albicans* behaved contrary to bacterial strains that gave marked growth zones instead of clear zones. *Candida albicans* enhanced growth may attributes to the presence of any nutrient component in mucus, which favor the fungal growth. Samples digestion with various pepsin concentrations resulted in elimination of antimicrobial activity that was might be due to the degradation of antimicrobial peptides. Comparison of different mucus extracts indicated that mucus extracted through anesthetic stress showed slightly higher antimicrobial activity than the sample obtained through alkali stress. Whereas, in buffered sample, least antimicrobial activity was observed when compared with other samples. The present study demonstrates that Grass carp mucus contains biologically active compounds such as polypeptides having antimicrobial activity against pathogenic bacteria, it may also possess any component at which *Candida albicans* flourished. However, it is necessary to purify the antimicrobial peptides from mucus and to manipulate them for therapeutic use at commercial scale.