

PROTEASE FROM NILE TILAPIA INTESTINE AS LAUNDRY DETERGENT ADDITIVE

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The detergent industry has now emerged as the major consumer of several proteases and an alternative source of these enzymes could be the gut from Nile tilapia. The object of this work was to investigate the stability of these proteases in the presence of surfactant, oxidizing agents and the effect of inhibiting ions. The activity increased about 8% in the presence of Mg⁺⁺ (MgCl₂) and decreased 10% in the presence of Na⁺ (Na₂HPO₄, NaNO₃, NaCl) ions. Acting on BApNA they were inhibited by Benzamidine (91.2%) and TLCK (92.6%), whereas those hydrolyzing Suc-Phe-p-Nan were inhibited by PMSF (96.1%) and TPCK (100%). They were stable in 1% (w/v) Saponin for 120 min. They lost 30 and 50% of initial activity after 120 min incubated with 1% (v/v) Tween 20 and Tween 80, respectively. On the other hand, in the presence of 1% (w/v) SDS they were inactivated about 73% after 30 min. About 65% of initial activity was retained after 30 min in the presence of 5 and 10% (v/v) H₂O₂. These results suggest that proteases, mainly *trypsin-like* and *chymotrypsin-like* enzymes, from tilapia guts can be used as laundry additive.

Key-Words: Protease, laundry additive, Nile Tilapia

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