**Cloning and Expression of Phytase (*PhyA*) Gene for supplementation of Poultry**

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**Background**

Phytase enzyme (*myo*-inositol hexakisphosphate phosphohydrolases) is found naturally in plants and microorganisms, particularly fungi. The interest in these enzymes has been stimulated by the fact that phytase, as a supplement, increases the availability of phosphorus in monogastric animals especially in poultry. It also reduces environmental pollution due to excess phosphate excretion of undigested phytate in the manure in areas where there is intensive livestock production. Thus, the need of the Palestinian poultry industry for phytase enzyme in considerable amounts to supplement the poultry feed and to reduce contamination to the environment is quite important. Here we report the successful cloning of a novel phytase from *Aspergillus Niger* and the subsequent work to produce the phytase enzyme for poultry industries in Palestine.

**Materials and Methods**

The gene *phyA* encoding phytase was isolated from fungus *Aspergillus Niger*. The *A. niger*, cDNA subsequently cloned using pGEM-T-Easy cloning system. The *phyA* gene will be expressed and the purified phytase will be tested for activity on the basis of its ability to hydrolyze phytic acid.

**Results**

A *phytA* gene was successfully cloned from *Aspergillus Niger*. The sequencing results show that the gene is approximately 1.4 kb and contains all functional domains required to hydrolyze phytate. Sequence homology shows that it belongs to *PhytA* gene family. The preliminary date will be presented on the expression of the *PhytA* gene.

**References:**

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