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Phytocystatins are plants cysteine protease inhibitors (CPIs) that are known for their numerous uses in medicine and biotechnology. Different extraction media which include, Sodium Hydroxide, Hydrochloric acid, Sodium Chloride, Sodium phosphate buffer and distilled Water were used to evaluate flower, Leave, root, latex and stem bark of *Moringa oleifera* for inhibitory activity against cysteine protease (Papain enzyme). The extracts of Sodium phosphate buffer from the seeds of *Moringa oleifera* showed higher CPI activity of 11.23 units/mg protein. This was concentrated by cold acetone precipitation and further

subjected to partial purification using ammonium sulphate fractionation and Phenyl sepharose column. The partially purified extract showed a fifty percent inhibitory concentration (IC_{50}) of 17.2±0.3 µg/ml protein against the enzyme. An estimated molecular weight of 13.5 kDa was obtained from electrophoretic analysis of partially purified protein. Inhibitor of Cysteine protease investigated in this work could be useful in biotechnology of traditional medicinal plants, in transgenic crops to arrest the negative pathogenic over expressions of cysteine proteases and as bioinsectides.

Key Words: Cysteine Protease, Inhibition, Phytocystatin, Purification, *Moringa oleifera*