Magnesium is considered to be a natural calcium antagonist owing to two facts; it was approved that magnesium and calcium competes with one another for the same binding site , also , magnesium inhibits calcium induced programmed cell death acting as an anti-apoptotic molecule antagonizing calcium-overload-triggered apoptosis (Eilat-Adar *et al*., 2013; Nicklas *et al*., 2014).

Inside nucleus, about 50% of magnesium is closely associated with nucleic acids and free nucleotides hence magnesium can neutralize negatively charged phosphate groups in these molecules as a cation (Wester, 1987; Pasternak *et al.*, 2010).

Owing to its capability to interact directly with proteins and therefore its ability to modulate histone phosphorylation , magnesium ions can affect cell cycle in the form of Mg-ATP (Pasternak *et al*., 2010).

Furthermore, magnesium is involved in essential processes by activating enzymes important for DNA repair (endonuclease), replication (topoisomerase II) , transcription , and it plays an essential role in maintaining the integrality of double stranded DNA molecules (Pasternak *et al*., 2010).