This study involves a survey covering the synthesis and pharmacological significance of some pyrazole derivatives. The presence of two forms of cycloxygenase enzyme (Cox1 and Cox2) stimulated investigatons to develop more efficient non steroidal anti- inflammatory drugs with reduced side effects compared to the standard NSAIDS through the selective inhibition of one isoform of these enzymes. A number of new pyrazole derivatives were designed, synthesized, and biologically evaluated as anti-inflammatory agents. The most active candidates as anti-inflammatory agents were accordingly tested for their analgesic and ulcreogenic activities. Furthermore, the promising candidates were exposed to molecular modeling simulation using was a docking study on both isozymes of Cyclooxygenase enzyme using the Molegro Virtual Docker software. The results of the in vivo study and virtual screening were coinciding to a great extent.