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Laccase Domain-Containing Protein 1 Promoted Inflammation of Osteoporosis Model via NOD2 Ubiquitination by RIP2

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ABSTRACT The purpose of this experiment was to elucidate the latent influence of Laccase Domain-Containing Protein 1 (LACC1) regulatory loop in the progression of osteoporosis. Serum samples of volunteers were obtained from the researchers' hospital. Mice were induced by an osteoporosis model using ovariectomy. LACC1 mRNA expression levels were up-regulated in patients with osteoporosis. LACC1 protein and mRNA expression levels in mice with osteoporosis were measured. LACC1 promoted inflammation of osteoporosis in the in vitro model. LACC1 promoted osteoporosis in the mice model. LACC1 protein interlinked nucleotide-binding oligomerisation domain 2 (NOD2)/receptor interacting protein 2 (RIP2) protein to reduce ubiquitination of NOD2. NOD2/RIP2 participated in the effects of LACC1 in the model of osteoporosis. These findings suggest that LACC1 promoted inflammation of the osteoporosis model via the induction of NOD2-RIP2 signalling by the inhibition of NOD2 ubiquitination. The inhibition of LACC1 regulatory loop provides new targets for treatment of osteoporosis.