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Poster Sessions

CNB-001, a synthesized pyrazole derivative of curcumin, inhibits thrombin-induced nitric oxide production in primary cultured rat microglia

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We have recently found that CNB-001, a pyrazole derivative of curcumin, suppresses lipopolysaccharide (LPS)-induced nitric oxide (NO) production in cultured microglia, demonstrating that it exerts anti-neuroinflammatory effects by regulating microglial activation. The present study was undertaken to investigate whether CNB-001 is also effective for microglial activation induced by other stimulants than LPS. Treatment of primary cultured rat microglia with thrombin (0.1-30 U/mL), a serine protease that has been proposed as a mediator of cerebrovascular injuries, caused the NO production in a concentration-dependent manner. Time-dependent accumulation of NO production was also detected in microglia treated with thrombin (10 U/mL) in 0-48 h, but not in untreated cells. CNB-001 (0.1-10 μ M) suppressed the NO production in a concentration-dependent manner. Western blotting analysis demonstrated that thrombin (10 U/mL) induced the inducible NO synthase (iNOS) expression in the cells, which was markedly inhibited by the presence of CNB-001 (10 μ M). These results suggest that CNB-001 exerts anti-inflammatory effects by inhibiting iNOS-mediated NO production in microglia.