Nitric Oxide Production by Substance P Induced-Murine Raw 264.7 Macrophages

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Abstract **-- Substance P is a neuropeptide that release from small-diameter primary afferent neurons during neurogenic inflammation. During this process large amount of nitric oxide (NO) is generated. NO which are produced by activated macrophages are function as effectors molecules and involved in physiological and pathological responses in neural, vascular and immune system. Thus, measurement of NO levels has captured our attention for this study. This study was aimed to investigate the effects of Substance P on nitrite levels through Griess assay method. Quantification of NO, by measuring its oxidation product, nitrite was determined through the Griess reaction by a microplate assay method. Before Griess assay was performed, RAW 264.7 macrophages were introduced with 10-100nM of substance P for different incubation time (10 minutes to 4 hours). The results show that neither of short incubation time (10, 20 and 30 min) nor long incubation time (1, 2 and 4 h) of murine RAW 264.7 cell lines with substance P show any significant effect on NO release. Our current findings suggest that murine RAW 264.7 cell lines -induced substance P did not undergo inflammatory process since there is no nitrite levels in supernatant were detected as significant to control group.**

Keywords **-- Substance P, Neuropeptide, Neurogenic inflammation, nitric oxide, RAW 264.7 macrophages**