# Association of Plasma Interferon-a(IFN-a) with C-Reactive Protein (CRP) Level and Disease Activity in Systemic Lupus Erythematosus (SLE) Patients

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## Abstract

**Background**: CRP is normal or only slightly increased in active SLE. It is presumed that IFN-α may inhibit the transcription process during CRP synthesis. There is also increasing in IFN-αgene expression in active SLE. This study examined the correlation of plasma IFN-α with CRP and SLE activity.

**Methods**:Forty SLE patients were included. SLAM and SLEDAI were used to measure SLE disease activity. Laboratory tests were examined at dr.Soetomo Hospital Surabaya. CRP was measured using immunoturbidimetry. C3 and C4 were measured by radial immunodiffusion technique. IFN-αwas measured using ELISA.

**Results and conclusion:**Twenty-six patients from the outpatient clinic and 14 from wards were included from August 2019 to February 2020. The median age was 31.5 years old. The median SLAM score was 8.5. Mean CRP was 5.19±2.69 mg/L. Median plasma IFN-α was 46.02 (16.43-177.96). Spearman correlation test revealed a moderate negative correlation between plasma IFN-α and CRP level (p=0.003; r=-0.455). A moderate positive correlation was showed between plasma IFN-α level and SLAM score (p=0.001; r=0.568). No correlation found between CRP and SLAM. There was a strong correlation between complement levels with SLEDAI. Linear regression revealed a significant association of IFN-α and C3 (not C4) level with SLEDAI.

***Keywords:*** *interferon-a, CRP, systemic lupus erythematosus, disease activity*

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## Introduction

Interferon-α (IFN-α) is a pleiotropic cytokine that can influence various cells involved in systemic lupus erythematosus (SLE) pathogenesis. A high level of IFN-α can directly cause immune dysregulation in SLE from various pathways. IFN-α may activate T-cell and B-cell, hinder Treg, and increase toll-like receptor (TLR) signaling[1-3]. C-reactive protein (CRP), as one of the acute-phase reactant, will increase