# Detection of Macrophage Colony Stimulating Factor in Systemic Lupus Erythematosus Patients and its Relation to Disease Activity and Severity

Thesis

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**By**

**Noura Saad Hussein Moussa**

(M.B.B.Ch)

Faculty of Medicine, Fayoum University

**Supervised by**

**Prof. Dr. Yasser Ezzat Taha Mohammed**

Professor of Rheumatology and Rehabilitation

Faculty of Medicine, Fayoum University

**Dr. Nermeen Ahmed Fouad Hossny**

Assistant professor of Rheumatology and Rehabilitation

Faculty of Medicine, Fayoum University

**Dr. Omayma Owees Abdelaleem Khaleefa**

Assistant Professor of Biochemistry and Molecular Biology

Faculty of Medicine, Fayoum University

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Faculty of Medicine

Fayoum University

## Abstract

**Background:** Systemic lupus erythematosus (SLE) is a multi-system chronic autoimmune disease, with yet unclear and complex etio-pathogenesis, variable clinical presentations, severity, and treatment responses, with predominant female affection in the reproductive period.

**Aim of the work:** To assess the serum level of macrophage colony stimulating factor (M-CSF) among SLE patients, and its relation to disease activity, renal involvement, peripheral vascular affection, and other disease characteristics.

**Patients and methods:** The current study included 50 SLE patients and 50 healthy controls. The patients included were diagnosed according to the 2019 European League Against Rheumatism/American College of Rheumatology classification criteria for SLE diagnosis. All patients were subjected to full history taking, clinical examination, laboratory investigations, nailfold capillaroscopy assessment, and renal biopsy, which was done when indicated and classified according to the 2004 International Society of Nephrology/Renal Pathology Society (ISN/RPS) classification of lupus nephritis. Disease activity was assessed by Systemic Lupus Erythematosus Disease Activity index with Safety of Estrogens in Lupus Erythematosus National Assessment (SLEDAI-SELENA) modification. M-CSF levels were measured (in patients and controls) using Enzyme linked immunosorbent assay (ELISA) technique.

**Results:** The mean age of SLE patients was 33.9±10.8 years; they were 47 females (94%) and 3 males (6%); disease duration was 5.9±5.4 years; and 12% of SLE patients had a positive family history. Cutaneous and musculo-skeletal manifestations were among the most common SLE clinical manifestations. Class IV was the most common histopathological finding among LN classes. Abnormal nailfold capillaroscopy findings were found in 92% of SLE patients; minor changes were the most common findings, while

major changes were less common. M.CSF levels were elevated among SLE patients than healthy controls with a p-value <0.05, and their levels significantly related to different renal biopsy classes, with higher levels in patients with class V, IV, and III, respectively, and lower levels in patients with class I and II LN.

**Conclusion:** M.CSF level was elevated among SLE patients compared with healthy controls with a p-value <0.05, and was significantly related to different renal biopsy classes.

**Keywords:** Systemic lupus erythematosus **(**SLE), macrophage colony stimulating factor (M-CSF), and nailfold capillaroscopy (NFC).