

## New azo-azomethine derivative of sulfanilamide :Synthesis, Characterization, Spectroscopic , Antimicrobial and Antioxidant activity study

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**Abstract.** A series of azo-azomethine compounds (Sb1- Sb5) have been synthesized with magnificent yield by condensation reaction of 4-((3-formyl-4-hydroxy-5-methoxyphenyl)diazenyl) enzenesulfonamide and aniline derivatives .The new azo compound was prepared from sulfanilamide by converting it to diazonium salt followed by coupling reaction with 2-hydroxy-3-methoxybenzaldehyde in alkaline medium. The structures of synthesized azo and azo-azomethine compounds have been established based on their spectral data (FT-IR,<sup>1</sup>HNMR ,<sup>13</sup>CNMR)and elemental analysis (C,H,N).The purity of compound and evaluation of R<sub>f</sub> value were determined by TLC. The antimicrobial activity of azo-azomethine compounds have been tested in vitro against bacteria (*Staphylococcus aureus* , *Escherichia coli* and *Klebsilia pneumonia* ) and fungi ( *Candida glabrata* ,*Candida albicane* and *Aspergillus niger*) by agar diffusion method, to assess their inhibiting potential. Also the antioxidant efficiency of azo-azomethine compounds have been calculated.

**Keywords:** azo-azomethine , azo dyes, sulfanilamide, aniline derivatives.

### Introduction

Azo compounds are characterized by the presence of the azo moiety ( -N=N- ) in their structure, conjugated with two, distinct or identical, mono- or polycyclic aromatic or heteroaromatic systems. Because of their specific physico-chemical properties and biological activities, they have got a broad application in pharmaceutical, cosmetic, food, dyeing or textile industry and analytical chemistry. However, the most typical and popular field of utility remains as their coloring function . Medical importance of azo compounds is well known for their antibiotic, antifungal and anti-HIV properties.[1 ,2]

The azo dye derived from the antibacterial drugs sulfonamides were the first effective chemotherapeutic agents that could be used systemically for the cure of bacterial infection in humans. A series of azo dyes containing the sulfonamide functional group were synthesized as potential antimicrobial agents. Today, there are a few sulfonamides and especially sulfonamide–trimethoprim combination that are used extensively for opportunistic infection in the patients with AIDS

