Synthesis, characterisation and antibacterial activity of Schiff base derived from S-methyldithiocarbazate and methylisatin.

ABSTRACT

New tridentate nitrogen–oxygen–sulfur Schiff base has been prepared from the condensation reaction of S-methyldithiocarbazate and methylisatin. The compound crystallized in triclinic crystal system with space group P − 1, Z = 2, V = 612.92(3) Å3 and unit cell parameters a = 6.8540(2) Å, b = 8.3022(2) Å, c = 11.5243(4) Å, α = 79.8186(13)°, β = 90.5224(14)° and γ = 72.1362(13)°. Crystal structure reveals that the compound exists in the thione form with the methylisatin moiety is trans with respect to the C3–N2 and C3–S4 bonds whereas the methyl group of the dithiocarbazate moiety is cis with respect to the C3–N2 and C3–S5 bonds. The Schiff base was found to be selectively active against the selected Gram positive bacterial strains (Bacillus subtilis and Staphylococcus aureus) with the inhibition zones of 16 and 12 mm, respectively.

Keyword: S-methyldithiocarbazate; Methylisatin; Actibacterial activity.