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Synthesis and Study of 5 – [(Phenylsulfonyl)Amino] – 1,3,4 – Thiadiazole – 2 – Sulfonamide as Potential Anti – Pertussis Drug Using Chromatography and Spectroscopy Techniques

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Editorial

Pertussis is a respiratory transmitted disease affecting approximately 23% of the worlds' population. It is causes by Bordetella Pertussis [1-23]. The emergence of Multiple-Drug-Resistant (MDR) Pertussis has focused the attention of the scientific community thought the world on the urgent need for new anti–Pertussis drugs. In pursuit of this goal, our research efforts are directed toward the discovery of new chemical entities that are effective as anti–Pertussis drugs. During recent years, there have been intense investigations of different classes of 1,3,4-thiadiazole-2-sulfonamide compounds and derivatives such as 5-[(Phenylsulfonyl)amino]-1,3,4-thiadiazole-2-sulfonamide many of which are known to possess interesting pharmaceutical, biological, biochemical and biomedical properties suchlike anti–microbial, anti–Pertussis and anti–inflammatory activities. It should be noted that the purity of the synthesized compound was confirmed by High Performance Liquid Chromatography (HPLC) and also Thin–Layer Chromatography (TLC). Furthermore, the molecular and chemical structure of compound was characterized by ^{1}HNMR, ^{13}CNMR, Attenuated Total Reflectance Fourier Transform Infrared (ATR–FTIR), FT–Raman and HR Mass spectra.

On the other hand, Bordetella Pertussis remains a leading infections cause of death in the world today [23-43]. The emergence of Pertussis is increasing worldwide, partly due to poverty, inequity and rather to the HIV/AIDS pandemic, which greatly increase the risk of infection proceeding to overt disease. In particular, the appearance of Multi–Drug–Resistant (MDR) strains of Bordetella Pertussis, which exhibit in vitro resistance to at least three major anti–Pertussis drugs (usually Azithromycin, Erythromycin and Clarithromycin) and cause intractable Pertussis, has greatly contributed to the increased incidence of Pertussis. In addition, the development of drug–resistant strains of Bordetella Pertussis species has contributed to the inefficiency of the conventional anti–Pertussis therapy. Therefore, it seems that it is still necessary to research for novel anti–Pertussis drugs. In continuation of our research plan to discover, synthesis and study on a new anti–Pertussis drug, here in we would like to report the synthesis of the 5–[(Phenylsulfonyl)amino]–1,3,4–thiadiazole–2–sulfonamide as potential anti–Pertussis drug effecting Pertussis using chromatography and spectroscopy techniques.

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