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**MONITORING THE QUALITY OF MINERAL BOTTLED
WATER CONCERNING TO POTENTIAL PATHOGENIC
BACTERIA AND NITRATE LEVELS**

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The diversity of cultured pathogenic bacteria in the bottled mineral water (BMW) was investigated using selective media. The pure isolates from these selective media, which showed hemolytic activity on the blood agar media and antibiotic resistance, were identified by 16S rRNA gene technique. The seven obtained strains were belonged to the genus *Pseudomonas*, *Bacillus*, *Acinetobacter*, *Stenotrophomonas*, and *Exiguobacterium*, and were mostly closed to the pathogenic strains. The increasing of ozone concentration from air-fed ozone generators eliminate the growth of bacteria included the pathogenic bacteria, but in other side it increases the amount of nitrates and nitrites in the final product of the BMW. These findings revealed that the BMW either has potential pathogenic bacteria or high levels of nitrates and all these products may effect on the health of the end user.

Keywords: bottled mineral water, pathogenic bacteria, 16S rRNA gene sequence, ozone and nitrates.

Introduction

Bottled mineral water (BMW) as an oligotrophic environment should have viable bacterial cell content as low as 10cfu ml⁻¹ [1 – 2]. These lows, count of native organisms are of little concern to the healthy consumer. Bacterial communities of BMW and tap water originated from the same sources may contain the same bacterial communities [3]. Waterborne pathogens may infect 350 million people within those people 10 – 20 million succumbing to severe cases [4]. This phenomenon is far from being restricted to developing countries but also threatens developed countries. From 1991 to 1999 in the USA 430,000 cases were infected by 126 waterborne infectious diseases outbreaks [5]. BMW represent one of the largest sectors by volume in the Egyptian soft drinks market [6]. The treatments for producing bottled water processed by sedimentation,

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