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Short Communication

Air Pollution

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Since the early industrial revolution, air quality is deteriorating day by day. Negative impacts on the environment as well as on air quality are mainly due to unplanned development. Pollution problems have largely resulted from industry and domestic heating, principally due to emission of sulphur dioxide. In recent years, however, the transportation sector has become the most significant source of both primary pollutants, such as polycyclic aromatic hydrocarbons (PAHs) and nitrogen dioxide, and secondary pollutants, like ozone. Air pollution affects millions worldwide and its devastating effects on human health are serious. Previous studies have reported an increase in morbidity and mortality due to air pollution, increased risk of lung cancer, genotoxicity in various tissues, and mutations [1]. Death was strongly associated with the levels of fine, inhalable and sulfate particles more than with the levels of aerosol acidity, sulfur dioxide, total particulate pollution, or nitrogen dioxide (Table 1). The carcinogenicity of the PAH is dominated by small particles [2].

The PAHs are the products of the incomplete combustion of fossil fuels have been detected in particles suspended in the atmosphere in urban areas. A risky PAHs concentration (above 100 ng/m^3) was recorded in Europe 1960. Haze episodes cause a significant increase in total suspended particles and their levels reached 1033 gm^{-3} with more than 100 substances identified in wood smoke, both organic and inorganic, from which a PAH known as benzo(a)pyrene is a potent carcinogen. The explosive increased numbers of cars on the road and diesel engine exhaust emissions are a major contributor to high risky environment pollution [3]. The US Environmental Protection Agency (EPA) describes the level of 'emergency' that the PM10 concentration exceeds 500 µg/m^3 [1].

	Size	Site	Residence
Air dust (Particles)	> 10 µm	Nose, mouth, throat, larynx	Several hours
	< 10 µm	Tracheo-Broncheal	24 hours
	6 - 8 µm	Alveolar area	Days to years
	2.5 µm (cigarette smoke)	Deeply in Alveoli - Blood stream	Years

Table 1: Fate of air dust inside the body.

Negative smoking and the inhalation of PAHs in the cigarette in concomitant with low quality polluted air could worsen the impact of morphologic changes in tissues. It is necessary to alleviate PAH-exposure symptoms by improving the immune system by using herbs, e.g. curcumin, as an antioxidant promoter [4-6].

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