

Inspiration in the Medical Science and Art:

Mustafa Kemal Atatürk

DEAR EDITOR,

The co-authors of this letter are scientists from Bosnia and Herzegovina, who were educated in the Republic of Turkey or, now, some of them participate in one of the higher education institutions within Turkey. We express our respect for the Turkish State, which has given us a great deal, among other things, through the grandiose character of Mustafa Kemal Atatürk. Our claim is supported by our original art work that symbolizes the fusion of science and art in the memorial to Mustafa Kemal Atatürk (Fig. 1 and Fig. 2). This agar art portrait of Mustafa Kemal Atatürk was painted by using living microorganisms on Hektoen Enteric Agar (HEA) media (King and Metzger 1968; Waltman, 2000).



Figure 1. Medical Science and Art: Mustafa Kemal Atatürk

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Letter to Editor

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This media is a selective as well as a differential media for the isolation and differentiation of *Salmonella* and *Shigella* from patient specimens. HEA contains indicators of lactose fermentation and hydrogen sulfide production; as well as inhibitors to prevent the growth of Gram-positive bacteria. It is named after the Hektoen Institute in Chicago, where researchers developed the agar (King and Metzger, 1968; Waltman, 2000).

The media contain various sugar sources (lactose, sucrose, and salicin), none of which can be used by either *Shigella* or *Salmonella*, but the medium also includes peptone, which can be used as a carbon source. Since most bacteria can use the sugars in preference to peptone, these bacteria acidify the medium and turn a pH indicator yellow or red. Peptone metabolism by *Shigella* and *Salmonella* alkalises the medium, turning a pH indicator blue (King and Metzger, 1968; Waltman, 2000).

The presence of thiosulfate or ferric ammonium citrate in the medium produces a black precipitate in the presence of H₂S (hydrogen sulphide), allowing *Shigella* – which does not produce H₂S, and appears as green colonies – to be distinguished from *Salmonella* – which does produce hydrogen sulfide and appears as black colonies (King and Metzger, 1968; Waltman, 2000).

The bacteria used to paint this portrait was the *Salmonella* Enteritidis strain. It used 0.1µl loops to inoculate the bacteria onto the agar plate. After incubation of the plate for 18-24 hours at 35 ± 2 °C in an aerobic atmosphere, colonies of this bacterium appear typically blue-green, as it cannot ferment the lactose, with black centres from the production of H₂S (hydrogen sulphide) gas (King and Metzger, 1968; Waltman, 2000).



Figure 2. Medical Science and Art: Mustafa Kemal Atatürk

Mustafa Kemal Atatürk (he was given the name Atatürk, meaning 'Father of the Turks'), the founder of the Turkish Republic and its first President, stands as a towering figure of the 20th Century. He achieved so much in a short period of time, transformed the life of a nation decisively, and inspired the world profoundly (Ramazan, 2019).

As President for 15 years, until his death in 1938, Mustafa Kemal Atatürk introduced a broad range of swift and sweeping reforms - in the political, social, legal, economic, and cultural areas virtually unparalleled in any other country (İnan, 2007).

The world honours his memory as a foremost peacemaker who upheld the principles of humanism and the vision of a united humanity. Tributes have been offered to him through the decades by many world statesmen. It is fitting that there should be high praise for Atatürk, an extraordinary leader of modern times, who said in 1933: "I look to the world with an open heart full of pure feelings and friendship" (Hanioglu, 2011).

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- **Conflict of interest**, Authors have no conflicts of interest to declare.

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