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(54) **PHARMACEUTICAL MICRONUTRIENT COMPOSITION AND ITS USE TO SIMULTANEOUSLY INHIBIT MULTIPLE CELLULAR MECHANISMS OF INFECTIVITY CAUSED BY CORONAVIRUS, ITS VARIANTS AND MUTANTS**

(71) Applicant: **Matthias W Rath**, Aptos, CA (US)  
(72) Inventors: **Aleksandra Niedzwiecki**, Aptos, CA (US); **Matthias W Rath**, Aptos, CA (US); **Vadim O Ivanov**, Castro Valley, CA (US); **Anna Goc**, Sanjose, CA (US)  
(73) Assignee: **Matthias W. Rath**, Henderson, NV (US)

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See application file for complete search history.

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*Primary Examiner* — Sabiha N Qazi

(74) *Attorney, Agent, or Firm* — Geeta Kadambi; Riddhi IP LLC

(57) **ABSTRACT**

Pharmaceutical micronutrient composition including mixture D in this study helps to mitigate, inhibit, prevent and stop diseases caused by viral infections. The middle east respiratory syndrome-related coronavirus and severe acute respiratory syndrome-related coronavirus as well as their variants and mutants affecting mammals and causing infection are successfully treated using mixture D. Mixture D contains key micronutrients such as an ascorbate, N-acetylcysteine, theaflavins, resveratrol, cruciferous plant extracts, curcumin, quercetin, naringenin, and baicalin and a combination thereof. Additional micronutrients were tested with Mixture D and seemed to have beneficial effects.

**14 Claims, 18 Drawing Sheets**

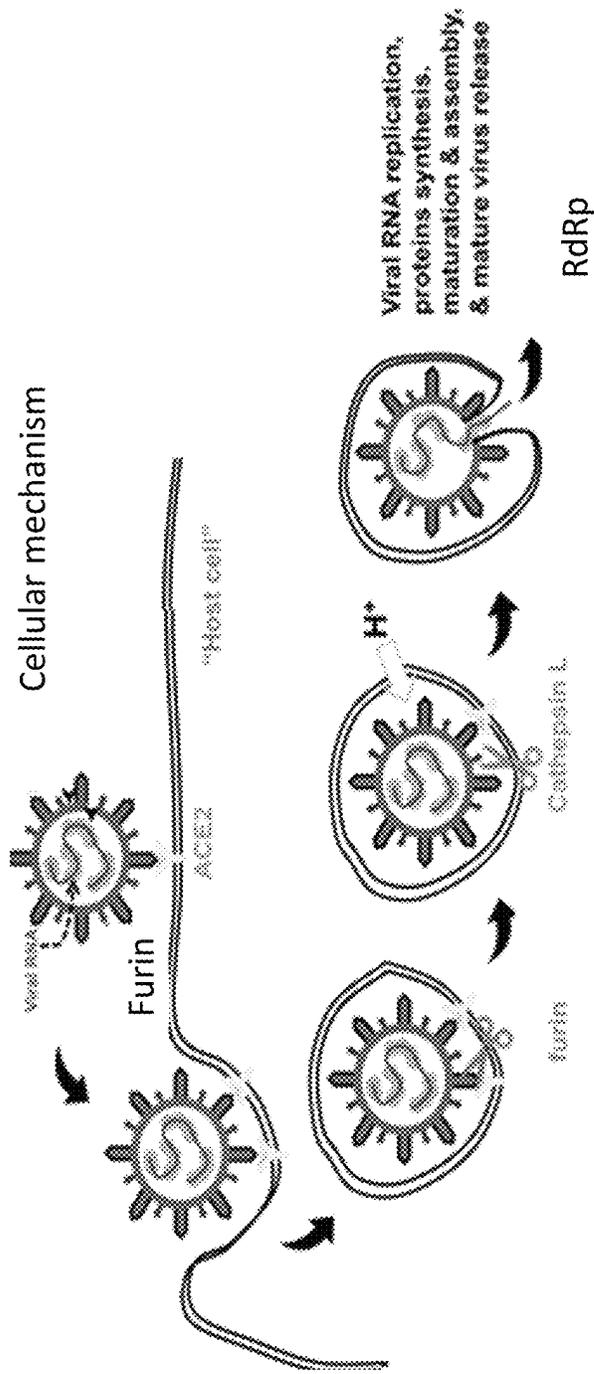


Figure 1A























































14. The pharmaceutical micronutrient composition according to claim 11, wherein the pharmaceutical micronutrient composition is used to treat a human with a Middle East respiratory syndrome-related coronavirus (MERS-CoV), SARS CoV, SARS-CoV2 and their variants and mutants that use the angiotensin converting enzyme 2 (ACE2) receptor on the surface of epithelial cells, endothelial cells and other cell types, for viral entry.

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