A Review of the Validity of Ivermectin for COVID-19 treatment or prevention

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ABSTRACT

COVID-19 is a dangerous disease created by the acute respiratory syndrome coronavirus (SAR-CoV-2). COVID-19 is spread via airborne droplets with people who have close contact with you, spread via speaking, breathing, coughing, and sneezing. To date, five million people worldwide have passed away from COVID-19. Accumulating evidence suggests that getting vaccinated, staying distanced, wearing face masks, and washing hands which are the best way to prevent COVID-19 transmission in a scientific way and with approval by CDC and FDA. However, with so much information being circulated, people are also led to follow and listen to the wrong treatments or try to figure out the way to treat COVID-19. One of these pieces of misinformation about COVID-19 treatment has been the use of Ivermectin to treat and prevent COVID-19. In this review, I reviewed the evidence for the effectiveness of Ivermectin to treat or prevent COVID-19. Ivermectin is an anti-parasitic drug which is used to treat infections caused by the parasitic worms strongyloidiasis and onchocerciasis. According to the National Poison Data System, there was a 245% jump in reported exposure cases from taking Ivermectin from July to August, 2021- due to false claims that it might treat or prevent COVID-19. Moreover, two peoples in New Mexico passed away after being hospitalized with ivermectin toxicity. Ivermectin works by increasing the activity of GABA receptors in parasites and helminth which is one of the types of parasite tapeworm. The medication work as a blocker signal between the neuron and the muscle thereby killing parasitic worms, however research has shown that it has no effectiveness in treating or preventing COVID-19. A recent meta-analysis of 8 randomized clinical trials of ivermectin to treat SARS-CoV-2 infection, have 1848 patients with 71 deaths (3.8%), showed that treatment with the drug had no significant effect on survival. The misuse of information that people should use Ivermectin to prevent COVID-19 led to serious illnesses and death, strongly suggesting that people should follow the scientific information when treating their body. The best way to prevent COVID-19 is to follow the approved guidance of the CDC and FDA and to get vaccinated.

METHODS

- Analyze primary articles on the process of SAR-CoV-2 infection and Ivermectin mechanisms in human body

- Review primary articles about how Ivermectin misuse for COVID-19 treatment and prevention.

-Review primary article about COVID-19 vaccination that help with preventing COVID-19 that is approval by FDA and CDC.
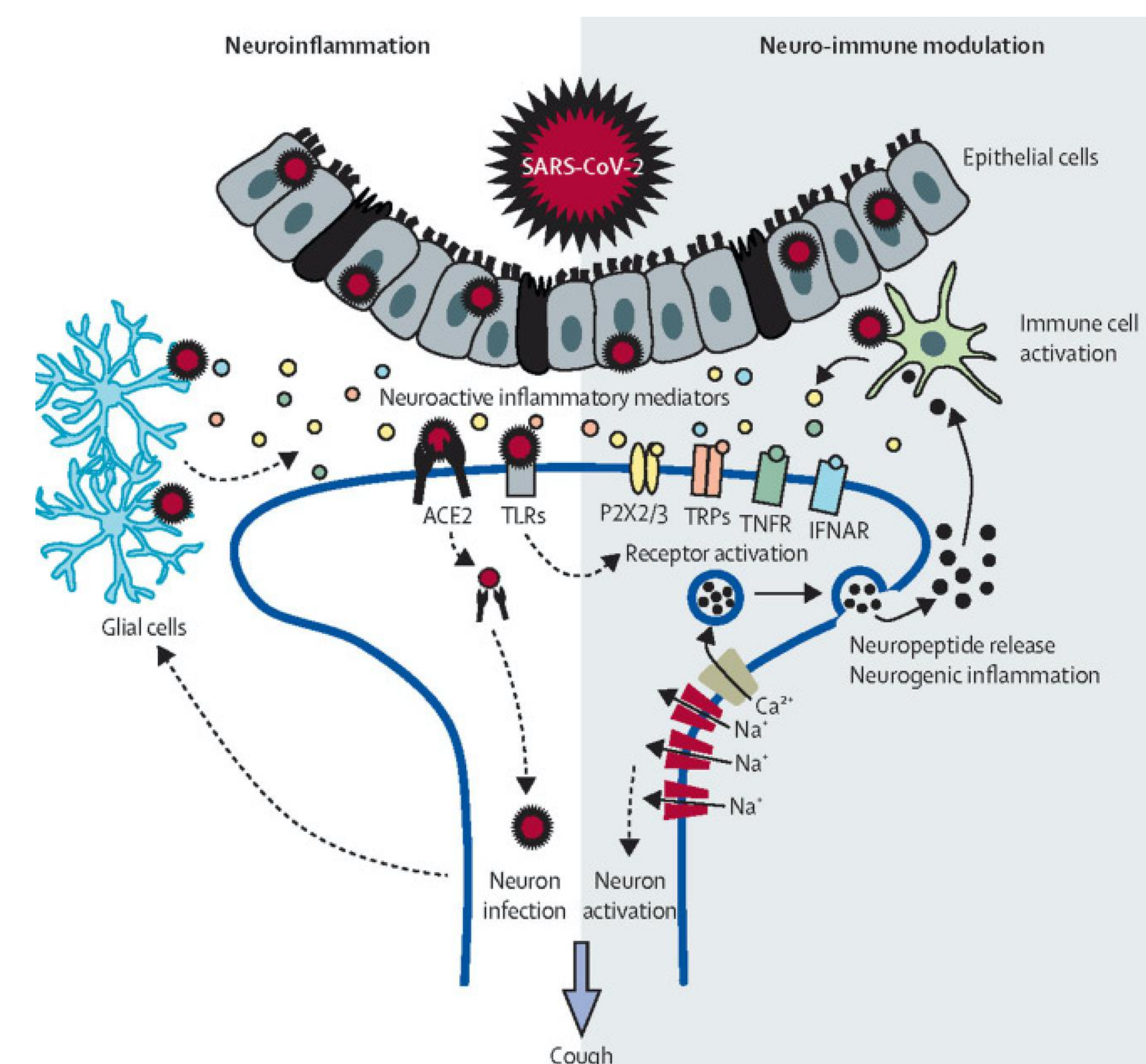
RESULTS

Figure 1: Proposed mechanisms of cough in SARS-CoV-2 infection SARS-CoV-2 might induce cough via neuroinflammatory and neuroimmune mechanism
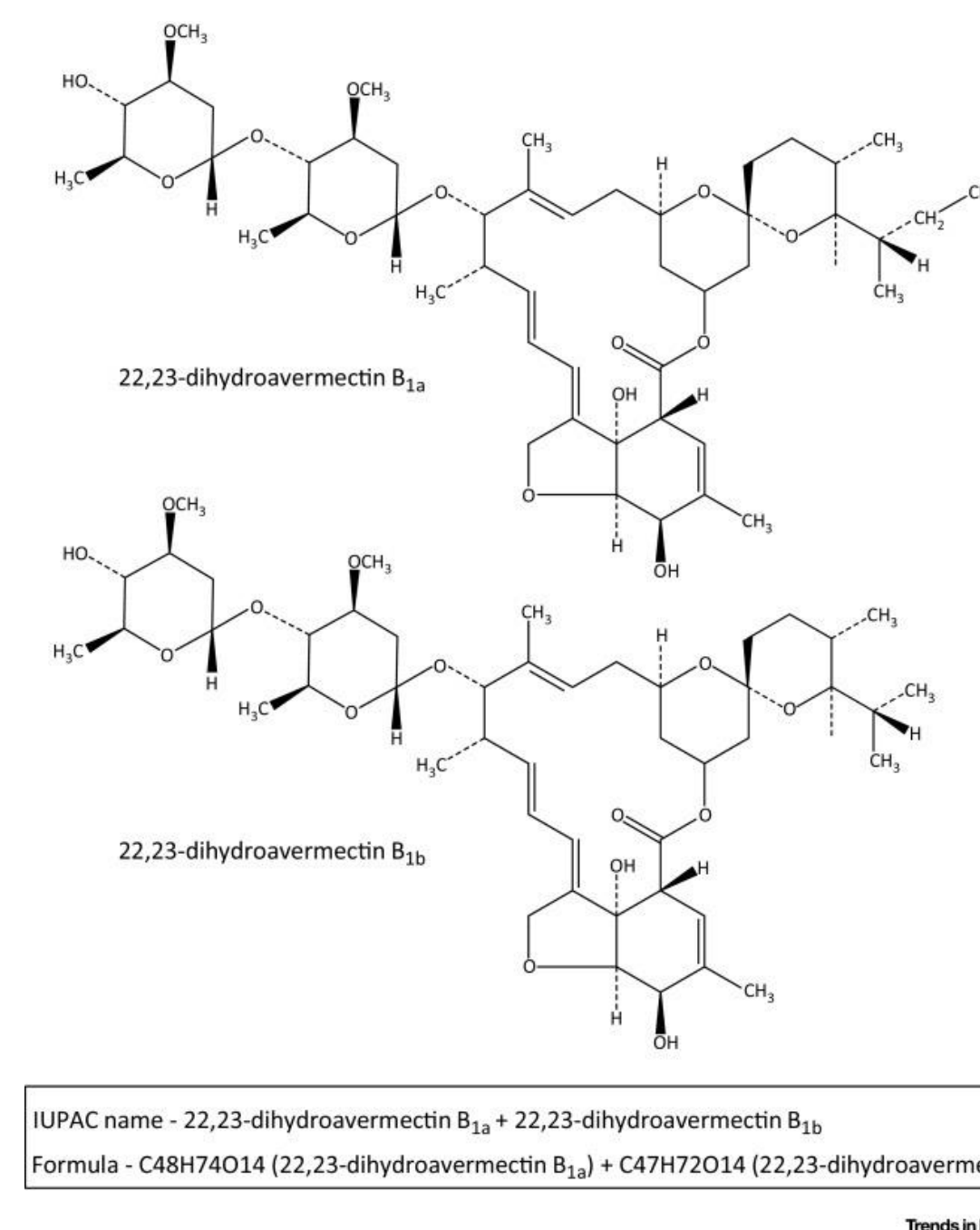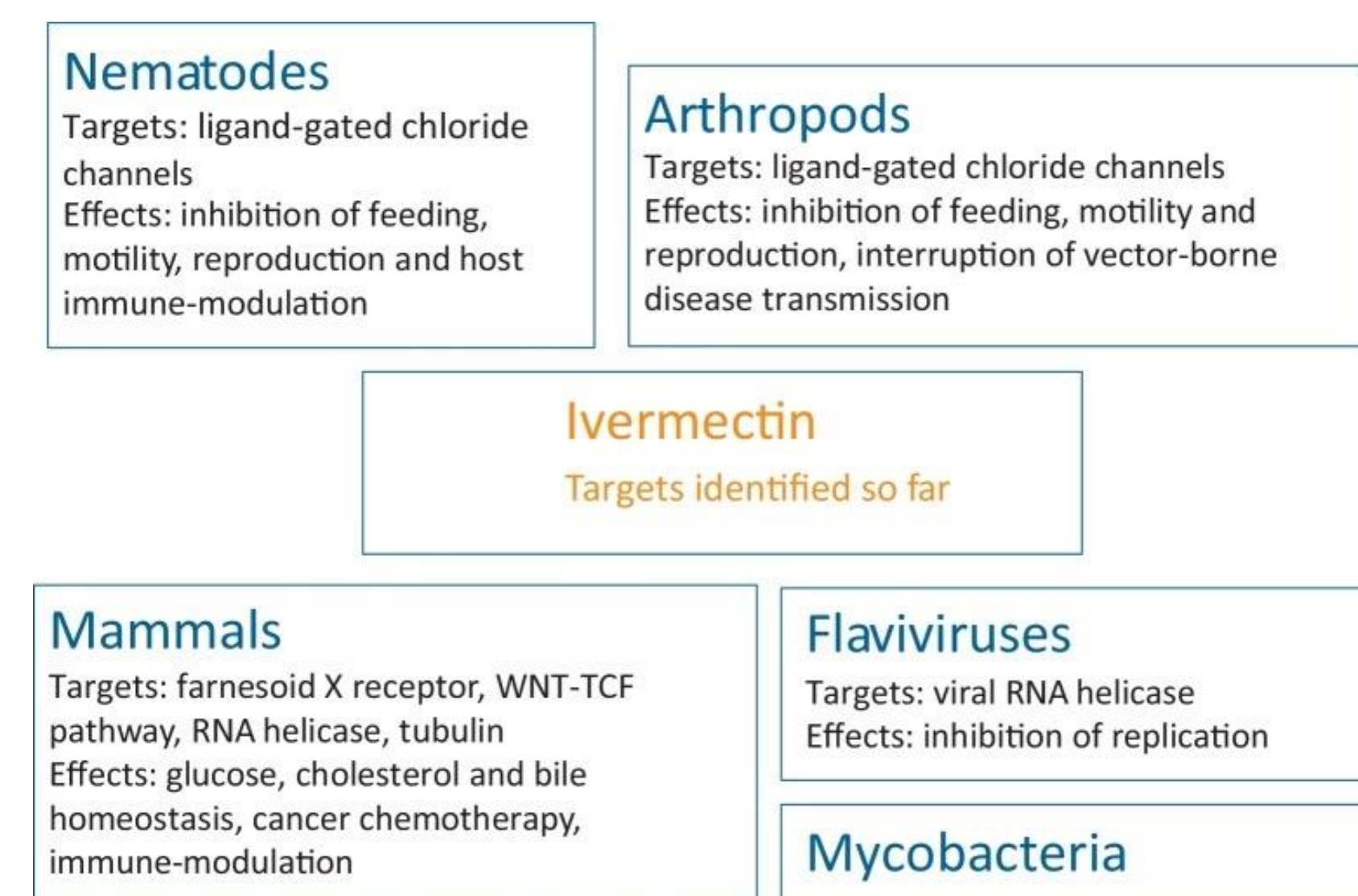

Figure 2: Chemical Structure of Ivermectin

Figure 3: Ivermectin Targets Identified to Date. Ivermectin has a broad range of activities in a variety of systems.
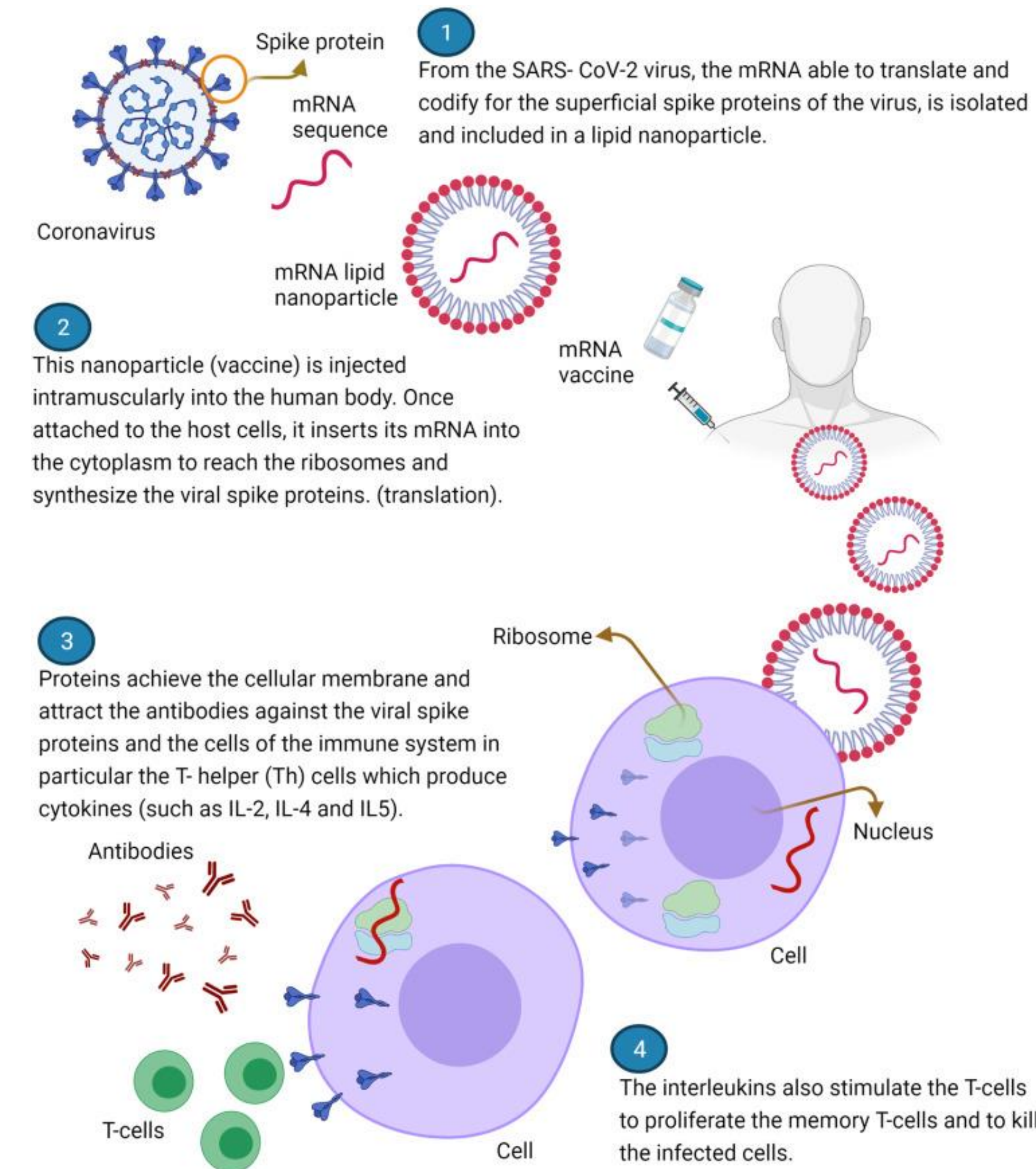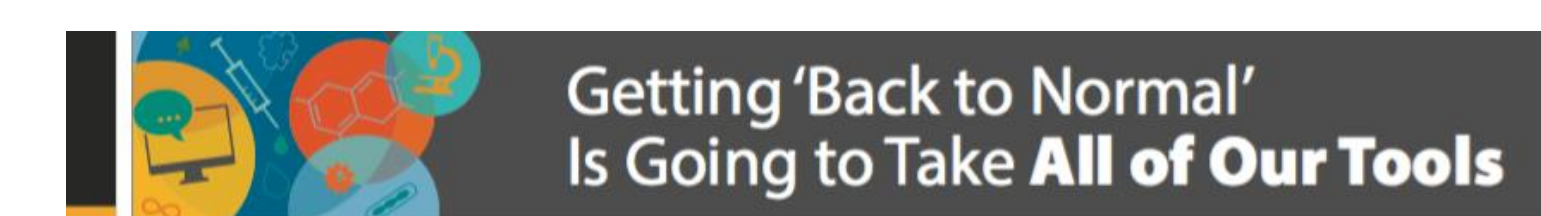
RESULTS

Figure 4: Scheme of mechanism of action of vaccines Pfizer-BioNTech and Moderna

Figure 5: CDC guideline stop spreading COVID-19

CONCLUSION

Ivermectin is not an effective medication to use for COVID-19 treatment or prevention

- It does not target the Angiotensin convert enzyme 2 (ACE) receptor, the protease transmembrane serine protease 2 (TMPRSS2) and interact with sensory neuron (Song et al 2021)
- It does not treat for neuroinflammatory, olfactory, cough, fever and covid symptoms
- It increases the activity of GABA receptor in parasite and helminth

FUTURE STUDY

- Follow the right information and guidelines in a scientific way, such as getting vaccinated, wearing masks, washing hands, staying distance.
- Research for treatments and medications for COVID-19 are under study and clinical trials. There are some medications that are already approved for emergency use such as Paxlovix or Monupiravir which are prescription drugs that must be approved by a doctor.

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