indicate that they provide no apparent clinical benefit and may increase morbidity]. Nafamostat and camostat are a serine protease inhibitor used in the treatment of chronic pancreatitis and reflux esophagitis that are theorized to interfere with SARS-CoV-2 entry into cells, however data from well-designed randomized controlled trials for these drugs are not yet available

[0006] Therefore, there is an urgent need to identify safe and effective approaches to the treatment of COVID-19.

Summary

[0007] The inventive subject matter provides compositions and methods in which a nutritional supplement is provided that is effective in treating viral infections (e.g., coronavirus, HCV, HIV), for example by correcting dysregulation of apoptosis, reducing production of pro-inflammatory cytokines, and increasing production of native anti-viral compounds (e.g., interferon). Such a nutritional supplement can be used in combination with known antiviral therapies (therapeutic antibodies, small molecule antiviral drugs), as well as low level radiotherapy and/or chemotherapy drugs conventionally used in the treatment of neoplastic disease (e.g., cancer).

[0008] In one aspect, the present disclosure refers to use of a nutritional supplement comprising fish oil and selenium, in the manufacture of a medicament for treating a viral infection or sequelae of the viral infection, wherein the nutritional supplement is to be provided in an amount effective to treat the viral infection or sequelae of the viral infection, wherein the viral infection results from infection with a virus that induces a dysregulation of apoptosis in a cell infected with the virus, and wherein the nutritional supplement provides fish oil and selenium in quantities sufficient to modify an apoptic event in the cell infected with the virus upon administration. One example of the inventive concept is a method of treating an individual for a viral infection by obtaining a nutritional supplement that includes fish oil and selenium (e.g., in the form of selenium yeast), and administering the nutritional supplement to the individual in an amount effective to treat the viral infection or sequelae of the viral infection. The viral infection can result from infection with a virus that induces a dysregulation of apoptosis in a cell infected with the virus, where the nutritional supplement provides fish oil and selenium in quantities sufficient to modify an apoptic event in the cell infected with the virus upon administration. In some examples the amount of fish oil and selenium is also selected to reduce serum concentration of a pro-inflammatory cytokine. In some examples selenium is provided at from 1,000 µg to 10,000 µg per day, and/or fish oil at from 1,000 mg to 20 mg per day. The nutritional supplement can also include coenzyme Q10 (e.g., from 1 mg to 5,000 mg coenzyme Q10). In some examples the nutritional supplement can include three or more components listed in Table 1. Contemplated viral infections include those resulting from infection with a coronavirus (e.g., SARS-CoV-2), HCV, and/or HIV. Such treatment can be applied to an active

infection, including asymptomatic infections. In other examples such treatment can be prophylactic. In some examples the nutritional supplement can be provided in combination with low-dose radiotherapy (e.g., a dose of up to 2 rems, provided as single or multiple doses) and/or a cancer chemotherapy drug (e.g., taxol, adriamycin, and avastin). Such a cancer chemotherapy drug can be provided at a low dose (e.g. from 1% to 50% or less) than dosages applied in treatment of cancer.

[0009] Another example of the inventive concept is the use of a nutritional supplement that includes fish oil and selenium (e.g., in the form of selenium yeast), and administering the nutritional supplement to the individual in an amount effective to treat the viral infection or sequelae of the viral infection. The viral infection can result from infection with a virus that induces a dysregulation of apoptosis in a cell infected with the virus, where the nutritional supplement provides fish oil and selenium in quantities sufficient to modify an apoptic event in the cell infected with the virus upon administration. In some examples the amount of fish oil and selenium is also selected to reduce serum concentration of a pro-inflammatory cytokine. In some examples selenium is provided at from 1,000 µg to 10,000 µg per day, and/or fish oil at from 1,000 mg to 20 mg per day. The nutritional supplement can also include coenzyme Q10 (e.g., from 1 mg to 5,000 mg coenzyme Q10). In some examples the nutritional supplement can include three or more components listed in Table 1. Contemplated viral infections include those resulting from infection with a coronavirus (e.g., SARS-CoV-2), HCV, and/or HIV. Such treatment can be applied to an active infection, including asymptomatic infections. In other examples such treatment can be prophylactic. In some examples the nutritional supplement can be provided in combination with low-dose radiotherapy (e.g., a dose of up to 2 rems, provided as a single or multiple doses) and/or a cancer chemotherapy drug (e.g., taxol, adriamycin, and avastin). Such a cancer chemotherapy drug can be provided at a low dose (e.g. from 1% to 50% or less) than dosages applied in treatment of cancer.

[0010] Various objects, features, aspects and advantages of the inventive subject matter will become more apparent from the following detailed description of preferred examples, along with the accompanying drawing figures.