

Masu binciken sun ce kwayar cutar ta COVID-19 na iya sauyawa a hankali, ta sa ci gaban rigakafin cikin sauƙi

ST Communications

Rabe-Raben Ilahirin Kwayoyin Gado da Kuma Cibiyar Sauyi a cikin Ilahirin Kwayoyin Gadon 30,983 SARS-CoV-2:

Motsawa zuwa Allurar Rigakafi ta Duniya don “Kwayar Cutar da ak Tsare”?

Abstract

Annobar cutar COVID-19 tana ci gaba da taɓarɓarewa tun farkonta a ƙarshen watan Nuwamban na shekarar 2019 a birnin Wuhan na ƙasar Sin.

Fahimtar da kuma sa-ido a kan yadda kwayar halittar kwayar cutar take faruwa, yanaye-yanayenta na wuri, da kwanciyar tsayuwarta yana da matuƙar muhimmanci, musamman wajen daƙile yaɗuwar cutar musamman ga samar da allurar rigakafi ta duniya da take rufe dukkan nau’o’in da suke yawo.

Daga wannan ra’ayi, mun bincika cikakkun ilahirin kwayoyin gadon SARS-CoV-2 guda 30,983 daga ƙasashe 79 da ke cikin nahiyoyi shida kuma muka tattara daga 24 ga watan Disamba 2019, zuwa 13 ga Mayu 2020, bisa ga rumbun bayanar GISAID.

Bincikenmu ya nuna kasancewar ɓangarorin rukunoni 3206, tare da rarraba iri ɗaya na sauyi a yankuna daban-daban.

Abin sha’awa shi ne, an lura da ƙarancin maimaituwar sauyi; sauyi guda 169 kawai ne (kashi 5.27%) suka sami yaɗuwa fiye da kashi 1% na ilahirin kwayoyin gadon.

Duk da haka, an gano sauye-sauye goma sha huɗu waɗanda ba a san su ba (> 10%) a wurare daban-daban tare da ilahirin kwayoyin gadon kwayar cutar; takwas a cikin ORF1ab polyprotein (a cikin nsp2, nsp3, yankin transmembrane, RdRp, helicase, exonuclease, da endoribonuclease), uku a cikin furotin nucleocapsid, kuma ɗaya a cikin kowane sinadaran guda uku:

Spike, ORF3a, da kuma ORF8.

Haka kuma, an gano sauye guda 36 da ba a san su ba a cikin yankin muhimmin ɓangaren kwayar cuta (RBD) na furotin mai kauri tare da ƙarancin yaɗuwa (<1%) a duk nau’o’in kwayoyin gadon, waɗanda huɗu ne kawai za su iya haɓaka ɗaurin SARS-CoV-2 furotin mai kauri ga mai karɓar ACE2 na ɗan’adam.

Wadannan sakamakon tare da bambance-bambancen juyin kwayoyin gado na SARS-CoV-2 suna iya nuna cewa ba kamar kwayar cutar mura ko kwayoyin cutar HIV ba, SARS-CoV-2 yana da karancin sauyi wanda yake ba da yiwuwar haɓaka ingantaccen rigakafin duniya.

Masu binciken sun ce kwayar cutar ta COVID-19 na iya sauyawa a hankali, ta sa ci gaban rigakafin cikin sauki

A cikin shekarar 2020, masu bincike sun lura da kananan sauye-sauye a cikin ilahirin kwayoyin halittar SARS-CoV-2 yayin da take yaɗuwa a faɗin duniya.

Masana kimiyyar sun ce idan kwayar cutar tana da irin wadannan ‘yan sauye-sauye a kan lokaci, haɓaka rigakafin cutar COVID-19 guda ɗaya na duniya zai yi sauki.

A lokacin, kwayar cutar COVID-19, SARS-CoV-2, tana yaɗuwa cikin sauri kuma tana kashe mutane da yawa, kuma masana kimiyya suna aiki tukuru don haɓaka ingantaccen rigakafi.

Sun bi sauye-sauye a cikin ilahirin kwayoyin gado na kwayar cutar kuma sun duba yadda sauye-sauye suka yi sauri a sassa daban-daban na duniya.

An yi nufin bayanin ne don taimaka musu don sarrafa cutar ta COVID-19 da kyau, da kuma samar da rigakafin da zai yi tasiri ga duk nau’o’in kwayar cutar da suke yawo.

A cikin wannan binciken, masu binciken sun bincika sauye-sauye a cikin ilahirin kwayoyin halittar SARS-CoV-2 a sassa daban-daban na duniya.

Sun kuma duba yiwuwar haɓaka rigakafin duniya a kan duk nau’o’in SARS-CoV-2.

Masu binciken sun tattara cikakkun bayanai game da jerin ilahirin kwayoyin gadon SARS-CoV-2 daga ƙasashe 79 a cikin nahiyoyi guda 6 daga wani rumbun bayanai, kuma sun yi nazarin wadannan.

Sun yi nazari a kan nau’in da yaɗuwar canje-canje a cikin kowane ilahirin kwayoyin gadon.

Masu binciken sun kuma kwatanta ilahirin kwayoyin gadon SARS-CoV-2 a duk faɗin ƙasashe, kuma sun sanya bishiyoyin dangi don nuna alaƙa a tsakanin nau’o’in.

Sakamakonsu ya nuna kananan sauye-sauye a cikin ilahirin kwayoyin gadon SARS-CoV-2 a duk ƙasashen da aka yi nazari.

Kananan samfurori (kashi 5.27%) sun sami sauye-sauye a fiye da 1% na dukkanin ilahirin kwayoyin gado.

Ga dukkan nahiyoyin guda 6, masu binciken sun ba da rahoton ‘yan abubuwan da suka faru na sauye-sauye da suke faruwa a wuri guda a cikin ilahirin kwayoyin halitta na kwayar cutar.

Masana kimiyyar sun ce idan sauye-sauyen da yawa suka faru a wuri guda na ilahirin kwayoyin gado iri ɗaya, sababbin nau'oin kwayar cuta na iya tasowa.

Masu binciken sun ba da rahoton cewa kashi 67.96% na duk sauye-sauyen ilahirin kwayoyin gadon da suka lura a cikin bincikensu suna iya shafar jerin furotin a cikin kwayar cutar, amma ba tsarinta ko aikinta ba.

Kashi ɗaya bisa uku na sauye-sauyen na iya shafar tsarin furotin ko aikin kwayar cuta ta COVID-19.

Masu binciken sun gano kawai sauye-sauye guda 2 a cikin ilahirin kwayoyin gado na kwayar cutar da ta zama ruwan dare a cikin nahiyoyi guda 6; wasu sun bambanta a faɗin nahiyoyi.

Sakamakon binciken nasu ya kuma nuna cewa nau'oin kwayar cutar a Afirka na da alaƙa ta kut-da-kut da na sauran nahiyoyi, kuma dukkan nau'oin da suke wasu nahiyoyi sun samo asali ne daga Asiya.

Nau'oin a Arewacin Amurka da Kudancin Amurka da Afirka sun fito ne daga Turai, yayin da wasu nau'oin suna cikin Turai kawai.

Masu binciken sun ce jerin kwayoyin halittar DNA suna sauyawa a cikin wani abu da ake kira 'S furotin', da alama ba zai shafi tsarinsa ba, don haka, ba zai iya yin babban tasiri kan tasirin rigakafin ba.

Masana kimiyya suna da sha'awa a kan sinadarin 'S furotin' a lokacin da suke samar da alluran rigakafi domin shi ne furotin da kwayar cutar take amfani da shi wajen shiga kwayoyin halitta na ɗan'adam.

Binciken ya nuna cewa ba kamar kwayar cutar mura ko kwayar cutar HIV ba, kwayar halittar SARS-CoV-2 ba ta sauya da sauri ba, wanda zai saukaƙe wa masana kimiyya don haɓaka rigakafin cutar COVID-19 na duniya guda ɗaya.

Masu binciken sun ba da shawarar ci gaba da sa-ido a kan sauye-sauyen kwayoyin halittar SARS-CoV-2.