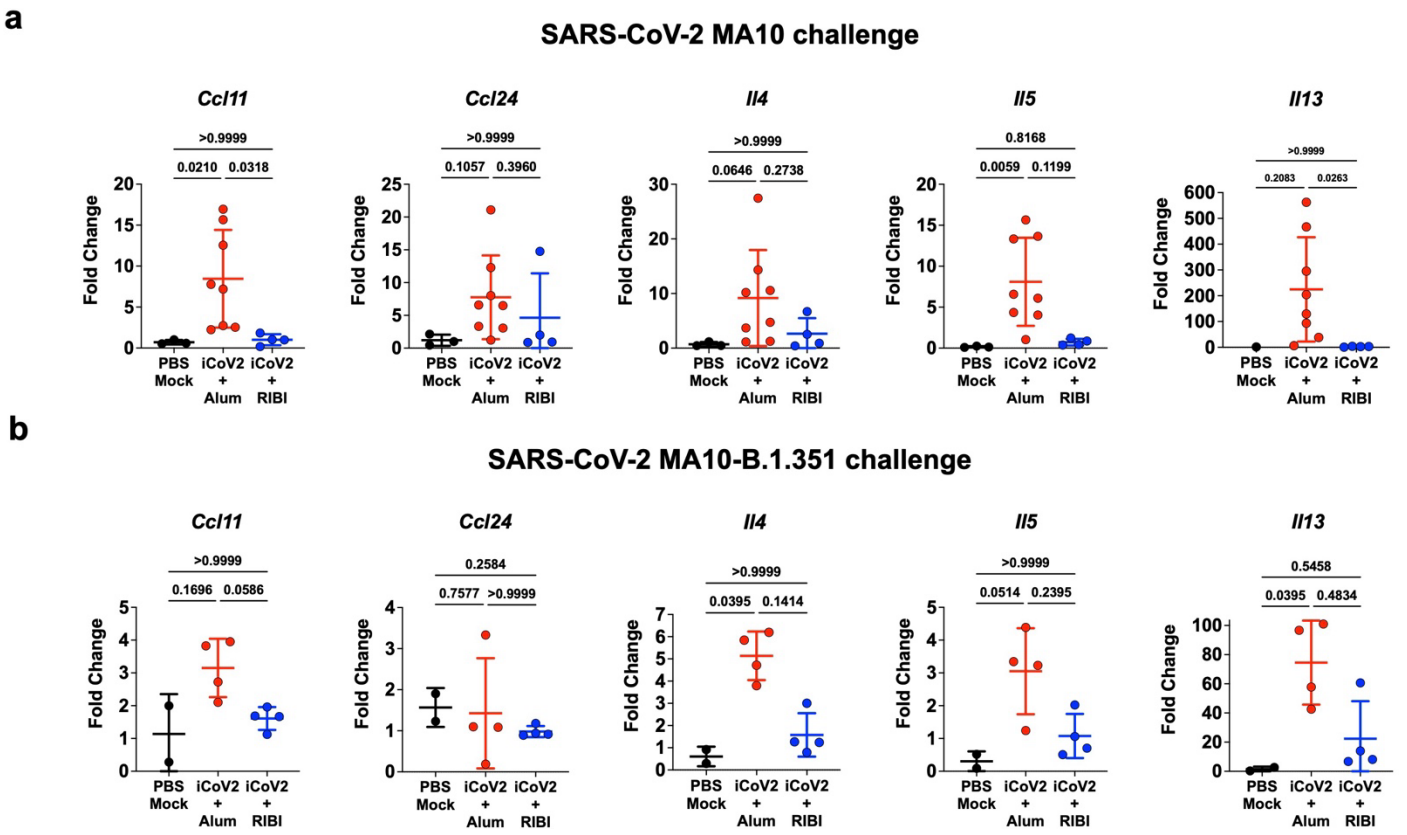
Adjuvant-dependent impact of inactivated SARS-CoV-2 vaccines during heterologous infection by a SARS-related coronavirus

SUPPLEMENTARY INFORMATION



Supplementary Fig. 1: Type 2 cytokine gene expression during SARS-CoV-2 and B.1.351 infection.

Mice were mock-vaccinated with PBS or vaccinated with inactivated SARS-CoV-2 formulated with either Alum or RIBI adjuvants and challenged 3 weeks post-boost with either SARS-CoV-2 MA10 or SARS-CoV-2 MA10-B.1.351. Pulmonary tissue specimens were collected at 5 DPI. Expression of type 2 cytokine genes in pulmonary tissue was measured by qRT-PCR. Results reported as fold change normalized to *Gapdh* expression using ΔΔCt

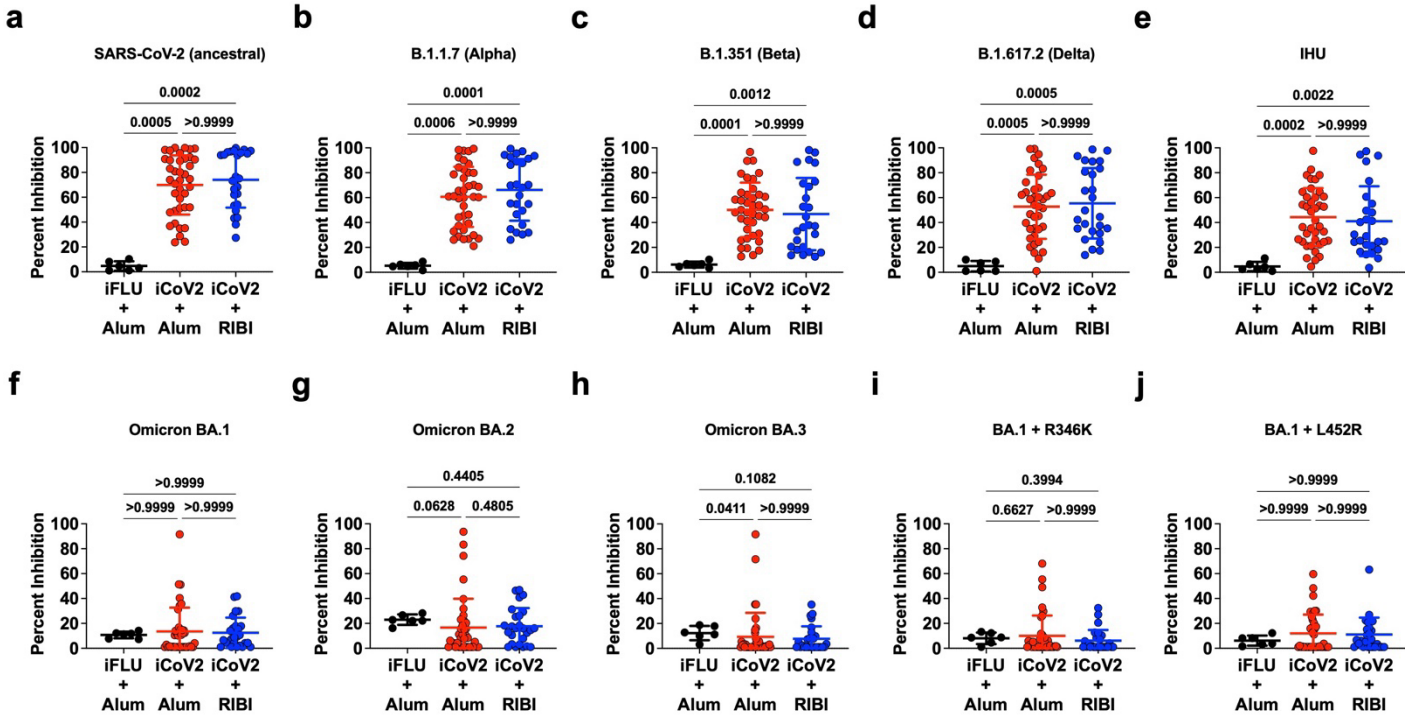
a SARS-CoV-2 MA10 challenge. **b** SARS-CoV-2 MA10-B.1.351 challenge.

Individual data points represent independent biological replicates. Measurements were taken from discrete samples. Analyzed by Kruskal-Wallis test with Dunn's multiple comparisons correction. Solid horizontal lines overlaying data represent group means. Error bars represent group SD. Solid horizontal lines above data represent pairwise comparisons with p-values. Results from 1 animal experiment.

Number of animals used: **(a)** *Ccl11, Ccl24, Il4, Il5* – iFLU + Alum (3), iCoV2 + Alum (8), iCoV2 + RIBI (4); *Il13* – iFLU + Alum (1), iCoV2 + Alum (8), iCoV2 + RIBI (4). **(b)** *Ccl11, Ccl24, Il4, Il5, Il13* iFLU + Alum (2), iCoV2 + Alum (4), iCoV2 + RIBI (4).

Alum = aluminum hydroxide adjuvant*; Ccl11* = C-C motif chemokine 11 gene*; Ccl24* = C-C motif chemokine 24 gene; DPI = days post-infection; iCoV2 = inactivated SARS-CoV-2 vaccine; ; *Il4* = Interleukin 4 gene; *Il5* = Interleukin 5 gene; *Il13* = Interleukin 13 gene; MA10 = mouse-adapted SARS-CoV-2; MA10-B.1.351 = MA10 expressing B.1.351 (Beta variant) spike protein; PBS = phosphate-buffered saline; RIBI = Sigma Adjuvant System adjuvant; SD = standard deviation

Source data are provided as a Source Data file.



Supplementary Fig. 2: Vaccine immune serum surrogate neutralization of SARS-CoV-2 spike proteins.

Serum was collected from mice 3 weeks post-boost vaccination. Serum capacity for inhibition of ACE2 binding to SARS-CoV-2 and variant spike proteins was evaluated using the multiplexed Meso Scale Discovery (MSD) V-PLEX SARS-CoV-2 Panel 25 competition immunoassay as a surrogate neutralization assay.

a SARS-CoV-2 (ancestral); **b** SARS-CoV-2 B.1.1.7 (Alpha variant); **c** SARS-CoV-2 B.1.351 (Beta variant); **d** SARS-CoV-2 1.617.2 (Delta variant); **e** SARS-CoV-2 IHU variant; **f** SARS-CoV-2 Omicron BA.1; **g** SARS-CoV-2 BA.2; **h** SARS-CoV-2 BA.3; **i** SARS-CoV-2 BA.1 + R346K; **j** SARS-CoV-2 BA.1 + L452R.

Individual data points represent independent biological replicates. Measurements were taken from discrete samples. Combined results from 2 independent animal experiments (effects reproduced in each experiment). Analyzed by Kruskal-Wallis test with Dunn's multiple comparisons correction. Solid horizontal lines overlaying data represent group means. Error bars represent group SD. Dotted lines represent assay limit of detection. Solid horizontal lines above data represent pairwise comparisons with p-values.

Number of animals used: **(a-j)** iFLU + Alum (6), iCoV2 + Alum (39), iCoV2 + RIBI (26).

ACE2 = Angiotensin-converting enzyme 2; Alum = aluminum hydroxide adjuvant; iCoV2 = inactivated SARS-CoV-2 vaccine; iFLU = inactivated influenza virus vaccine; RIBI = Sigma Adjuvant System adjuvant; SD = standard deviation

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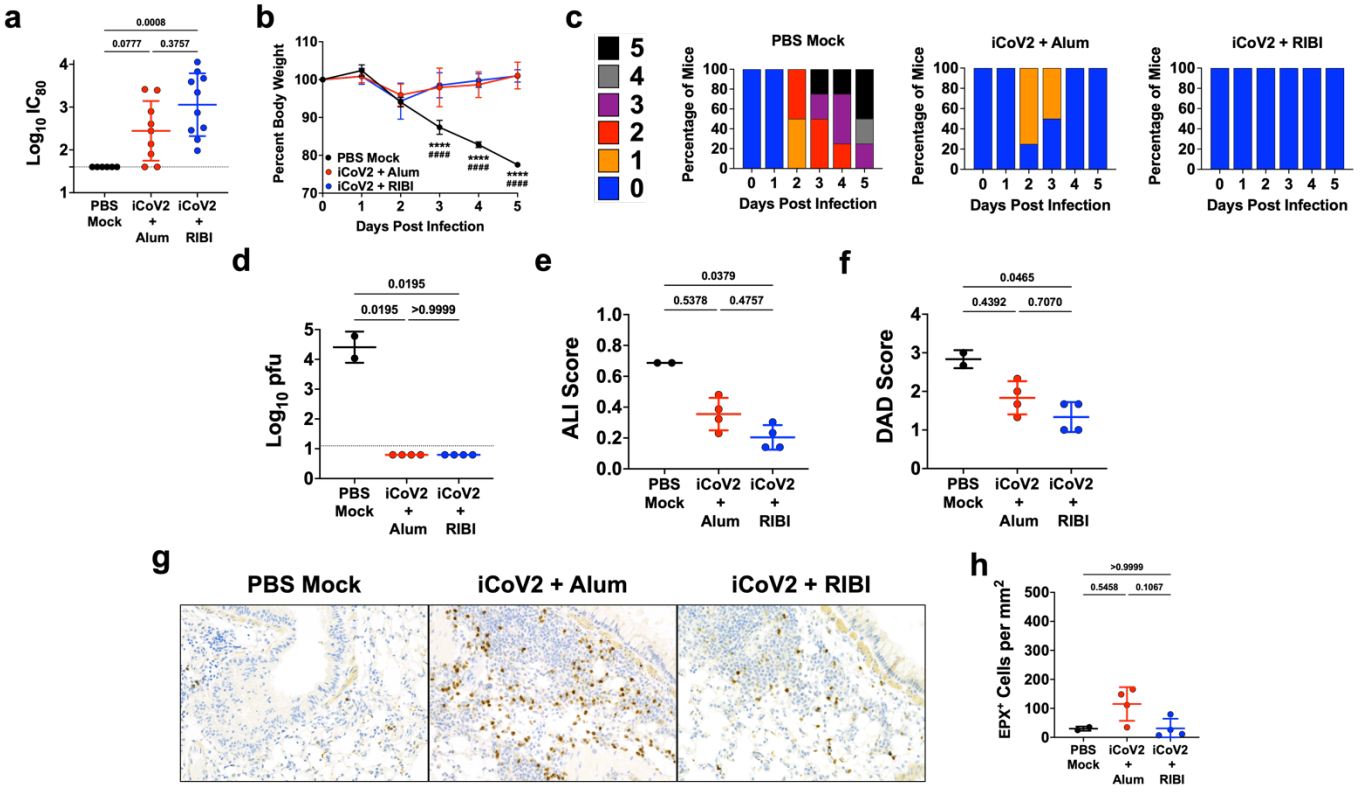

Supplementary Fig. 3: Safety and efficacy of inactivated SARS-CoV-2 vaccine against B.1.351.

Mice were either mock-vaccinated with PBS (PBS Mock) or vaccinated with inactivated SARS-CoV-2 plus aluminum hydroxide (Alum) or Sigma Adjuvant System adjuvant (RIBI) adjuvants and challenged 4 weeks post-boost with SARS-CoV-2 MA10-B.1.351. Pulmonary tissue was collected at 5 DPI.

a Post-boost serum samples were collected prior to challenge and neutralizing antibody titers against SARS-CoV-2 (B.1.351-S) were measured using a luminescence-based microneutralization assay; IC_{80} = 80% inhibitory concentration **b,c** Body weights (**b**) and clinical scores (**c**) were measured daily. **d** Pulmonary viral titers were quantified by plaque assay; pfu = plaque forming unit. **e, f** H&E-stained pulmonary specimens were analyzed to evaluate ALI (**e**) and DAD (**f**). **g, h** Representative photomicrographs (**g**) (magnification = 200X) and quantification (**h**) of pulmonary eosinophils immunohistochemically labeled for eosinophil peroxidase (EPX, brown cells).

a, d-f, h Individual data points represent independent biological replicates. Measurements were taken from discrete samples. Analyzed by Kruskal-Wallis test with Dunn's multiple comparisons correction. Solid horizontal lines and error bars overlaying data represent group means ± standard deviation (SD). Dotted lines in (**a**) and (**d**) represent assay limit of detection. Solid horizontal lines above data represent pairwise comparisons with p-values. Results from 1 (**b-h**) or 2 (**a**) independent animal experiments.

b, c Measurements were taken from individual animals repeatedly. Results in (**b**) reported as group mean ± SD. ****p<0.0001, PBS Mock versus iCoV2 + Alum, $^{\#\#\#\#}$p<0.0001, PBS Mock versus iCoV2 + RIBI, two-way ANOVA with Tukey's multiple comparisons correction.

Clinical scoring system: 0 = normal (blue); 1 = piloerection (orange); 2 = piloerection + kyphosis (red); 3 = piloerection, kyphosis and reduced movement (purple); 4 = markedly reduced movement and/or labored breathing (gray); 5 = moribund, dead or euthanized (black).

Number of animals used: **(a)** iFLU + Alum (6), iCoV2 + Alum (9), iCoV2 + RIBI (10). **(b, c)** iFLU + Alum (4), iCoV2 + Alum (4), iCoV2 + RIBI (4). **(d-h)** iFLU + Alum (2), iCoV2 + Alum (4), iCoV2 + RIBI (4).

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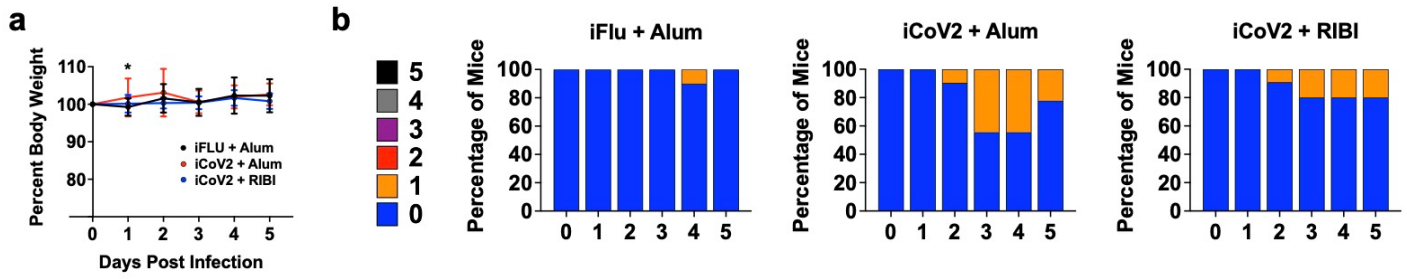


Supplementary Fig. 4: Clinical outcomes of Rs-SHC014-CoV challenge.

Vaccinated mice were challenged with Rs-SHC014-CoV at 4 weeks post-boost.

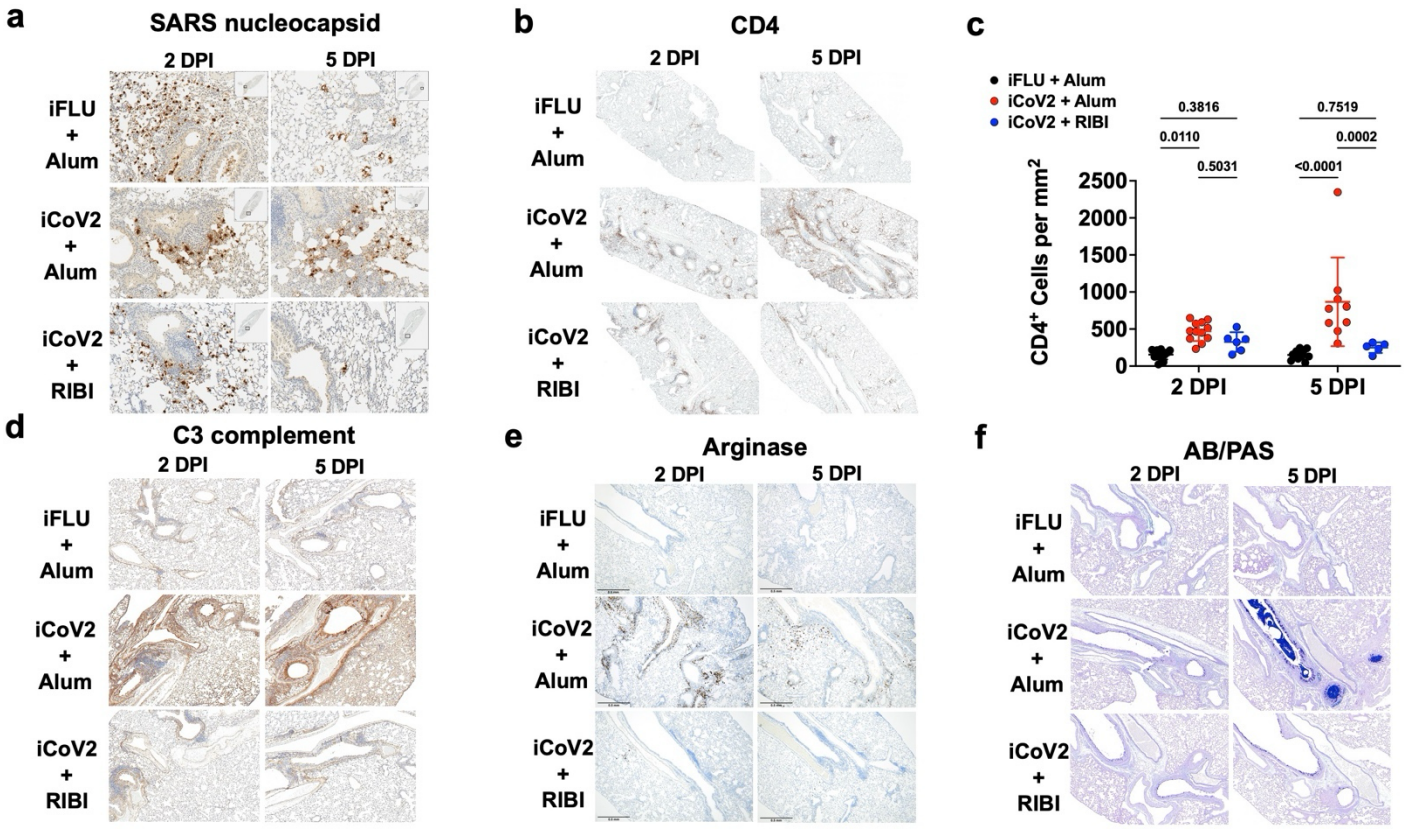
a Body weights were measured daily and reported as percent relative to baseline. **b** Clinical disease was evaluated daily using the clinical scoring system below. Measurements were taken from individual animals repeatedly. Combined results from 3 independent animal experiments (effects reproduced in each experiment). Results in (**a**) reported as group mean ± SD. *$p<0.05$, iFLU + Alum versus iCoV2 + Alum, two-way ANOVA with Tukey's multiple comparisons correction.

Number of animals used: **(a, b)** iFLU + Alum (22), iCoV2 + Alum (21), iCoV2 + RIBI (11).

Clinical scoring system: 0 = normal (blue), 1 = piloerection (orange), 2 = piloerection + kyphosis (red), 3 = piloerection, kyphosis and reduced movement (purple), 4 = markedly reduced movement and/or labored breathing (gray) and 5 = moribund, dead or euthanized (black).

Alum = aluminum hydroxide adjuvant; ANOVA = analysis of variance; DPI = days post-infection; iCoV2 = inactivated SARS-CoV-2 vaccine; iFLU = inactivated influenza virus vaccine; RIBI = Sigma Adjuvant System adjuvant; SD = standard deviation

Source data are provided as a Source Data file.



Supplementary Fig. 5: Viral load and inflammation during Rs-SHC014-CoV infection.

Vaccinated mice were challenged with Rs-SHC014-CoV at 4 weeks post-boost. Pulmonary tissue was collected at 2 and 5 DPI. Immunohistochemical staining was used to measure **a** SARS-CoV viral nucleocapsid antigen (100X magnification). **b** $CD4^+$ cells (20X magnification). **c** Quantitation of $CD4^+$ cells from (**b**). **d** C3 complement protein deposition (40X magnification). **e** $Arginase^+$ cells (40X magnification). **f** Alcian Blue Periodic Acid-Schiff staining was used to measure mucus (40X magnification).

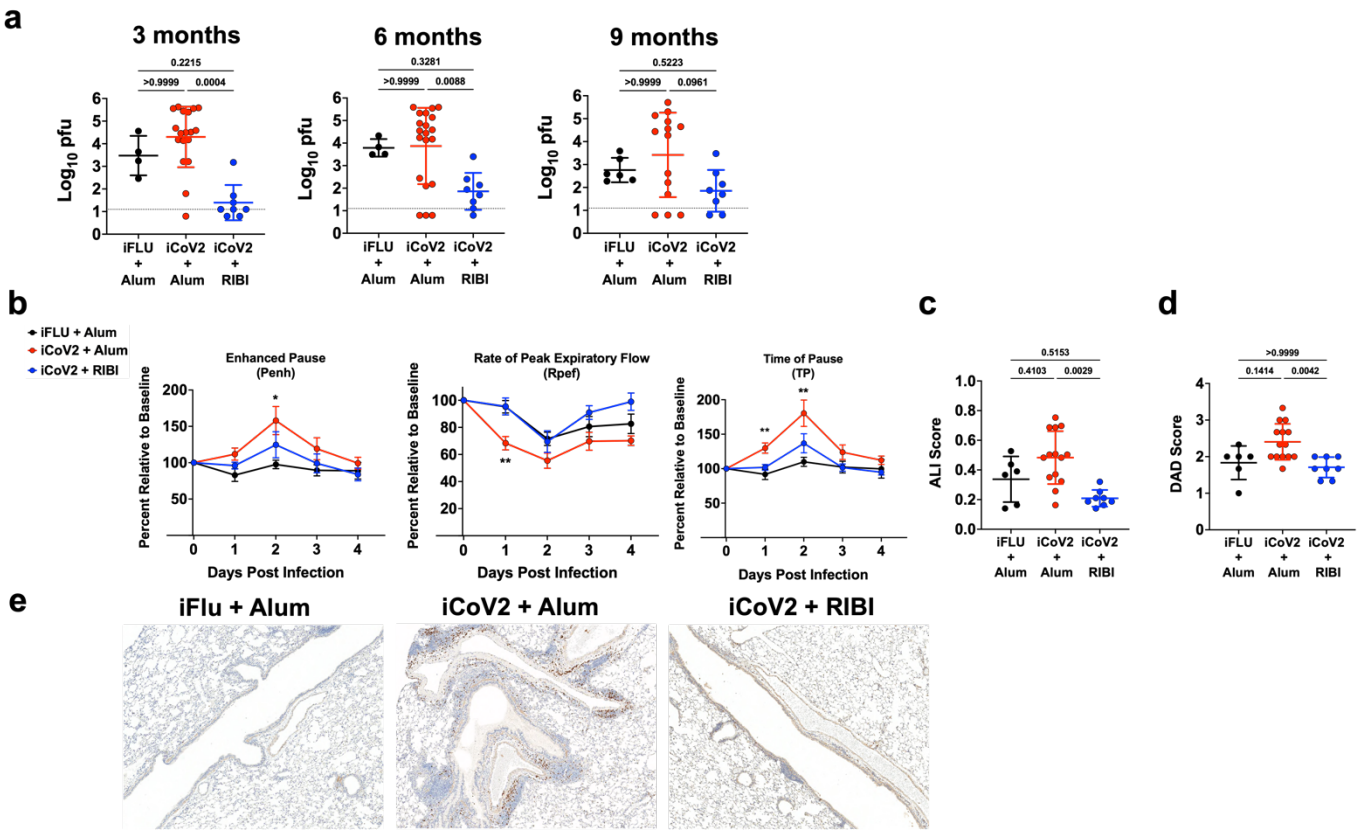
a, b, d-f Micrographs from one experiment. Images acquired from discrete samples.

c Individual data points represent independent biological replicates. Measurements were taken from discrete samples. Analyzed by two-way ANOVA with Tukey's multiple comparisons correction. Solid horizontal lines overlaying data represent group means. Error bars represent group SD. Solid horizontal lines above data represent pairwise comparisons with p-values. Results from one animal experiment.

Number of animals used: **(a-e)** 2 DPI – iFLU + Alum (12), iCoV2 + Alum (12), iCoV2 + RIBI (6); 5 DPI – iFLU + Alum (12), iCoV2 + Alum (9), iCoV2 + RIBI (5). One representative micrograph chosen from each group for presentation.

AB/PAS = Alcian Blue - Periodic Acid Schiff; Alum = aluminum hydroxide adjuvant; ANOVA = analysis of variance; DPI = days post-infection; iCoV2 = inactivated SARS-CoV-2 vaccine; iFLU = inactivated influenza virus vaccine; RIBI = Sigma Adjuvant System adjuvant

Source data are provided as a Source Data file.



Supplementary Fig. 6: Long-term safety and efficacy of inactivated SARS-CoV-2 vaccine against Rs-SHC014-CoV.

Vaccinated mice were challenged with Rs-SHC014-CoV at 3-, 6-, 9- and 10.5-months post-boost. Pulmonary function was measured 1-4 DPI using whole body plethysmography and pulmonary tissue was collected from vaccinated mice at 5 DPI.

a Pulmonary viral titers shown for mice challenged at 3-, 6- and 9-months post-boost. Log-transformed results reported as $\log_{10}$ pfu. **b** Pulmonary function (**b**), acute lung injury (ALI) (**c**), and diffuse alveolar damage (DAD) (**d**) shown for mice challenged at 9 months post-boost. **e** Pulmonary eosinophils (eosinophil peroxidase $[EPX]^+$ cells) were measured at 10.5 months post-boost (latest collection time-point) using immunohistochemical staining (representative micrographs, 40X magnification; quantified in Fig. 2h).

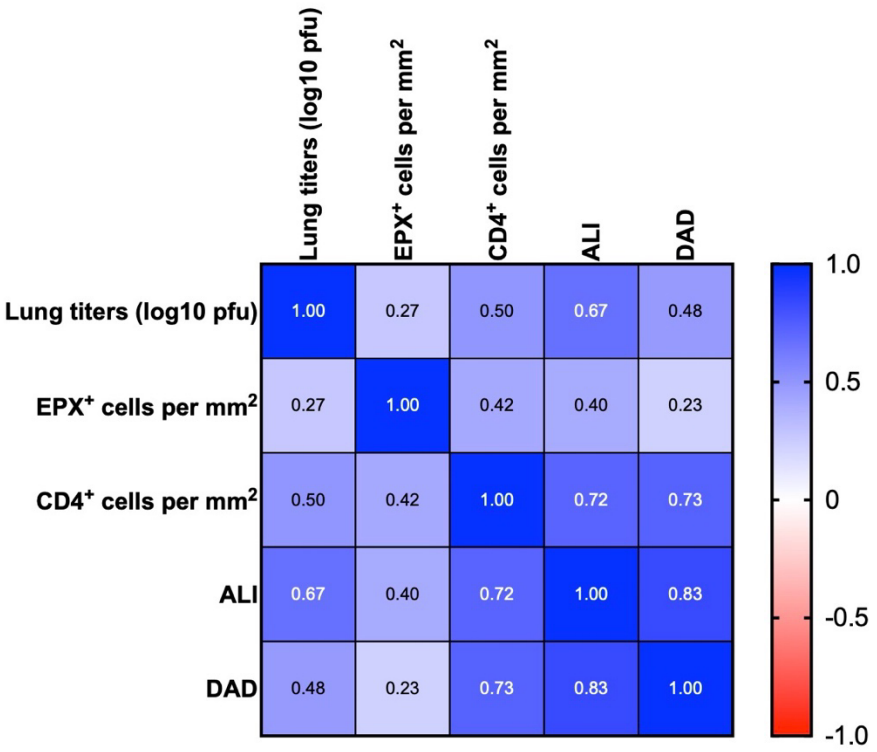
a, c, d Individual data points represent independent biological replicates. Measurements were taken from discrete samples. Analyzed by Kruskal-Wallis test with Dunn's multiple comparisons correction. Solid horizontal lines overlaying data represent group mean group ± standard deviation. Dotted lines in (**a**) represent assay LOD. Solid horizontal lines above data represent pairwise comparisons with p-values. Results from multiple time points of one animal experiment.

b Measurements were taken from individual animals repeatedly. Reported as group mean ± SEM. *p<0.05, **p<0.01, iFLU + Alum versus iCoV2 + Alum, two-way ANOVA with Geisser-Greenhouse correction and Tukey's multiple comparisons correction. Results from one experiment.

Number of animals used: **(a)** 3 months – iFLU + Alum (4), iCoV2 + Alum (18), iCoV2 + RIBI (8); 6 months – iFLU + Alum (4), iCoV2 + Alum (20), iCoV2 + RIBI (8); 9 months – iFLU + Alum (6), iCoV2 + Alum (14), iCoV2 + RIBI (8). **(b-d)** iFLU + Alum (6), iCoV2 + Alum (14), iCoV2 + RIBI (8). **(e)** iFLU + Alum (5), iCoV2 + Alum (14), iCoV2 + RIBI (10).

Source data are provided as a Source Data file.

a



b

	Lung titers (log10 pfu)	EPX$^+$ cells per mm^2	CD4$^+$ cells per mm^2	ALI	DAD
Lung titers (log10 pfu)		0.3548	0.0708	0.0111	0.0852
EPX$^+$ cells per mm^2	0.3548		0.1413	0.1535	0.4235
CD4$^+$ cells per mm^2	0.0708	0.1413		0.0047	0.0038
ALI	0.0111	0.1535	0.0047		0.0004
DAD	0.0852	0.4235	0.0038	0.0004	

Supplementary Fig. 7: Correlation of vaccine-enhanced disease parameters during Rs-SHC014-CoV infection.

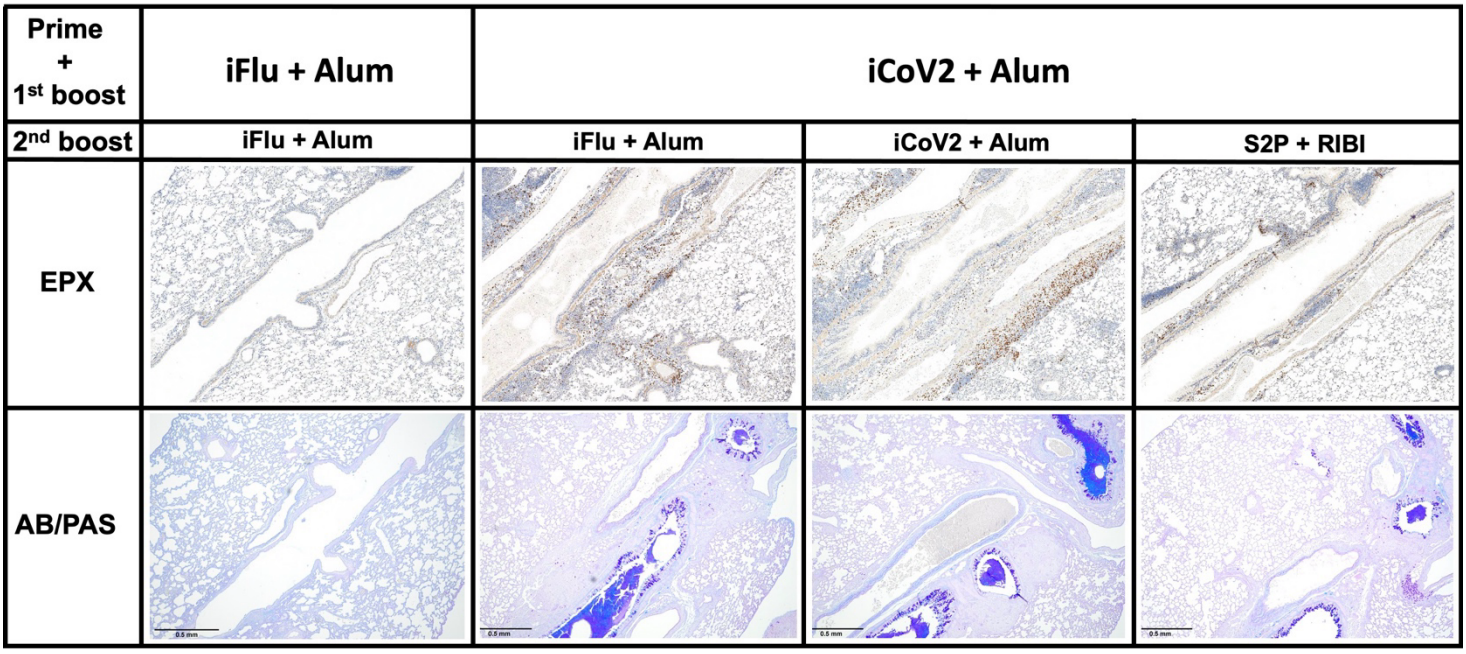
Mice vaccinated with iCoV2 + Alum were challenged with Rs-SHC014-CoV at 10.5-months post-boost. Pulmonary tissue was collected from vaccinated mice at 5 DPI. Pulmonary viral titers, eosinophils (eosinophil peroxidase [EPX]$^+$ cells), CD4$^+$ cells, ALI, and DAD were evaluated. Multivariable correlation analysis (Spearman) was performed to evaluate for correlation between various disease parameters.

a Multivariable correlation matrix with pairwise Spearman *r* values. **b** Pairwise multiplicity-adjusted p-values (two-tailed).

Number of animals used: (**a, b**) 14.

ALI = acute lung injury; Alum = aluminum hydroxide adjuvant; DAD = diffuse alveolar damage; DPI = days post-infection; EPX = eosinophil peroxidase; iCoV2 = inactivated SARS-CoV-2 vaccine; pfu = plaque-forming units

Source data are provided as a Source Data file.



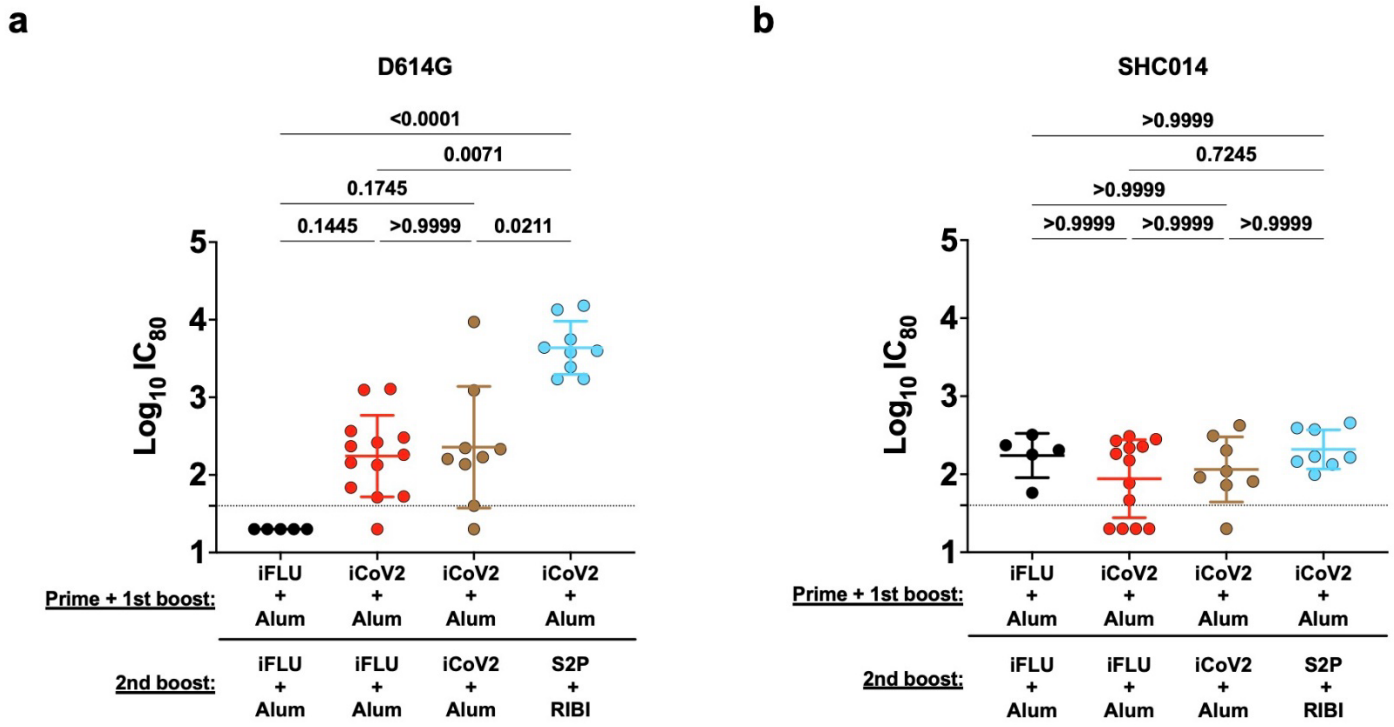
Supplementary Fig. 8: Type 2 inflammation during Rs-SHC014-CoV infection following alternative boost vaccination.

Approximately 9.5 months post-boost vaccination, mice received a third dose of iCoV2 + Alum or were boosted with a heterologous vaccine formulation (S2P + RIBI). Four weeks post-second boost, mice were challenged with Rs-SHC014-CoV. Pulmonary tissue was collected 5 DPI.

Eosinophils (eosinophil peroxidase $[EPX]^+$ cells) were measured using immunohistochemical staining. Mucus was measured using Alcian Blue Periodic Acid-Schiff staining. Representative micrographs (scale bar = 0.5mm; EPX quantified in Fig. 4e) from 1 experiment. Images acquired from discrete samples.

Number of animals used: iFLU + Alum, iFLU + Alum (5), iCoV2 + Alum, iFLU + Alum (14), iCoV2 + Alum, iCoV2 + Alum (10), iCoV2 + Alum, S2P + RIBI (10). One representative micrograph chosen from each group for presentation.

AB/PAS = Alcian Blue - Periodic Acid Schiff; Alum = aluminum hydroxide adjuvant; DPI = days post-infection; EPX = eosinophil peroxidase; iCoV2 = inactivated SARS-CoV-2 vaccine; iFLU = inactivated influenza virus vaccine; RIBI = Sigma Adjuvant System adjuvant; S2P = pre-fusion stabilized SARS-CoV-2 spike protein



Supplementary Fig. 9: Serum neutralization titers induced by alternative boost vaccines.

Mice were initially vaccinated with inactivated SARS-CoV-2 and aluminum hydroxide adjuvant (iCoV2 + Alum). Approximately 9.5 months post-boost vaccination, mice were administered either a third dose of iCoV2 + Alum (homologous second boost) or were boosted with an alternative vaccine formulation (recombinant full-length pre-fusion stabilized spike protein [S2P] + RIBI) 4 weeks prior to challenge with Rs-SHC014-CoV (SHC014). Post-boost serum samples were collected prior to challenge and neutralizing antibody titers against SARS-CoV-2 (D614G) (**a**) or SHC014 (**b**) were measured using a luminescence-based microneutralization assay.

a, b Log-transformed serum neutralization titers reported as IC_{80}. Individual data points represent independent biological replicates. Measurements were taken from discrete samples. Results from 1 animal experiment. Analyzed by Kruskal-Wallis test with Dunn's multiple comparisons correction. Solid horizontal lines overlaying data represent group means. Error bars represent group SD. Dotted lines represent assay LOD. Solid horizontal lines above data represent pairwise comparisons with p-values.

Number of animals used: **(a)** iFLU + Alum, iFLU + Alum (5); iCoV2 + Alum, iFLU + Alum (13), iCoV2 + Alum, iCoV2 + Alum (9); iCoV2 + Alum, S2P + RIBI (9). **(b)** iFLU + Alum, iFLU + Alum (5), iCoV2 + Alum, iFLU + Alum (13), iCoV2 + Alum, iCoV2 + Alum (8), iCoV2 + Alum, S2P + RIBI (8).

Alum = aluminum hydroxide adjuvant; IC_{80} = 80% serum reciprocal inhibitory dilution titer; iCoV2 = inactivated SARS-CoV-2 vaccine; iFLU = inactivated influenza virus vaccine; LOD = limit of detection; RIBI = Sigma Adjuvant System adjuvant; S2P = pre-fusion stabilized SARS-CoV-2 spike protein; SD = standard deviation;

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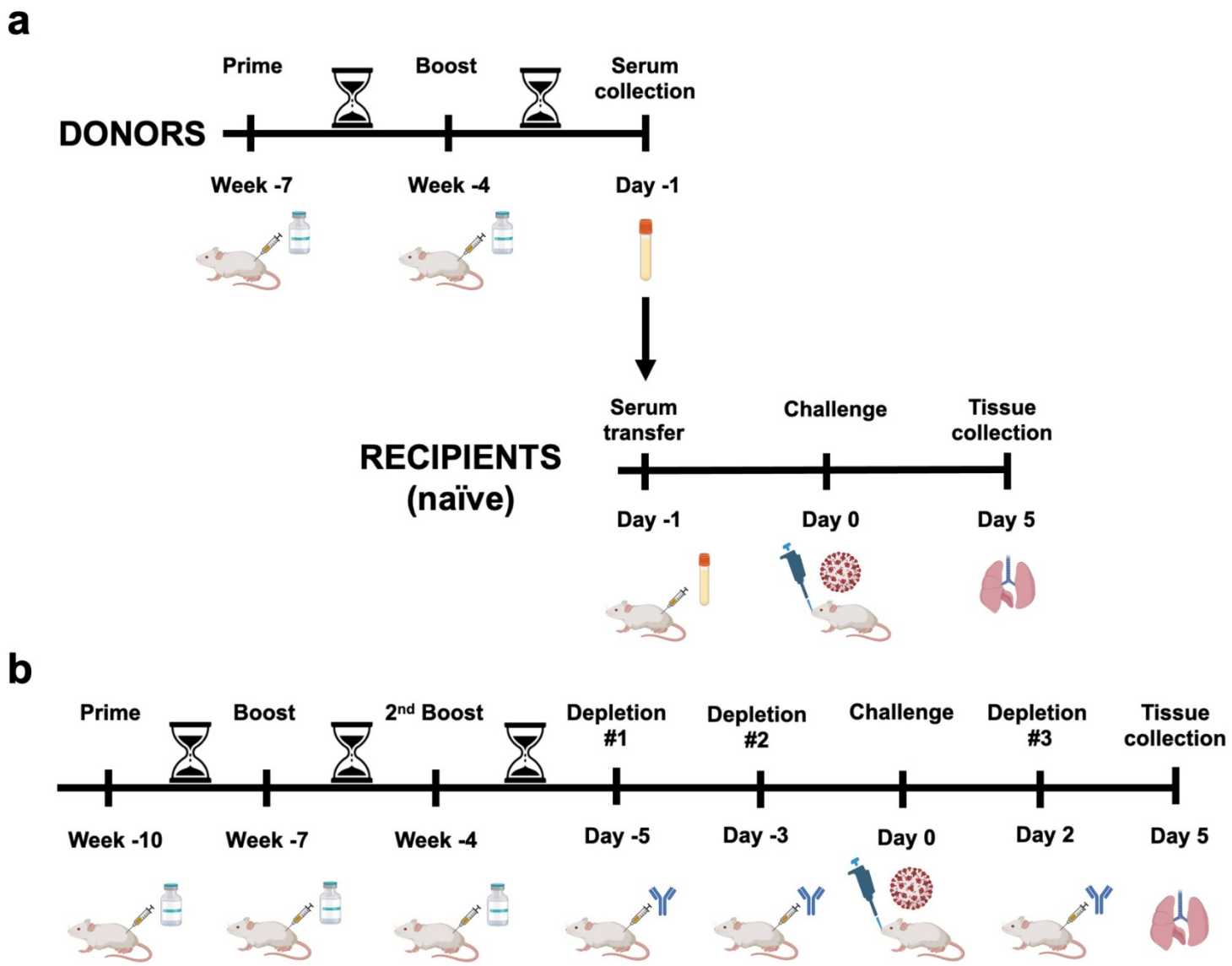

Supplementary Fig. 10: Experimental outlines for passive serum transfer and CD4$^+$ cell depletion.

a Donor mice were vaccinated with iCoV2 (+ Alum or RIBI). Four weeks post-boost, serum was collected from donor mice and transferred to naïve recipient mice 1 day prior to challenge with Rs-SHC014-CoV. Pulmonary function was measured 1-4 DPI using WBP and pulmonary tissue was collected at 5 DPI.

b Mice were vaccinated using the double-boost method with iCoV2 + Alum. To deplete CD4$^+$ T_H cells, anti-CD4 monoclonal antibody (GK1.5) was administered to mice before and during viral challenge with Rs-SHC014-CoV. Pulmonary function was measured 1-4 DPI using WBP and pulmonary tissue was collected at 5 DPI.

Alum = aluminum hydroxide adjuvant; DPI = days post-infection; iCoV2 = inactivated SARS-CoV-2 vaccine; T_H = T helper; WBP = Whole body plethysmography

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Supplementary Table 1: Pulmonary gene pathway enrichment during Rs-SHC014-CoV infection.

Vaccinated mice were challenged with Rs-SHC014-CoV 4 weeks post-boost. Pulmonary tissue was collected from vaccinated mice at 2 or 5 DPI. RNA-Seq and Gene Ontology Enrichment analysis were performed using whole pulmonary tissue. Pathways displayed are upregulated or downregulated (+/-) in iCoV2 + Alum- or iCoV2 + RIBI-vaccinated mice compared to mice in the opposite vaccine group (e.g., 5DPI_iCoV2 + Alum = upregulated at 5 DPI in iCoV2 + Alum-vaccinated mice compared to iCoV2 + RIBI-vaccinated mice). Analysis was performed on discrete samples. Data analysis is described in detail in RNA Sequencing (RNA-Seq) in Methods.

Number of animals used: 2 DPI – iCoV2 + Alum (12), iCoV2 + RIBI (6); 5 DPI – iCoV2 + Alum (9), iCoV2 + RIBI (5).

Alum = aluminum hydroxide adjuvant; DPI = days post-infection; FDR = False Discovery Rate; GO = Gene Ontology; iCoV2 = inactivated SARS-CoV-2 vaccine; RIBI = Sigma Adjuvant System adjuvant

GO Term Name	GO ID	REF Gene List	Observed Genes	Expected Genes	+/-	Fold Enrichment	Enrichment p-value	Enrichment FDR	DPI & Vaccine
complement component C3b binding	GO:0001851	9	1	0	+	> 100	5.44E-03	1E+00	2DPiCoV2 + RIBI
carbohydrate binding	GO:0030246	283	2	0.15	+	12.95	1.01E-02	1E+00	2DPI_iCoV2 + RIBI
polypeptide N-acetylgalactosaminyltransferase activity	GO:0004653	18	1	0.01	+	> 100	1.03E-02	1E+00	2DPI_iCoV2 + RIBI
opsonin binding	GO:0001846	22	1	0.01	+	83.32	1.25E-02	1E+00	2DPI_iCoV2 + RIBI
complement binding	GO:0001848	28	1	0.02	+	65.47	1.57E-02	1E+00	2DPI_iCoV2 + RIBI
polysaccharide binding	GO:0030247	28	1	0.02	+	65.47	1.57E-02	1E+00	2DPI_iCoV2 + RIBI
acetylgalactosaminyltransferase activity	GO:0008376	33	1	0.02	+	55.55	1.84E-02	1E+00	2DPI_iCoV2 + RIBI
carbohydrate transmembrane transporter activity	GO:0015144	38	1	0.02	+	48.24	2.11E-02	1E+00	2DPI_iCoV2 + RIBI
calcium channel regulator activity	GO:0005246	42	1	0.02	+	43.64	2.32E-02	1E+00	2DPI_iCoV2 + RIBI
scavenger receptor activity	GO:0005044	43	1	0.02	+	42.63	2.37E-02	1E+00	2DPI_iCoV2 + RIBI
E-box binding	GO:0070888	58	1	0.03	+	31.6	3.17E-02	1E+00	2DPI_iCoV2 + RIBI
cargo receptor activity	GO:0038024	82	1	0.04	+	22.35	4.43E-02	1E+00	2DPI_iCoV2 + RIBI
cytokine activity	GO:0005125	231	11	0.8	+	13.78	6.7E-10	3.35E-06	2DPI_iCoV2 + Alum
receptor ligand activity	GO:0048018	534	14	1.84	+	7.59	4.8E-09	1.2E-05	2DPI_iCoV2 + Alum
signaling receptor activator activity	GO:0030546	545	14	1.88	+	7.44	6.17E-09	1.03E-05	2DPI_iCoV2 + Alum
chemokine activity	GO:0008009	42	6	0.15	+	41.35	1.49E-08	1.86E-05	2DPI_iCoV2 + Alum
signaling receptor regulator activity	GO:0030545	591	14	2.04	+	6.86	1.67E-08	1.67E-05	2DPI_iCoV2 + Alum
CCR chemokine receptor binding	GO:0048020	58	6	0.2	+	29.94	8.72E-08	7.25E-05	2DPI_iCoV2 + Alum
cytokine receptor binding	GO:0005126	316	10	1.09	+	9.16	1.73E-07	1.24E-04	2DPI_iCoV2 + Alum

chemokine receptor binding	GO:0042379	79	6	0.27	+	21.98	4.8E-07	3E-04	2DPI_iCoV2 + Alum
molecular function regulator activity	GO:0098772	2147	23	7.42	+	3.1	5.9E-07	3.27E-04	2DPI_iCoV2 + Alum
signaling receptor binding	GO:0005102	1650	19	5.7	+	3.33	2.62E-06	1.31E-03	2DPI_iCoV2 + Alum
molecular function activator activity	GO:0140677	1192	16	4.12	+	3.89	2.83E-06	1.28E-03	2DPI_iCoV2 + Alum
chitin binding	GO:0008061	11	3	0.04	+	78.94	1.39E-05	5.78E-03	2DPI_iCoV2 + Alum
G protein-coupled receptor binding	GO:0001664	328	8	1.13	+	7.06	2.03E-05	7.81E-03	2DPI_iCoV2 + Alum
carbohydrate binding	GO:0030246	283	7	0.98	+	7.16	6.33E-05	2.26E-02	2DPI_iCoV2 + Alum
CCR3 chemokine receptor binding	GO:0031728	5	2	0.02	+	> 100	2.43E-04	8.08E-02	2DPI_iCoV2 + Alum
brain-derived neurotrophic factor binding	GO:0048403	5	2	0.02	+	> 100	2.43E-04	7.58E-02	2DPI_iCoV2 + Alum
mannose binding	GO:0005537	33	3	0.11	+	26.31	2.58E-04	7.58E-02	2DPI_iCoV2 + Alum
protein binding	GO:0005515	9462	48	32.69	+	1.47	4.56E-04	1.27E-01	2DPI_iCoV2 + Alum
serine-type endopeptidase activity	GO:0004252	194	5	0.67	+	7.46	6.23E-04	1.64E-01	2DPI_iCoV2 + Alum
nerve growth factor binding	GO:0048406	9	2	0.03	+	64.32	6.31E-04	1.57E-01	2DPI_iCoV2 + Alum
serine-type peptidase activity	GO:0008236	211	5	0.73	+	6.86	9.01E-04	2.14E-01	2DPI_iCoV2 + Alum
serine hydrolase activity	GO:0017171	216	5	0.75	+	6.7	9.98E-04	2.26E-01	2DPI_iCoV2 + Alum
serine-type endopeptidase inhibitor activity	GO:0004867	129	4	0.45	+	8.97	1.16E-03	2.51E-01	2DPI_iCoV2 + Alum
neurotrophin binding	GO:0043121	13	2	0.04	+	44.53	1.19E-03	2.48E-01	2DPI_iCoV2 + Alum
growth factor activity	GO:0008083	149	4	0.51	+	7.77	1.93E-03	3.86E-01	2DPI_iCoV2 + Alum
adrenergic receptor binding	GO:0031690	23	2	0.08	+	25.17	3.33E-03	6.4E-01	2DPI_iCoV2 + Alum
oxidoreductase activity, acting on single donors with incorporation of molecular oxygen, incorporation of two atoms of oxygen	GO:0016702	26	2	0.09	+	22.26	4.17E-03	7.71E-01	2DPI_iCoV2 + Alum
monosaccharide binding	GO:0048029	92	3	0.32	+	9.44	4.33E-03	7.71E-01	2DPI_iCoV2 + Alum
oxidoreductase activity, acting on single donors with incorporation of molecular oxygen	GO:0016701	27	2	0.09	+	21.44	4.47E-03	7.7E-01	2DPI_iCoV2 + Alum
endopeptidase inhibitor activity	GO:0004866	195	4	0.67	+	5.94	4.96E-03	8.25E-01	2DPI_iCoV2 + Alum
endopeptidase activity	GO:0004175	453	6	1.57	+	3.83	5.02E-03	8.08E-01	2DPI_iCoV2 + Alum
peptidase inhibitor activity	GO:0030414	202	4	0.7	+	5.73	5.6E-03	8.73E-01	2DPI_iCoV2 + Alum
endopeptidase regulator activity	GO:0061135	214	4	0.74	+	5.41	6.82E-03	1E+00	2DPI_iCoV2 + Alum
chemokine binding	GO:0019956	34	2	0.12	+	17.03	6.83E-03	1E+00	2DPI_iCoV2 + Alum
galactose:sodium symporter activity	GO:0015371	1	1	0	+	> 100	6.87E-03	9.8E-01	2DPI_iCoV2 + Alum

CCR4 chemokine receptor binding	GO:0031729	1	1	0	+	> 100	6.87E-03	9.53E-01	2DPI_iCoV2 + Alum
glycine amidinotransferase activity	GO:0015068	1	1	0	+	> 100	6.87E-03	9.27E-01	2DPI_iCoV2 + Alum
amidinotransferase activity	GO:0015067	1	1	0	+	> 100	6.87E-03	9.03E-01	2DPI_iCoV2 + Alum
interleukin-13 receptor binding	GO:0005144	1	1	0	+	> 100	6.87E-03	8.8E-01	2DPI_iCoV2 + Alum
peptidase activity	GO:0008233	642	7	2.22	+	3.16	6.97E-03	8.7E-01	2DPI_iCoV2 + Alum
virus receptor activity	GO:0001618	41	2	0.14	+	14.12	9.64E-03	1E+00	2DPI_iCoV2 + Alum
exogenous protein binding	GO:0140272	42	2	0.15	+	13.78	1.01E-02	1E+00	2DPI_iCoV2 + Alum
inorganic diphosphate transmembrane transporter activity	GO:0030504	2	1	0.01	+	> 100	1.03E-02	1E+00	2DPI_iCoV2 + Alum
arginase activity	GO:0004053	2	1	0.01	+	> 100	1.03E-02	1E+00	2DPI_iCoV2 + Alum
netrin receptor binding	GO:1990890	2	1	0.01	+	> 100	1.03E-02	1E+00	2DPI_iCoV2 + Alum
alpha-2C adrenergic receptor binding	GO:0031696	2	1	0.01	+	> 100	1.03E-02	1E+00	2DPI_iCoV2 + Alum
alpha-glucoside transmembrane transporter activity	GO:0015151	2	1	0.01	+	> 100	1.03E-02	1E+00	2DPI_iCoV2 + Alum
interleukin-5 receptor binding	GO:0005137	2	1	0.01	+	> 100	1.03E-02	1E+00	2DPI_iCoV2 + Alum
interleukin-8 binding	GO:0019959	3	1	0.01	+	96.48	1.37E-02	1E+00	2DPI_iCoV2 + Alum
alpha2-adrenergic receptor activity	GO:0004938	3	1	0.01	+	96.48	1.37E-02	1E+00	2DPI_iCoV2 + Alum
iodide transmembrane transporter activity	GO:0015111	3	1	0.01	+	96.48	1.37E-02	1E+00	2DPI_iCoV2 + Alum
tryptophan 2,3-dioxygenase activity	GO:0004833	3	1	0.01	+	96.48	1.37E-02	1E+00	2DPI_iCoV2 + Alum
glucoside transmembrane transporter activity	GO:0042947	3	1	0.01	+	96.48	1.37E-02	1E+00	2DPI_iCoV2 + Alum
interleukin-4 receptor binding	GO:0005136	3	1	0.01	+	96.48	1.37E-02	1E+00	2DPI_iCoV2 + Alum
cytokine binding	GO:0019955	142	3	0.49	+	6.11	1.38E-02	1E+00	2DPI_iCoV2 + Alum
peptidase regulator activity	GO:0061134	267	4	0.92	+	4.34	1.43E-02	1E+00	2DPI_iCoV2 + Alum
sulfur compound transmembrane transporter activity	GO:1901682	54	2	0.19	+	10.72	1.6E-02	1E+00	2DPI_iCoV2 + Alum
growth factor receptor binding	GO:0070851	151	3	0.52	+	5.75	1.62E-02	1E+00	2DPI_iCoV2 + Alum
channel regulator activity	GO:0016247	154	3	0.53	+	5.64	1.7E-02	1E+00	2DPI_iCoV2 + Alum
arachidonate 15-lipoxygenase activity	GO:0050473	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum
N-acetyl-beta-D-galactosaminidase activity	GO:0102148	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum
group III metabotropic glutamate receptor activity	GO:0001642	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum
linoleate 13S-lipoxygenase activity	GO:0016165	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum

arachidonate 12-lipoxygenase activity	GO:0004052	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum
histone acetyltransferase regulator activity	GO:0035034	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum
norepinephrine binding	GO:0051380	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum
alpha-2A adrenergic receptor binding	GO:0031694	4	1	0.01	+	72.36	1.71E-02	1E+00	2DPI_iCoV2 + Alum
extracellular matrix binding	GO:0050840	57	2	0.2	+	10.16	1.76E-02	1E+00	2DPI_iCoV2 + Alum
tumor necrosis factor binding	GO:0043120	5	1	0.02	+	57.89	2.05E-02	1E+00	2DPI_iCoV2 + Alum
guanylate cyclase activator activity	GO:0030250	5	1	0.02	+	57.89	2.05E-02	1E+00	2DPI_iCoV2 + Alum
galactose transmembrane transporter activity	GO:0005354	5	1	0.02	+	57.89	2.05E-02	1E+00	2DPI_iCoV2 + Alum
type 1 fibroblast growth factor receptor binding	GO:0005105	6	1	0.02	+	48.24	2.39E-02	1E+00	2DPI_iCoV2 + Alum
chitinase activity	GO:0004568	6	1	0.02	+	48.24	2.39E-02	1E+00	2DPI_iCoV2 + Alum
beta-N-acetylhexosaminidase activity	GO:0004563	6	1	0.02	+	48.24	2.39E-02	1E+00	2DPI_iCoV2 + Alum
guanylate cyclase regulator activity	GO:0030249	6	1	0.02	+	48.24	2.39E-02	1E+00	2DPI_iCoV2 + Alum
epinephrine binding	GO:0051379	6	1	0.02	+	48.24	2.39E-02	1E+00	2DPI_iCoV2 + Alum
alpha-adrenergic receptor activity	GO:0004936	6	1	0.02	+	48.24	2.39E-02	1E+00	2DPI_iCoV2 + Alum
fucose binding	GO:0042806	7	1	0.02	+	41.35	2.72E-02	1E+00	2DPI_iCoV2 + Alum
heterotrimeric G-protein binding	GO:0032795	7	1	0.02	+	41.35	2.72E-02	1E+00	2DPI_iCoV2 + Alum
interleukin-1 binding	GO:0019966	7	1	0.02	+	41.35	2.72E-02	1E+00	2DPI_iCoV2 + Alum
C-X-C chemokine binding	GO:0019958	7	1	0.02	+	41.35	2.72E-02	1E+00	2DPI_iCoV2 + Alum
ABC-type glutathione S-conjugate transporter activity	GO:0015431	7	1	0.02	+	41.35	2.72E-02	1E+00	2DPI_iCoV2 + Alum
thyroid hormone binding	GO:0070324	7	1	0.02	+	41.35	2.72E-02	1E+00	2DPI_iCoV2 + Alum
binding	GO:0005488	14105	58	48.73	+	1.19	3.04E-02	1E+00	2DPI_iCoV2 + Alum
D-glucose transmembrane transporter activity	GO:0055056	8	1	0.03	+	36.18	3.06E-02	1E+00	2DPI_iCoV2 + Alum
RNA binding	GO:0003723	1113	0	3.85	-	< 0.01	3.35E-02	1E+00	2DPI_iCoV2 + Alum
adenylate cyclase inhibiting G protein-coupled glutamate receptor activity	GO:0001640	9	1	0.03	+	32.16	3.39E-02	1E+00	2DPI_iCoV2 + Alum
3-chloroallyl aldehyde dehydrogenase activity	GO:0004028	9	1	0.03	+	32.16	3.39E-02	1E+00	2DPI_iCoV2 + Alum
G protein-coupled glutamate receptor activity	GO:0098988	9	1	0.03	+	32.16	3.39E-02	1E+00	2DPI_iCoV2 + Alum
glucose:sodium symporter activity	GO:0005412	9	1	0.03	+	32.16	3.39E-02	1E+00	2DPI_iCoV2 + Alum
adrenergic receptor activity	GO:0004935	9	1	0.03	+	32.16	3.39E-02	1E+00	2DPI_iCoV2 + Alum
chloride:bicarbonate antiporter activity	GO:0140900	9	1	0.03	+	32.16	3.39E-02	1E+00	2DPI_iCoV2 + Alum

bicarbonate:monoatomic anion antiporter activity	GO:0140829	9	1	0.03	+	32.16	3.39E-02	1E+00	2DPI_iCoV2 + Alum
olfactory receptor activity	GO:0004984	1169	0	4.04	-	< 0.01	3.46E-02	1E+00	2DPI_iCoV2 + Alum
cyclase activator activity	GO:0010853	10	1	0.03	+	28.94	3.72E-02	1E+00	2DPI_iCoV2 + Alum
thioesterase binding	GO:0031996	10	1	0.03	+	28.94	3.72E-02	1E+00	2DPI_iCoV2 + Alum
secondary active sulfate transmembrane transporter activity	GO:0008271	10	1	0.03	+	28.94	3.72E-02	1E+00	2DPI_iCoV2 + Alum
oxalate transmembrane transporter activity	GO:0019531	10	1	0.03	+	28.94	3.72E-02	1E+00	2DPI_iCoV2 + Alum
hydrolase activity	GO:0016787	2363	14	8.16	+	1.71	3.99E-02	1E+00	2DPI_iCoV2 + Alum
hydrolase activity, acting on carbon-nitrogen bonds, in linear amidines	GO:0016813	11	1	0.04	+	26.31	4.06E-02	1E+00	2DPI_iCoV2 + Alum
dioxygenase activity	GO:0051213	94	2	0.32	+	6.16	4.33E-02	1E+00	2DPI_iCoV2 + Alum
acetylcholine binding	GO:0042166	12	1	0.04	+	24.12	4.39E-02	1E+00	2DPI_iCoV2 + Alum
omega peptidase activity	GO:0008242	12	1	0.04	+	24.12	4.39E-02	1E+00	2DPI_iCoV2 + Alum
cytokine receptor activity	GO:0004896	95	2	0.33	+	6.09	4.42E-02	1E+00	2DPI_iCoV2 + Alum
chloride channel regulator activity	GO:0017081	13	1	0.04	+	22.26	4.72E-02	1E+00	2DPI_iCoV2 + Alum
catecholamine binding	GO:1901338	13	1	0.04	+	22.26	4.72E-02	1E+00	2DPI_iCoV2 + Alum
hydrolase activity, hydrolyzing O-glycosyl compounds	GO:0004553	100	2	0.35	+	5.79	4.83E-02	1E+00	2DPI_iCoV2 + Alum
ATPase binding	GO:0051117	100	2	0.35	+	5.79	4.83E-02	1E+00	2DPI_iCoV2 + Alum
olfactory receptor activity	GO:0004984	1169	0	15.04	-	< 0.01	5.17E-07	2.58E-03	5DPI_iCoV2 + RIBI
structural constituent of muscle	GO:0008307	21	6	0.27	+	22.21	9.42E-07	2.35E-03	5DPI_iCoV2 + RIBI
actinin binding	GO:0042805	41	7	0.53	+	13.27	2.34E-06	3.89E-03	5DPI_iCoV2 + RIBI
actin binding	GO:0003779	448	20	5.76	+	3.47	2.6E-06	3.24E-03	5DPI_iCoV2 + RIBI
alpha-actinin binding	GO:0051393	30	6	0.39	+	15.55	5.63E-06	5.62E-03	5DPI_iCoV2 + RIBI
cytoskeletal protein binding	GO:0008092	1021	31	13.14	+	2.36	1.35E-05	1.12E-02	5DPI_iCoV2 + RIBI
carboxylic acid binding	GO:0031406	217	12	2.79	+	4.3	3.93E-05	2.8E-02	5DPI_iCoV2 + RIBI
titin binding	GO:0031432	12	4	0.15	+	25.91	4.11E-05	2.57E-02	5DPI_iCoV2 + RIBI
binding	GO:0005488	14105	214	181.47	+	1.18	4.59E-05	2.55E-02	5DPI_iCoV2 + RIBI
potassium channel activity	GO:0005267	122	9	1.57	+	5.73	4.64E-05	2.32E-02	5DPI_iCoV2 + RIBI
structural molecule activity	GO:0005198	652	22	8.39	+	2.62	5.56E-05	2.52E-02	5DPI_iCoV2 + RIBI
potassium ion transmembrane transporter activity	GO:0015079	160	10	2.06	+	4.86	6.64E-05	2.76E-02	5DPI_iCoV2 + RIBI
muscle alpha-actinin binding	GO:0051371	14	4	0.18	+	22.21	6.78E-05	2.6E-02	5DPI_iCoV2 + RIBI

metal ion transmembrane transporter activity	GO:0046873	436	17	5.61	+	3.03	7.54E-05	2.51E-02	5DPI_iCoV2 + RIBI
organic acid binding	GO:0043177	233	12	3	+	4	7.54E-05	2.69E-02	5DPI_iCoV2 + RIBI
inorganic cation transmembrane transporter activity	GO:0022890	533	19	6.86	+	2.77	9.05E-05	2.82E-02	5DPI_iCoV2 + RIBI
calcium ion binding	GO:0005509	631	21	8.12	+	2.59	9.89E-05	2.9E-02	5DPI_iCoV2 + RIBI
FATZ binding	GO:0051373	5	3	0.06	+	46.64	1.08E-04	3E-02	5DPI_iCoV2 + RIBI
signaling receptor regulator activity	GO:0030545	591	20	7.6	+	2.63	1.17E-04	3.07E-02	5DPI_iCoV2 + RIBI
aryl sulfotransferase activity	GO:0004062	6	3	0.08	+	38.86	1.61E-04	4.02E-02	5DPI_iCoV2 + RIBI
sodium channel regulator activity	GO:0017080	36	5	0.46	+	10.8	1.64E-04	3.91E-02	5DPI_iCoV2 + RIBI
fatty acid binding	GO:0005504	60	6	0.77	+	7.77	1.91E-04	4.33E-02	5DPI_iCoV2 + RIBI
monoatomic cation transmembrane transporter activity	GO:0008324	572	19	7.36	+	2.58	2.17E-04	4.71E-02	5DPI_iCoV2 + RIBI
ion binding	GO:0043167	5378	97	69.19	+	1.4	2.2E-04	4.58E-02	5DPI_iCoV2 + RIBI
telethonin binding	GO:0031433	7	3	0.09	+	33.31	2.28E-04	4.55E-02	5DPI_iCoV2 + RIBI
monoatomic ion gated channel activity	GO:0022839	315	13	4.05	+	3.21	3.13E-04	6.01E-02	5DPI_iCoV2 + RIBI
voltage-gated monoatomic ion channel activity	GO:0005244	197	10	2.53	+	3.95	3.32E-04	6.14E-02	5DPI_iCoV2 + RIBI
voltage-gated channel activity	GO:0022832	198	10	2.55	+	3.93	3.45E-04	6.15E-02	5DPI_iCoV2 + RIBI
gated channel activity	GO:0022836	320	13	4.12	+	3.16	3.61E-04	6.22E-02	5DPI_iCoV2 + RIBI
voltage-gated potassium channel activity	GO:0005249	97	7	1.25	+	5.61	3.68E-04	6.13E-02	5DPI_iCoV2 + RIBI
inorganic molecular entity transmembrane transporter activity	GO:0015318	651	20	8.38	+	2.39	5.61E-04	9.03E-02	5DPI_iCoV2 + RIBI
receptor ligand activity	GO:0048018	534	17	6.87	+	2.47	7.34E-04	1.14E-01	5DPI_iCoV2 + RIBI
protein binding	GO:0005515	9462	150	121.73	+	1.23	8.69E-04	1.31E-01	5DPI_iCoV2 + RIBI
signaling receptor activator activity	GO:0030546	545	17	7.01	+	2.42	9.12E-04	1.34E-01	5DPI_iCoV2 + RIBI
L-threonine ammonia-lyase activity	GO:0004794	2	2	0.03	+	77.73	9.49E-04	1.25E-01	5DPI_iCoV2 + RIBI
CCR7 chemokine receptor binding	GO:0031732	2	2	0.03	+	77.73	9.49E-04	1.28E-01	5DPI_iCoV2 + RIBI
iron ion transmembrane transporter inhibitor activity	GO:0097690	2	2	0.03	+	77.73	9.49E-04	1.32E-01	5DPI_iCoV2 + RIBI
titin Z domain binding	GO:0070080	2	2	0.03	+	77.73	9.49E-04	1.35E-01	5DPI_iCoV2 + RIBI
monooxygenase activity	GO:0004497	151	8	1.94	+	4.12	9.97E-04	1.28E-01	5DPI_iCoV2 + RIBI
monoatomic ion transmembrane transporter activity	GO:0015075	700	20	9.01	+	2.22	1.04E-03	1.29E-01	5DPI_iCoV2 + RIBI
monoatomic cation channel activity	GO:0005261	322	12	4.14	+	2.9	1.24E-03	1.51E-01	5DPI_iCoV2 + RIBI

monocarboxylic acid binding	GO:0033293	88	6	1.13	+	5.3	1.27E-03	1.51E-01	5DPI_iCoV2 + RIBI
troponin C binding	GO:0030172	3	2	0.04	+	51.82	1.57E-03	1.78E-01	5DPI_iCoV2 + RIBI
L-serine ammonia-lyase activity	GO:0003941	3	2	0.04	+	51.82	1.57E-03	1.82E-01	5DPI_iCoV2 + RIBI
monoatomic ion channel activity	GO:0005216	435	14	5.6	+	2.5	1.92E-03	2.13E-01	5DPI_iCoV2 + RIBI
lipid binding	GO:0008289	886	23	11.4	+	2.02	2.01E-03	2.18E-01	5DPI_iCoV2 + RIBI
metal ion binding	GO:0046872	3634	67	46.75	+	1.43	2.16E-03	2.29E-01	5DPI_iCoV2 + RIBI
transporter activity	GO:0005215	1185	28	15.25	+	1.84	2.18E-03	2.27E-01	5DPI_iCoV2 + RIBI
salt transmembrane transporter activity	GO:1901702	582	17	7.49	+	2.27	2.23E-03	2.27E-01	5DPI_iCoV2 + RIBI
transmembrane receptor protein serine/threonine kinase activity	GO:0004675	18	3	0.23	+	12.95	2.28E-03	2.27E-01	5DPI_iCoV2 + RIBI
oleic acid binding	GO:0070538	4	2	0.05	+	38.86	2.33E-03	2.28E-01	5DPI_iCoV2 + RIBI
ion channel regulator activity	GO:0099106	136	7	1.75	+	4	2.39E-03	2.29E-01	5DPI_iCoV2 + RIBI
odorant binding	GO:0005549	534	0	6.87	-	< 0.01	2.41E-03	2.27E-01	5DPI_iCoV2 + RIBI
hormone activity	GO:0005179	137	7	1.76	+	3.97	2.48E-03	2.29E-01	5DPI_iCoV2 + RIBI
long-chain fatty acid transporter activity	GO:0005324	19	3	0.24	+	12.27	2.61E-03	2.37E-01	5DPI_iCoV2 + RIBI
actin filament binding	GO:0051015	219	9	2.82	+	3.19	2.65E-03	2.36E-01	5DPI_iCoV2 + RIBI
scavenger receptor activity	GO:0005044	43	4	0.55	+	7.23	2.96E-03	2.59E-01	5DPI_iCoV2 + RIBI
BMP binding	GO:0036122	20	3	0.26	+	11.66	2.97E-03	2.56E-01	5DPI_iCoV2 + RIBI
voltage-gated monoatomic cation channel activity	GO:0022843	143	7	1.84	+	3.8	3.12E-03	2.64E-01	5DPI_iCoV2 + RIBI
structural constituent of cytoskeleton	GO:0005200	73	5	0.94	+	5.32	3.17E-03	2.63E-01	5DPI_iCoV2 + RIBI
ammonia-lyase activity	GO:0016841	5	2	0.06	+	31.09	3.24E-03	2.65E-01	5DPI_iCoV2 + RIBI
long-chain fatty acid binding	GO:0036041	21	3	0.27	+	11.1	3.37E-03	2.71E-01	5DPI_iCoV2 + RIBI
channel activity	GO:0015267	495	15	6.37	+	2.36	3.72E-03	2.9E-01	5DPI_iCoV2 + RIBI
passive transmembrane transporter activity	GO:0022803	495	15	6.37	+	2.36	3.72E-03	2.95E-01	5DPI_iCoV2 + RIBI
C-acyltransferase activity	GO:0016408	22	3	0.28	+	10.6	3.79E-03	2.91E-01	5DPI_iCoV2 + RIBI
cation binding	GO:0043169	3732	67	48.01	+	1.4	4.08E-03	3.09E-01	5DPI_iCoV2 + RIBI
fatty-acyl-CoA synthase activity	GO:0004321	6	2	0.08	+	25.91	4.28E-03	3.1E-01	5DPI_iCoV2 + RIBI
metal ion sequestering activity	GO:0140487	6	2	0.08	+	25.91	4.28E-03	3.14E-01	5DPI_iCoV2 + RIBI
dinitrosyl-iron complex binding	GO:0035731	6	2	0.08	+	25.91	4.28E-03	3.19E-01	5DPI_iCoV2 + RIBI
signaling receptor binding	GO:0005102	1650	35	21.23	+	1.65	4.31E-03	3.07E-01	5DPI_iCoV2 + RIBI

channel regulator activity	GO:0016247	154	7	1.98	+	3.53	4.6E-03	3.23E-01	5DPI_iCoV2 + RIBI
transferase activity, transferring sulphur-containing groups	GO:0016782	81	5	1.04	+	4.8	4.81E-03	3.34E-01	5DPI_iCoV2 + RIBI
cargo receptor activity	GO:0038024	82	5	1.05	+	4.74	5.05E-03	3.46E-01	5DPI_iCoV2 + RIBI
transferase activity	GO:0016740	2239	44	28.81	+	1.53	5.44E-03	3.67E-01	5DPI_iCoV2 + RIBI
extracellularly glutamate-gated ion channel activity	GO:0005234	7	2	0.09	+	22.21	5.46E-03	3.54E-01	5DPI_iCoV2 + RIBI
BMP receptor activity	GO:0098821	7	2	0.09	+	22.21	5.46E-03	3.58E-01	5DPI_iCoV2 + RIBI
medium-chain fatty acid-CoA ligase activity	GO:0031956	7	2	0.09	+	22.21	5.46E-03	3.63E-01	5DPI_iCoV2 + RIBI
sodium ion transmembrane transporter activity	GO:0015081	160	7	2.06	+	3.4	5.6E-03	3.58E-01	5DPI_iCoV2 + RIBI
delayed rectifier potassium channel activity	GO:0005251	26	3	0.33	+	8.97	5.8E-03	3.62E-01	5DPI_iCoV2 + RIBI
actin monomer binding	GO:0003785	26	3	0.33	+	8.97	5.8E-03	3.67E-01	5DPI_iCoV2 + RIBI
transmembrane transporter binding	GO:0044325	162	7	2.08	+	3.36	5.97E-03	3.68E-01	5DPI_iCoV2 + RIBI
sulfur compound binding	GO:1901681	297	10	3.82	+	2.62	6.12E-03	3.73E-01	5DPI_iCoV2 + RIBI
transmembrane signaling receptor activity	GO:0004888	2203	15	28.34	-	0.53	6.69E-03	4.02E-01	5DPI_iCoV2 + RIBI
NAD+-protein-arginine ADP-ribosyltransferase activity	GO:0106274	8	2	0.1	+	19.43	6.76E-03	3.97E-01	5DPI_iCoV2 + RIBI
D-glucose transmembrane transporter activity	GO:0055056	8	2	0.1	+	19.43	6.76E-03	4.02E-01	5DPI_iCoV2 + RIBI
lipase activity	GO:0016298	127	6	1.63	+	3.67	7.13E-03	4.14E-01	5DPI_iCoV2 + RIBI
identical protein binding	GO:0042802	2410	46	31.01	+	1.48	7.2E-03	4.13E-01	5DPI_iCoV2 + RIBI
uniporter activity	GO:0015292	9	2	0.12	+	17.27	8.2E-03	4.6E-01	5DPI_iCoV2 + RIBI
butyrate-CoA ligase activity	GO:0047760	9	2	0.12	+	17.27	8.2E-03	4.65E-01	5DPI_iCoV2 + RIBI
sulfotransferase activity	GO:0008146	61	4	0.78	+	5.1	9.41E-03	5.22E-01	5DPI_iCoV2 + RIBI
heparin binding	GO:0008201	178	7	2.29	+	3.06	9.59E-03	5.26E-01	5DPI_iCoV2 + RIBI
alcohol sulfotransferase activity	GO:0004027	10	2	0.13	+	15.55	9.76E-03	5.29E-01	5DPI_iCoV2 + RIBI
steroid delta-isomerase activity	GO:0004769	11	2	0.14	+	14.13	1.14E-02	6.14E-01	5DPI_iCoV2 + RIBI
cytokine binding	GO:0019955	142	6	1.83	+	3.28	1.17E-02	6.22E-01	5DPI_iCoV2 + RIBI
extracellular matrix structural constituent	GO:0005201	145	6	1.87	+	3.22	1.28E-02	6.75E-01	5DPI_iCoV2 + RIBI
myosin heavy chain binding	GO:0032036	12	2	0.15	+	12.95	1.32E-02	6.81E-01	5DPI_iCoV2 + RIBI
aromatase activity	GO:0070330	36	3	0.46	+	6.48	1.32E-02	6.88E-01	5DPI_iCoV2 + RIBI
microfilament motor activity	GO:0000146	37	3	0.48	+	6.3	1.42E-02	7.22E-01	5DPI_iCoV2 + RIBI
glycosaminoglycan binding	GO:0005539	240	8	3.09	+	2.59	1.43E-02	7.14E-01	5DPI_iCoV2 + RIBI

lyase activity	GO:0016829	193	7	2.48	+	2.82	1.43E-02	7.19E-01	5DPI_iCoV2 + RIBI
oxidoreductase activity	GO:0016491	769	18	9.89	+	1.82	1.45E-02	7.11E-01	5DPI_iCoV2 + RIBI
growth factor activity	GO:0008083	149	6	1.92	+	3.13	1.45E-02	7.14E-01	5DPI_iCoV2 + RIBI
metal cation:monoatomic cation antiporter activity	GO:0140828	38	3	0.49	+	6.14	1.51E-02	7.2E-01	5DPI_iCoV2 + RIBI
azole transmembrane transporter activity	GO:1901474	13	2	0.17	+	11.96	1.51E-02	7.26E-01	5DPI_iCoV2 + RIBI
carbon-nitrogen lyase activity	GO:0016840	13	2	0.17	+	11.96	1.51E-02	7.33E-01	5DPI_iCoV2 + RIBI
nucleic acid binding	GO:0003676	3371	29	43.37	-	0.67	1.58E-02	7.45E-01	5DPI_iCoV2 + RIBI
L-glutamate transmembrane transporter activity	GO:0005313	14	2	0.18	+	11.1	1.72E-02	7.93E-01	5DPI_iCoV2 + RIBI
tropomyosin binding	GO:0005523	14	2	0.18	+	11.1	1.72E-02	8E-01	5DPI_iCoV2 + RIBI
transmembrane transporter activity	GO:0022857	1077	23	13.86	+	1.66	1.81E-02	8.31E-01	5DPI_iCoV2 + RIBI
transmembrane receptor protein kinase activity	GO:0019199	76	4	0.98	+	4.09	1.9E-02	8.61E-01	5DPI_iCoV2 + RIBI
RNA binding	GO:0003723	1113	6	14.32	-	0.42	1.94E-02	8.71E-01	5DPI_iCoV2 + RIBI
catalytic activity	GO:0003824	5563	89	71.57	+	1.24	1.95E-02	8.67E-01	5DPI_iCoV2 + RIBI
oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen, reduced flavin or flavoprotein as one donor, and incorporation of one atom of oxygen	GO:0016712	78	4	1	+	3.99	2.06E-02	9.09E-01	5DPI_iCoV2 + RIBI
signaling receptor activity	GO:0038023	2418	19	31.11	-	0.61	2.1E-02	9.1E-01	5DPI_iCoV2 + RIBI
molecular transducer activity	GO:0060089	2418	19	31.11	-	0.61	2.1E-02	9.18E-01	5DPI_iCoV2 + RIBI
sodium channel activity	GO:0005272	44	3	0.57	+	5.3	2.18E-02	9.38E-01	5DPI_iCoV2 + RIBI
carboxylic ester hydrolase activity	GO:0052689	165	6	2.12	+	2.83	2.23E-02	9.51E-01	5DPI_iCoV2 + RIBI
voltage-gated monoatomic ion channel activity involved in regulation of presynaptic membrane potential	GO:0099508	17	2	0.22	+	9.14	2.38E-02	1E+00	5DPI_iCoV2 + RIBI
amide transmembrane transporter activity	GO:0042887	46	3	0.59	+	5.07	2.43E-02	1E+00	5DPI_iCoV2 + RIBI
ubiquitin protein ligase binding	GO:0031625	335	0	4.31	-	< 0.01	2.43E-02	1E+00	5DPI_iCoV2 + RIBI
protein homodimerization activity	GO:0042803	803	18	10.33	+	1.74	2.45E-02	1E+00	5DPI_iCoV2 + RIBI
L-asparagine, sodium:proton antiporter activity	GO:0140831	1	1	0.01	+	77.73	2.52E-02	8.4E-01	5DPI_iCoV2 + RIBI
L-histidine, sodium:proton antiporter activity	GO:0140832	1	1	0.01	+	77.73	2.52E-02	8.46E-01	5DPI_iCoV2 + RIBI
L-tyrosine:2-oxoglutarate aminotransferase activity	GO:0004838	1	1	0.01	+	77.73	2.52E-02	8.51E-01	5DPI_iCoV2 + RIBI
asialoglycoprotein receptor activity	GO:0004873	1	1	0.01	+	77.73	2.52E-02	8.57E-01	5DPI_iCoV2 + RIBI
insulin-responsive glucose:proton symporter activity	GO:0005360	1	1	0.01	+	77.73	2.52E-02	8.63E-01	5DPI_iCoV2 + RIBI

10-hydroxy-9-octadecanoate phosphatase activity	GO:0033885	1	1	0.01	+	77.73	2.52E-02	8.69E-01	5DPI_iCoV2 + RIBI
mast cell secretagogue receptor activity	GO:1990595	1	1	0.01	+	77.73	2.52E-02	8.75E-01	5DPI_iCoV2 + RIBI
thyroid-stimulating hormone receptor activity	GO:0004996	1	1	0.01	+	77.73	2.52E-02	8.81E-01	5DPI_iCoV2 + RIBI
interleukin-22 binding	GO:0042017	1	1	0.01	+	77.73	2.52E-02	8.87E-01	5DPI_iCoV2 + RIBI
glucose uniporter activity	GO:0015304	1	1	0.01	+	77.73	2.52E-02	8.94E-01	5DPI_iCoV2 + RIBI
sodium:inorganic phosphate symporter activity	GO:0015319	1	1	0.01	+	77.73	2.52E-02	9E-01	5DPI_iCoV2 + RIBI
L-tyrosine aminotransferase activity	GO:0070547	1	1	0.01	+	77.73	2.52E-02	9.06E-01	5DPI_iCoV2 + RIBI
hydroperoxy icosatetraenoate isomerase activity	GO:0106255	1	1	0.01	+	77.73	2.52E-02	9.13E-01	5DPI_iCoV2 + RIBI
protein serine kinase activity	GO:0106264	1	1	0.01	+	77.73	2.52E-02	9.2E-01	5DPI_iCoV2 + RIBI
secondary active organic cation transmembrane transporter activity	GO:0008513	1	1	0.01	+	77.73	2.52E-02	9.26E-01	5DPI_iCoV2 + RIBI
omega-hydroxyceramide transacylase activity	GO:0106341	1	1	0.01	+	77.73	2.52E-02	9.33E-01	5DPI_iCoV2 + RIBI
azole:proton antiporter activity	GO:0045119	1	1	0.01	+	77.73	2.52E-02	9.4E-01	5DPI_iCoV2 + RIBI
voltage-gated potassium channel activity involved in bundle of His cell action potential repolarization	GO:0086087	1	1	0.01	+	77.73	2.52E-02	9.47E-01	5DPI_iCoV2 + RIBI
voltage-gated potassium channel activity involved in SA node cell action potential repolarization	GO:0086090	1	1	0.01	+	77.73	2.52E-02	9.54E-01	5DPI_iCoV2 + RIBI
glycerophosphoinositol inositolphosphodiesterase activity	GO:0047394	1	1	0.01	+	77.73	2.52E-02	9.62E-01	5DPI_iCoV2 + RIBI
L-gulonolactone oxidase activity	GO:0050105	1	1	0.01	+	77.73	2.52E-02	9.69E-01	5DPI_iCoV2 + RIBI
D-arabinono-1,4-lactone oxidase activity	GO:0003885	1	1	0.01	+	77.73	2.52E-02	9.77E-01	5DPI_iCoV2 + RIBI
calcium ion sequestering activity	GO:0140314	1	1	0.01	+	77.73	2.52E-02	9.84E-01	5DPI_iCoV2 + RIBI
4-nitrophenol 2-monooxygenase activity	GO:0018601	1	1	0.01	+	77.73	2.52E-02	9.92E-01	5DPI_iCoV2 + RIBI
glycosylphosphatidylinositol phospholipase D activity	GO:0004621	1	1	0.01	+	77.73	2.52E-02	1E+00	5DPI_iCoV2 + RIBI
intramolecular transferase activity, transferring hydroxy groups	GO:0050486	1	1	0.01	+	77.73	2.52E-02	1E+00	5DPI_iCoV2 + RIBI
propionate CoA-transferase activity	GO:0018729	1	1	0.01	+	77.73	2.52E-02	1E+00	5DPI_iCoV2 + RIBI
thiol S-methyltransferase activity	GO:0018708	1	1	0.01	+	77.73	2.52E-02	1E+00	5DPI_iCoV2 + RIBI
albendazole monooxygenase activity	GO:0047638	1	1	0.01	+	77.73	2.52E-02	1E+00	5DPI_iCoV2 + RIBI
ubiquitin-like protein ligase binding	GO:0044389	352	0	4.53	-	< 0.01	2.57E-02	8.5E-01	5DPI_iCoV2 + RIBI
neurotransmitter transmembrane transporter activity	GO:0005326	18	2	0.23	+	8.64	2.63E-02	8.52E-01	5DPI_iCoV2 + RIBI

transmembrane receptor protein tyrosine kinase activator activity	GO:0030297	18	2	0.23	+	8.64	2.63E-02	8.57E-01	5DPI_iCoV2 + RIBI
glutathione binding	GO:0043295	18	2	0.23	+	8.64	2.63E-02	8.63E-01	5DPI_iCoV2 + RIBI
molecular_function	GO:0003674	20579	274	264.76	+	1.03	2.67E-02	8.53E-01	5DPI_iCoV2 + RIBI
Unclassified	UNCLASSIFIED	1418	9	18.24	-	0.49	2.67E-02	8.59E-01	5DPI_iCoV2 + RIBI
arachidonic acid epoxygenase activity	GO:0008392	48	3	0.62	+	4.86	2.7E-02	8.58E-01	5DPI_iCoV2 + RIBI
antioxidant activity	GO:0016209	86	4	1.11	+	3.62	2.78E-02	8.79E-01	5DPI_iCoV2 + RIBI
triglyceride lipase activity	GO:0004806	19	2	0.24	+	8.18	2.88E-02	8.98E-01	5DPI_iCoV2 + RIBI
acidic amino acid transmembrane transporter activity	GO:0015172	19	2	0.24	+	8.18	2.88E-02	9.04E-01	5DPI_iCoV2 + RIBI
scaffold protein binding	GO:0097110	89	4	1.15	+	3.49	3.09E-02	9.57E-01	5DPI_iCoV2 + RIBI
arachidonic acid monooxygenase activity	GO:0008391	51	3	0.66	+	4.57	3.13E-02	9.63E-01	5DPI_iCoV2 + RIBI
oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen	GO:0016705	229	7	2.95	+	2.38	3.16E-02	9.69E-01	5DPI_iCoV2 + RIBI
lipid transporter activity	GO:0005319	181	6	2.33	+	2.58	3.26E-02	9.92E-01	5DPI_iCoV2 + RIBI
acyltransferase activity, transferring groups other than amino-acyl groups	GO:0016747	231	7	2.97	+	2.36	3.29E-02	9.95E-01	5DPI_iCoV2 + RIBI
calcium-dependent protein binding	GO:0048306	91	4	1.17	+	3.42	3.3E-02	9.93E-01	5DPI_iCoV2 + RIBI
anion binding	GO:0043168	2371	42	30.5	+	1.38	3.38E-02	1E+00	5DPI_iCoV2 + RIBI
fatty acid ligase activity	GO:0015645	21	2	0.27	+	7.4	3.41E-02	1E+00	5DPI_iCoV2 + RIBI
pyridoxal phosphate binding	GO:0030170	53	3	0.68	+	4.4	3.43E-02	1E+00	5DPI_iCoV2 + RIBI
vitamin B6 binding	GO:0070279	54	3	0.69	+	4.32	3.59E-02	1E+00	5DPI_iCoV2 + RIBI
protein heterodimerization activity	GO:0046982	303	0	3.9	-	< 0.01	3.61E-02	1E+00	5DPI_iCoV2 + RIBI
phosphatidylinositol-5-phosphate binding	GO:0010314	22	2	0.28	+	7.07	3.69E-02	1E+00	5DPI_iCoV2 + RIBI
intramolecular oxidoreductase activity, transposing C=C bonds	GO:0016863	22	2	0.28	+	7.07	3.69E-02	1E+00	5DPI_iCoV2 + RIBI
oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen, NADH as one donor, and incorporation of one atom of oxygen	GO:0016709	55	3	0.71	+	4.24	3.75E-02	1E+00	5DPI_iCoV2 + RIBI
phosphate ion uniporter activity	GO:0140787	2	1	0.03	+	38.86	3.76E-02	9.48E-01	5DPI_iCoV2 + RIBI
ferritin receptor activity	GO:0070287	2	1	0.03	+	38.86	3.76E-02	9.53E-01	5DPI_iCoV2 + RIBI
L-glutamine, sodium:proton antiporter activity	GO:0140830	2	1	0.03	+	38.86	3.76E-02	9.58E-01	5DPI_iCoV2 + RIBI
hepoxilin A3 synthase activity	GO:0051120	2	1	0.03	+	38.86	3.76E-02	9.63E-01	5DPI_iCoV2 + RIBI

interleukin-8 receptor activity	GO:0004918	2	1	0.03	+	38.86	3.76E-02	9.68E-01	5DPI_iCoV2 + RIBI
extracellularly glutamate-gated chloride channel activity	GO:0008068	2	1	0.03	+	38.86	3.76E-02	9.73E-01	5DPI_iCoV2 + RIBI
corticotropin hormone receptor binding	GO:0031780	2	1	0.03	+	38.86	3.76E-02	9.78E-01	5DPI_iCoV2 + RIBI
type 5 melanocortin receptor binding	GO:0031783	2	1	0.03	+	38.86	3.76E-02	9.83E-01	5DPI_iCoV2 + RIBI
chemoattractant activity involved in axon guidance	GO:1902379	2	1	0.03	+	38.86	3.76E-02	9.88E-01	5DPI_iCoV2 + RIBI
coumarin 7-hydroxylase activity	GO:0008389	2	1	0.03	+	38.86	3.76E-02	9.94E-01	5DPI_iCoV2 + RIBI
monoatomic ion antiporter activity involved in regulation of postsynaptic membrane potential	GO:0099580	2	1	0.03	+	38.86	3.76E-02	9.99E-01	5DPI_iCoV2 + RIBI
phosphoenolpyruvate carboxykinase activity	GO:0004613	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
phosphoenolpyruvate carboxykinase activity	GO:0004611	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
tryptophan 5-monooxygenase activity	GO:0004510	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
zinc ion sequestering activity	GO:0140486	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
activin receptor antagonist activity	GO:0038102	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
1-alpha,25-dihydroxyvitamin D3 23-hydroxylase activity	GO:0062181	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
vitamin D 23-hydroxylase activity	GO:0062179	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
ADP-ribosylarginine hydrolase activity	GO:0003875	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
acyl-coenzyme A diphosphatase activity	GO:0106399	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
trimethylamine monooxygenase activity	GO:0034899	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
glucosaminylgalactosylglucosylceramide beta-galactosyltransferase activity	GO:0047275	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
hexose uniporter activity	GO:0008516	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
aryldialkylphosphatase activity	GO:0004063	2	1	0.03	+	38.86	3.76E-02	1E+00	5DPI_iCoV2 + RIBI
catalytic activity, acting on a nucleic acid	GO:0140640	588	2	7.56	-	0.26	3.79E-02	9.46E-01	5DPI_iCoV2 + RIBI
ribonucleoside triphosphate phosphatase activity	GO:0017111	587	2	7.55	-	0.26	3.79E-02	9.49E-01	5DPI_iCoV2 + RIBI
phosphatidic acid binding	GO:0070300	23	2	0.3	+	6.76	3.98E-02	9.79E-01	5DPI_iCoV2 + RIBI
ankyrin binding	GO:0030506	23	2	0.3	+	6.76	3.98E-02	9.84E-01	5DPI_iCoV2 + RIBI
NAD+ ADP-ribosyltransferase activity	GO:0003950	23	2	0.3	+	6.76	3.98E-02	9.88E-01	5DPI_iCoV2 + RIBI
hydro-lyase activity	GO:0016836	58	3	0.75	+	4.02	4.26E-02	1E+00	5DPI_iCoV2 + RIBI
metal cation:proton antiporter activity	GO:0051139	24	2	0.31	+	6.48	4.28E-02	1E+00	5DPI_iCoV2 + RIBI
NAD+-protein ADP-ribosyltransferase activity	GO:1990404	24	2	0.31	+	6.48	4.28E-02	1E+00	5DPI_iCoV2 + RIBI

serine-type endopeptidase activity	GO:0004252	194	6	2.5	+	2.4	4.29E-02	1E+00	5DPI_iCoV2 + RIBI
calmodulin binding	GO:0005516	194	6	2.5	+	2.4	4.29E-02	1E+00	5DPI_iCoV2 + RIBI
hexose transmembrane transporter activity	GO:0015149	25	2	0.32	+	6.22	4.58E-02	1E+00	5DPI_iCoV2 + RIBI
glucose transmembrane transporter activity	GO:0005355	25	2	0.32	+	6.22	4.58E-02	1E+00	5DPI_iCoV2 + RIBI
intramolecular transferase activity	GO:0016866	25	2	0.32	+	6.22	4.58E-02	1E+00	5DPI_iCoV2 + RIBI
voltage-gated sodium channel activity	GO:0005248	25	2	0.32	+	6.22	4.58E-02	1E+00	5DPI_iCoV2 + RIBI
protein kinase C binding	GO:0005080	60	3	0.77	+	3.89	4.61E-02	1E+00	5DPI_iCoV2 + RIBI
symporter activity	GO:0015293	150	5	1.93	+	2.59	4.81E-02	1E+00	5DPI_iCoV2 + RIBI
glutathione peroxidase activity	GO:0004602	26	2	0.33	+	5.98	4.89E-02	1E+00	5DPI_iCoV2 + RIBI
CoA-ligase activity	GO:0016405	26	2	0.33	+	5.98	4.89E-02	1E+00	5DPI_iCoV2 + RIBI
phosphoglycerate mutase activity	GO:0004619	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
nitrate reductase activity	GO:0008940	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
alpha-amylase activity	GO:0004556	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
adenosine-phosphate deaminase activity	GO:0047623	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
nitric-oxide synthase activity	GO:0004517	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
retinol O-fatty-acyltransferase activity	GO:0050252	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
neuregulin receptor activity	GO:0038131	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
G protein-coupled pyrimidinergic nucleotide receptor activity	GO:0071553	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
glycogen synthase activity	GO:0004373	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
AMP deaminase activity	GO:0003876	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
acetylcholine receptor activator activity	GO:0030549	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
acyl-L-homoserine-lactone lactonohydrolase activity	GO:0102007	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
voltage-gated potassium channel activity involved in atrial cardiac muscle cell action potential repolarization	GO:0086089	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
zymogen binding	GO:0035375	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
G protein-coupled UTP receptor activity	GO:0045030	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
spermidine transmembrane transporter activity	GO:0015606	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
vitamin D3 25-hydroxylase activity	GO:0030343	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
bisphosphoglycerate mutase activity	GO:0004082	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI

interleukin-8 binding	GO:0019959	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
calcium:monoatomic cation antiporter activity involved in regulation of postsynaptic cytosolic calcium ion concentration	GO:1905060	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
lactonohydrolase activity	GO:0046573	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
2,3-bisphosphoglycerate-dependent phosphoglycerate mutase activity	GO:0046538	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
vitamin D 24-hydroxylase activity	GO:0070576	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
interleukin-22 receptor activity	GO:0042018	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
CCR10 chemokine receptor binding	GO:0031735	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
glucose:proton symporter activity	GO:0005356	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
norepinephrine:sodium symporter activity	GO:0005334	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
hexose:proton symporter activity	GO:0009679	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
acetylcholine transmembrane transporter activity	GO:0005277	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
L-glutamate uniporter activity	GO:0140788	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
acetate ester transmembrane transporter activity	GO:1901375	3	1	0.04	+	25.91	4.99E-02	1E+00	5DPI_iCoV2 + RIBI
cytokine activity	GO:0005125	231	28	2.36	+	11.85	9.15E-21	4.56E-17	5DPI_iCoV2 + Alum
receptor ligand activity	GO:0048018	534	35	5.46	+	6.41	9.58E-18	2.39E-14	5DPI_iCoV2 + Alum
chemokine activity	GO:0008009	42	15	0.43	+	34.92	1.14E-17	1.9E-14	5DPI_iCoV2 + Alum
signaling receptor activator activity	GO:0030546	545	35	5.57	+	6.28	1.74E-17	2.17E-14	5DPI_iCoV2 + Alum
signaling receptor regulator activity	GO:0030545	591	36	6.05	+	5.96	2.8E-17	2.8E-14	5DPI_iCoV2 + Alum
chemokine receptor binding	GO:0042379	79	15	0.81	+	18.56	3.46E-14	2.87E-11	5DPI_iCoV2 + Alum
cytokine receptor binding	GO:0005126	316	23	3.23	+	7.12	7.36E-13	5.25E-10	5DPI_iCoV2 + Alum
molecular function regulator activity	GO:0098772	2147	59	21.96	+	2.69	1.94E-12	1.21E-09	5DPI_iCoV2 + Alum
molecular function activator activity	GO:0140677	1192	41	12.19	+	3.36	1.43E-11	7.91E-09	5DPI_iCoV2 + Alum
CCR chemokine receptor binding	GO:0048020	58	11	0.59	+	18.54	9.78E-11	4.88E-08	5DPI_iCoV2 + Alum
signaling receptor binding	GO:0005102	1650	47	16.88	+	2.78	1.91E-10	8.68E-08	5DPI_iCoV2 + Alum
G protein-coupled receptor binding	GO:0001664	328	17	3.36	+	5.07	9.44E-08	3.93E-05	5DPI_iCoV2 + Alum
endopeptidase activity	GO:0004175	453	19	4.63	+	4.1	3.79E-07	1.45E-04	5DPI_iCoV2 + Alum
growth factor activity	GO:0008083	149	11	1.52	+	7.22	7.43E-07	2.65E-04	5DPI_iCoV2 + Alum
serine-type endopeptidase activity	GO:0004252	194	12	1.98	+	6.05	1.36E-06	4.52E-04	5DPI_iCoV2 + Alum

serine-type peptidase activity	GO:0008236	211	12	2.16	+	5.56	3.1E-06	9.67E-04	5DPI_iCoV2 + Alum
serine hydrolase activity	GO:0017171	216	12	2.21	+	5.43	3.9E-06	1.14E-03	5DPI_iCoV2 + Alum
peptidase activity	GO:0008233	642	21	6.57	+	3.2	4.27E-06	1.18E-03	5DPI_iCoV2 + Alum
peptidase regulator activity	GO:0061134	267	13	2.73	+	4.76	6.07E-06	1.59E-03	5DPI_iCoV2 + Alum
endopeptidase regulator activity	GO:0061135	214	11	2.19	+	5.03	1.97E-05	4.93E-03	5DPI_iCoV2 + Alum
CXCR chemokine receptor binding	GO:0045236	15	4	0.15	+	26.07	3.52E-05	8.37E-03	5DPI_iCoV2 + Alum
endopeptidase inhibitor activity	GO:0004866	195	10	1.99	+	5.01	4.81E-05	1.09E-02	5DPI_iCoV2 + Alum
carbohydrate binding	GO:0030246	283	12	2.89	+	4.15	5.08E-05	1.1E-02	5DPI_iCoV2 + Alum
peptidase inhibitor activity	GO:0030414	202	10	2.07	+	4.84	6.38E-05	1.33E-02	5DPI_iCoV2 + Alum
CCR1 chemokine receptor binding	GO:0031726	7	3	0.07	+	41.9	1.17E-04	2.33E-02	5DPI_iCoV2 + Alum
olfactory receptor activity	GO:0004984	1169	1	11.96	-	0.08	1.24E-04	2.38E-02	5DPI_iCoV2 + Alum
chitin binding	GO:0008061	11	3	0.11	+	26.66	3.43E-04	6.35E-02	5DPI_iCoV2 + Alum
extracellular matrix binding	GO:0050840	57	5	0.58	+	8.58	4.12E-04	7.34E-02	5DPI_iCoV2 + Alum
cytokine receptor activity	GO:0004896	95	6	0.97	+	6.17	5.74E-04	9.88E-02	5DPI_iCoV2 + Alum
purine ribonucleoside triphosphate binding	GO:0035639	1733	5	17.73	-	0.28	6.28E-04	1.04E-01	5DPI_iCoV2 + Alum
immune receptor activity	GO:0140375	137	7	1.4	+	5	6.76E-04	1.09E-01	5DPI_iCoV2 + Alum
fibronectin binding	GO:0001968	36	4	0.37	+	10.86	7.03E-04	1.1E-01	5DPI_iCoV2 + Alum
purine ribonucleotide binding	GO:0032555	1814	6	18.55	-	0.32	8.82E-04	1.33E-01	5DPI_iCoV2 + Alum
collagen binding	GO:0005518	70	5	0.72	+	6.98	9.88E-04	1.45E-01	5DPI_iCoV2 + Alum
nucleotide binding	GO:0000166	2079	8	21.27	-	0.38	1.18E-03	1.64E-01	5DPI_iCoV2 + Alum
nucleoside phosphate binding	GO:1901265	2079	8	21.27	-	0.38	1.18E-03	1.68E-01	5DPI_iCoV2 + Alum
arachidonate 12-lipoxygenase activity	GO:0004052	4	2	0.04	+	48.88	1.49E-03	1.91E-01	5DPI_iCoV2 + Alum
linoleate 13S-lipoxygenase activity	GO:0016165	4	2	0.04	+	48.88	1.49E-03	1.96E-01	5DPI_iCoV2 + Alum
arachidonate 15-lipoxygenase activity	GO:0050473	4	2	0.04	+	48.88	1.49E-03	2.01E-01	5DPI_iCoV2 + Alum
metalloendopeptidase activity	GO:0004222	118	6	1.21	+	4.97	1.67E-03	2.08E-01	5DPI_iCoV2 + Alum
RNA nuclease activity	GO:0004540	121	6	1.24	+	4.85	1.88E-03	2.29E-01	5DPI_iCoV2 + Alum
CCR3 chemokine receptor binding	GO:0031728	5	2	0.05	+	39.11	2.07E-03	2.46E-01	5DPI_iCoV2 + Alum
ATP binding	GO:0005524	1408	4	14.4	-	0.28	2.2E-03	2.55E-01	5DPI_iCoV2 + Alum
ribonucleotide binding	GO:0032553	1832	7	18.74	-	0.37	2.25E-03	2.56E-01	5DPI_iCoV2 + Alum

protein binding	GO:0005515	9462	120	96.78	+	1.24	2.27E-03	2.51E-01	5DPI_iCoV2 + Alum
enzyme regulator activity	GO:0030234	1285	25	13.14	+	1.9	2.4E-03	2.6E-01	5DPI_iCoV2 + Alum
C-C chemokine receptor activity	GO:0016493	24	3	0.25	+	12.22	2.5E-03	2.66E-01	5DPI_iCoV2 + Alum
serine-type endopeptidase inhibitor activity	GO:0004867	129	6	1.32	+	4.55	2.56E-03	2.66E-01	5DPI_iCoV2 + Alum
chemokine receptor activity	GO:0004950	25	3	0.26	+	11.73	2.78E-03	2.72E-01	5DPI_iCoV2 + Alum
C-C chemokine binding	GO:0019957	25	3	0.26	+	11.73	2.78E-03	2.78E-01	5DPI_iCoV2 + Alum
G protein-coupled chemoattractant receptor activity	GO:0001637	25	3	0.26	+	11.73	2.78E-03	2.84E-01	5DPI_iCoV2 + Alum
heterocyclic compound binding	GO:1901363	5371	36	54.94	-	0.66	2.91E-03	2.79E-01	5DPI_iCoV2 + Alum
monosaccharide binding	GO:0048029	92	5	0.94	+	5.31	3.08E-03	2.85E-01	5DPI_iCoV2 + Alum
oxidoreductase activity, acting on single donors with incorporation of molecular oxygen, incorporation of two atoms of oxygen	GO:0016702	26	3	0.27	+	11.28	3.08E-03	2.9E-01	5DPI_iCoV2 + Alum
hydrolase activity	GO:0016787	2363	39	24.17	+	1.61	3.29E-03	2.99E-01	5DPI_iCoV2 + Alum
oxidoreductase activity, acting on single donors with incorporation of molecular oxygen	GO:0016701	27	3	0.28	+	10.86	3.4E-03	3.03E-01	5DPI_iCoV2 + Alum
cytoskeletal protein binding	GO:0008092	1021	2	10.44	-	0.19	3.43E-03	3E-01	5DPI_iCoV2 + Alum
CCR2 chemokine receptor binding	GO:0031727	7	2	0.07	+	27.93	3.51E-03	3.02E-01	5DPI_iCoV2 + Alum
enzyme inhibitor activity	GO:0004857	410	11	4.19	+	2.62	3.92E-03	3.31E-01	5DPI_iCoV2 + Alum
purine nucleotide binding	GO:0017076	1924	8	19.68	-	0.41	3.97E-03	3.3E-01	5DPI_iCoV2 + Alum
cytokine binding	GO:0019955	142	6	1.45	+	4.13	4.03E-03	3.3E-01	5DPI_iCoV2 + Alum
dicarboxylic acid transmembrane transporter activity	GO:0005310	29	3	0.3	+	10.11	4.09E-03	3.29E-01	5DPI_iCoV2 + Alum
adenyl ribonucleotide binding	GO:0032559	1479	5	15.13	-	0.33	4.35E-03	3.44E-01	5DPI_iCoV2 + Alum
laminin binding	GO:0043236	30	3	0.31	+	9.78	4.47E-03	3.48E-01	5DPI_iCoV2 + Alum
metallopeptidase activity	GO:0008237	198	7	2.03	+	3.46	5E-03	3.84E-01	5DPI_iCoV2 + Alum
integrin binding	GO:0005178	152	6	1.55	+	3.86	5.53E-03	4.18E-01	5DPI_iCoV2 + Alum
mannose binding	GO:0005537	33	3	0.34	+	8.89	5.72E-03	4.26E-01	5DPI_iCoV2 + Alum
chemokine binding	GO:0019956	34	3	0.35	+	8.63	6.18E-03	4.53E-01	5DPI_iCoV2 + Alum
solute:monoatomic cation symporter activity	GO:0015294	113	5	1.16	+	4.33	7.06E-03	5.11E-01	5DPI_iCoV2 + Alum
transferase activity	GO:0016740	2239	11	22.9	-	0.48	7.24E-03	5.16E-01	5DPI_iCoV2 + Alum
odorant binding	GO:0005549	534	0	5.46	-	< 0.01	7.33E-03	5.15E-01	5DPI_iCoV2 + Alum

transition metal ion binding	GO:0046914	989	19	10.12	+	1.88	8.99E-03	6.23E-01	5DPI_iCoV2 + Alum
iron ion binding	GO:0005506	171	6	1.75	+	3.43	9.44E-03	6.46E-01	5DPI_iCoV2 + Alum
poly-specific ribonuclease activity	GO:0004535	13	2	0.13	+	15.04	9.83E-03	6.63E-01	5DPI_iCoV2 + Alum
organic cyclic compound binding	GO:0097159	5453	39	55.78	-	0.7	1.01E-02	6.75E-01	5DPI_iCoV2 + Alum
water transmembrane transporter activity	GO:0005372	14	2	0.14	+	13.97	1.12E-02	7.33E-01	5DPI_iCoV2 + Alum
chemoattractant activity	GO:0042056	43	3	0.44	+	6.82	1.13E-02	7.22E-01	5DPI_iCoV2 + Alum
heparin binding	GO:0008201	178	6	1.82	+	3.3	1.13E-02	7.32E-01	5DPI_iCoV2 + Alum
C4-dicarboxylate transmembrane transporter activity	GO:0015556	15	2	0.15	+	13.04	1.26E-02	7.74E-01	5DPI_iCoV2 + Alum
phospholipase activator activity	GO:0016004	15	2	0.15	+	13.04	1.26E-02	7.83E-01	5DPI_iCoV2 + Alum
1-phosphatidylinositol-3-kinase regulator activity	GO:0046935	15	2	0.15	+	13.04	1.26E-02	7.93E-01	5DPI_iCoV2 + Alum
adenyl nucleotide binding	GO:0030554	1588	7	16.24	-	0.43	1.32E-02	8.04E-01	5DPI_iCoV2 + Alum
G protein-coupled amine receptor activity	GO:0008227	46	3	0.47	+	6.38	1.34E-02	8.06E-01	5DPI_iCoV2 + Alum
icosanoid receptor activity	GO:0004953	16	2	0.16	+	12.22	1.4E-02	8.34E-01	5DPI_iCoV2 + Alum
G protein-coupled receptor activity	GO:0004930	743	15	7.6	+	1.97	1.41E-02	8.3E-01	5DPI_iCoV2 + Alum
hormone activity	GO:0005179	137	5	1.4	+	3.57	1.49E-02	8.65E-01	5DPI_iCoV2 + Alum
insulin-like growth factor receptor binding	GO:0005159	17	2	0.17	+	11.5	1.56E-02	8.94E-01	5DPI_iCoV2 + Alum
molecular function inhibitor activity	GO:0140678	552	12	5.65	+	2.13	1.57E-02	8.91E-01	5DPI_iCoV2 + Alum
calcium ion binding	GO:0005509	631	13	6.45	+	2.01	1.58E-02	8.85E-01	5DPI_iCoV2 + Alum
lipase activator activity	GO:0060229	19	2	0.19	+	10.29	1.89E-02	1E+00	5DPI_iCoV2 + Alum
oligosaccharide binding	GO:0070492	19	2	0.19	+	10.29	1.89E-02	1E+00	5DPI_iCoV2 + Alum
nuclease activity	GO:0004518	202	6	2.07	+	2.9	1.95E-02	1E+00	5DPI_iCoV2 + Alum
nucleic acid binding	GO:0003676	3371	22	34.48	-	0.64	1.96E-02	1E+00	5DPI_iCoV2 + Alum
interleukin-13 receptor binding	GO:0005144	1	1	0.01	+	97.76	2.01E-02	8.59E-01	5DPI_iCoV2 + Alum
amidinotransferase activity	GO:0015067	1	1	0.01	+	97.76	2.01E-02	8.67E-01	5DPI_iCoV2 + Alum
glycine amidinotransferase activity	GO:0015068	1	1	0.01	+	97.76	2.01E-02	8.74E-01	5DPI_iCoV2 + Alum
hepoxilin-epoxide hydrolase activity	GO:0047977	1	1	0.01	+	97.76	2.01E-02	8.82E-01	5DPI_iCoV2 + Alum
amino-acid betaine transmembrane transporter activity	GO:0015199	1	1	0.01	+	97.76	2.01E-02	8.9E-01	5DPI_iCoV2 + Alum
NADPH phosphatase activity	GO:0102757	1	1	0.01	+	97.76	2.01E-02	8.98E-01	5DPI_iCoV2 + Alum
C5a anaphylatoxin chemotactic receptor binding	GO:0031714	1	1	0.01	+	97.76	2.01E-02	9.06E-01	5DPI_iCoV2 + Alum

C5L2 anaphylatoxin chemotactic receptor binding	GO:0031715	1	1	0.01	+	97.76	2.01E-02	9.14E-01	5DPI_iCoV2 + Alum
CCR4 chemokine receptor binding	GO:0031729	1	1	0.01	+	97.76	2.01E-02	9.23E-01	5DPI_iCoV2 + Alum
galactose:sodium symporter activity	GO:0015371	1	1	0.01	+	97.76	2.01E-02	9.31E-01	5DPI_iCoV2 + Alum
high-affinity IgE receptor activity	GO:0019768	1	1	0.01	+	97.76	2.01E-02	9.4E-01	5DPI_iCoV2 + Alum
acetylgalactosaminyl-O-glycosyl-glycoprotein beta-1,6-N-acetylglucosaminyltransferase activity	GO:0047225	1	1	0.01	+	97.76	2.01E-02	9.49E-01	5DPI_iCoV2 + Alum
acetylgalactosaminyl-O-glycosyl-seryl-glycoprotein beta-1,6-N-acetylglucosaminyltransferase activity	GO:0106325	1	1	0.01	+	97.76	2.01E-02	9.58E-01	5DPI_iCoV2 + Alum
acetylgalactosaminyl-O-glycosyl-threonyl-glycoprotein beta-1,6-N-acetylglucosaminyltransferase activity	GO:0106326	1	1	0.01	+	97.76	2.01E-02	9.67E-01	5DPI_iCoV2 + Alum
cholesterol 25-hydroxylase activity	GO:0001567	1	1	0.01	+	97.76	2.01E-02	9.76E-01	5DPI_iCoV2 + Alum
all-trans retinoic acid 18-hydroxylase activity	GO:0062183	1	1	0.01	+	97.76	2.01E-02	9.86E-01	5DPI_iCoV2 + Alum
interleukin-33 receptor binding	GO:0002112	1	1	0.01	+	97.76	2.01E-02	9.96E-01	5DPI_iCoV2 + Alum
propane-1,3-diamine oxidase activity	GO:0052600	1	1	0.01	+	97.76	2.01E-02	1E+00	5DPI_iCoV2 + Alum
aconitate decarboxylase activity	GO:0047613	1	1	0.01	+	97.76	2.01E-02	1E+00	5DPI_iCoV2 + Alum
NADP phosphatase activity	GO:0019178	1	1	0.01	+	97.76	2.01E-02	1E+00	5DPI_iCoV2 + Alum
methylputrescine oxidase activity	GO:0052599	1	1	0.01	+	97.76	2.01E-02	1E+00	5DPI_iCoV2 + Alum
histamine oxidase activity	GO:0052598	1	1	0.01	+	97.76	2.01E-02	1E+00	5DPI_iCoV2 + Alum
G protein-coupled bile acid receptor activity	GO:0038182	1	1	0.01	+	97.76	2.01E-02	1E+00	5DPI_iCoV2 + Alum
interleukin-33 binding	GO:0002113	1	1	0.01	+	97.76	2.01E-02	1E+00	5DPI_iCoV2 + Alum
salt transmembrane transporter activity	GO:1901702	582	12	5.95	+	2.02	2.05E-02	8.69E-01	5DPI_iCoV2 + Alum
phosphatidylinositol 3-kinase regulator activity	GO:0035014	20	2	0.2	+	9.78	2.06E-02	8.66E-01	5DPI_iCoV2 + Alum
symporter activity	GO:0015293	150	5	1.53	+	3.26	2.09E-02	8.71E-01	5DPI_iCoV2 + Alum
growth factor receptor binding	GO:0070851	151	5	1.54	+	3.24	2.15E-02	8.78E-01	5DPI_iCoV2 + Alum
monooxygenase activity	GO:0004497	151	5	1.54	+	3.24	2.15E-02	8.86E-01	5DPI_iCoV2 + Alum
G protein-coupled serotonin receptor activity	GO:0004993	22	2	0.23	+	8.89	2.43E-02	9.87E-01	5DPI_iCoV2 + Alum
carboxylic acid binding	GO:0031406	217	6	2.22	+	2.7	2.64E-02	1E+00	5DPI_iCoV2 + Alum
heme binding	GO:0020037	160	5	1.64	+	3.06	2.65E-02	1E+00	5DPI_iCoV2 + Alum
serotonin receptor activity	GO:0099589	24	2	0.25	+	8.15	2.83E-02	1E+00	5DPI_iCoV2 + Alum

granulocyte colony-stimulating factor receptor binding	GO:0005130	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
1-propan-2-amine binding	GO:0071886	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
prostacyclin receptor activity	GO:0016501	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
activin receptor antagonist activity	GO:0038102	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
folic acid receptor activity	GO:0061714	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
interleukin-33 receptor activity	GO:0002114	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
leukotriene B4 receptor activity	GO:0001632	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
inorganic diphosphate transmembrane transporter activity	GO:0030504	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
long-chain-alcohol O-fatty-acyltransferase activity	GO:0047196	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
arginase activity	GO:0004053	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
cholesterol monooxygenase activity	GO:0008386	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
arachidoyl-CoA:1-dodecanol O-acyltransferase activity	GO:0102966	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
fructose 1,6-bisphosphate 1-phosphatase activity	GO:0042132	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
phosphatidylinositol-3,4,5-trisphosphate 5-phosphatase activity	GO:0034485	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
N-acetyllactosaminide beta-1,6-N-acetylglucosaminyltransferase activity	GO:0008109	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
alpha-2C adrenergic receptor binding	GO:0031696	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
alpha-glucoside transmembrane transporter activity	GO:0015151	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
hepoxilin A3 synthase activity	GO:0051120	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
lactoperoxidase activity	GO:0140825	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
oncostatin-M receptor binding	GO:0005147	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
interleukin-5 receptor binding	GO:0005137	2	1	0.02	+	48.88	3.01E-02	1E+00	5DPI_iCoV2 + Alum
tetrapyrrole binding	GO:0046906	169	5	1.73	+	2.89	3.23E-02	1E+00	5DPI_iCoV2 + Alum
peptidase activator activity	GO:0016504	66	3	0.68	+	4.44	3.29E-02	1E+00	5DPI_iCoV2 + Alum
active monoatomic ion transmembrane transporter activity	GO:0022853	229	6	2.34	+	2.56	3.29E-02	1E+00	5DPI_iCoV2 + Alum
oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen	GO:0016705	229	6	2.34	+	2.56	3.29E-02	1E+00	5DPI_iCoV2 + Alum
carboxylic acid transmembrane transporter activity	GO:0046943	170	5	1.74	+	2.88	3.3E-02	1E+00	5DPI_iCoV2 + Alum

organic acid transmembrane transporter activity	GO:0005342	171	5	1.75	+	2.86	3.37E-02	1E+00	5DPI_iCoV2 + Alum
organic acid binding	GO:0043177	233	6	2.38	+	2.52	3.52E-02	1E+00	5DPI_iCoV2 + Alum
sulfur compound binding	GO:1901681	297	7	3.04	+	2.3	3.57E-02	1E+00	5DPI_iCoV2 + Alum
tubulin binding	GO:0015631	385	0	3.94	-	< 0.01	3.62E-02	1E+00	5DPI_iCoV2 + Alum
bicarbonate transmembrane transporter activity	GO:0015106	28	2	0.29	+	6.98	3.69E-02	1E+00	5DPI_iCoV2 + Alum
L-amino acid transmembrane transporter activity	GO:0015179	70	3	0.72	+	4.19	3.8E-02	1E+00	5DPI_iCoV2 + Alum
amino acid:monoatomic cation symporter activity	GO:0005416	29	2	0.3	+	6.74	3.92E-02	1E+00	5DPI_iCoV2 + Alum
glycosaminoglycan binding	GO:0005539	240	6	2.45	+	2.44	3.96E-02	1E+00	5DPI_iCoV2 + Alum
chondroitin 4-sulfotransferase activity	GO:0047756	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
C-4 methylsterol oxidase activity	GO:0000254	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
Toll-like receptor 4 binding	GO:0035662	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
nitric-oxide synthase activity	GO:0004517	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
dopamine beta-monooxygenase activity	GO:0004500	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
bile acid receptor activity	GO:0038181	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
beta-1,3-galactosyl-O-glycosyl-glycoprotein beta-1,6-N-acetylglucosaminyltransferase activity	GO:0003829	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
Gq/11-coupled serotonin receptor activity	GO:0001587	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
tetrahydrobiopterin binding	GO:0034617	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
type II activin receptor binding	GO:0070699	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
alpha2-adrenergic receptor activity	GO:0004938	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
iodide transmembrane transporter activity	GO:0015111	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
tryptophan 2,3-dioxygenase activity	GO:0004833	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
sodium:dicarboxylate symporter activity	GO:0017153	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
glucoside transmembrane transporter activity	GO:0042947	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
interleukin-4 receptor binding	GO:0005136	3	1	0.03	+	32.59	3.99E-02	1E+00	5DPI_iCoV2 + Alum
cell adhesion molecule binding	GO:0050839	305	7	3.12	+	2.24	4.02E-02	1E+00	5DPI_iCoV2 + Alum
3'-5'-RNA exonuclease activity	GO:0000175	30	2	0.31	+	6.52	4.15E-02	1E+00	5DPI_iCoV2 + Alum
organic anion transmembrane transporter activity	GO:0008514	243	6	2.49	+	2.41	4.16E-02	1E+00	5DPI_iCoV2 + Alum
inorganic molecular entity transmembrane transporter activity	GO:0015318	651	12	6.66	+	1.8	4.66E-02	1E+00	5DPI_iCoV2 + Alum

RNA exonuclease activity, producing 5'-phosphomonoesters	GO:0016896	33	2	0.34	+	5.93	4.88E-02	1E+00	5DPI_iCoV2 + Alum
protein-RNA adaptor activity	GO:0140517	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
diamine oxidase activity	GO:0052597	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
L-lactate dehydrogenase activity	GO:0004459	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
palmitoyl-CoA 9-desaturase activity	GO:0032896	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
N-acetyl-beta-D-galactosaminidase activity	GO:0102148	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
amylin receptor activity	GO:0097643	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
group III metabotropic glutamate receptor activity	GO:0001642	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
adrenomedullin receptor activity	GO:0001605	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
histone acetyltransferase regulator activity	GO:0035034	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
norepinephrine binding	GO:0051380	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
urea channel activity	GO:0015265	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
glycerol channel activity	GO:0015254	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
leukotriene receptor activity	GO:0004974	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
tricarboxylic acid transmembrane transporter activity	GO:0015142	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
citrate transmembrane transporter activity	GO:0015137	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum
oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen, reduced ascorbate as one donor, and incorporation of one atom of oxygen	GO:0016715	4	1	0.04	+	24.44	4.96E-02	1E+00	5DPI_iCoV2 + Alum