

**Table S1.** Composite disease scores for dogs in vaccine-challenge study

<b>Dog Number</b>	<b>Total Lung CFU<sup>a</sup></b>	<b>LN CFU/g<sup>a</sup></b>	<b>Recipr Titer</b>	<b>Lung Nodules (#)</b>	<b>Lymph Node Score<sup>b</sup></b>	<b>Histopath Spherule Score<sup>c</sup></b>	<b>Total Histopath Score<sup>c</sup></b>	<b>Radiology Score<sup>d</sup></b>	<b>Neutrophilia<sup>e</sup></b>	<b>Mono cytosis<sup>e</sup></b>	<b>Low Albumin<sup>f</sup></b>	<b>High Globulin<sup>f</sup></b>	<b>Recipr A/G ratio<sup>g</sup></b>	<b>Total Score</b>
<b>10K PB</b>														
5696	1.6	0.0	0	0	0	0	0	2	0	0	0	0	0.5	<b>4.1</b>
5698	2.8	0.0	8	8	4	0	18	0	1	0	0	0	0.7	<b>42.5</b>
5699	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0.6	<b>0.6</b>
5701	1.7	1.6	0	0	0	0	0	0	0	0	0	0	0.6	<b>3.9</b>
5725	1.7	0.0	0 <sup>f</sup>	0	0	0	2	0	0	3	0	0	0.7	<b>7.4</b>
5726	0.0	0.0	0	0	1	0	0	0	0	0	0	0	0.6	<b>1.6</b>
<b>50K PB</b>														
5688	2.7	1.4	0	0	0	0	9	2	0	0	0	0	0.5	<b>15.6</b>
5691	1.6	0.0	0	0	0	0	2	0	0	0	0	0	0.7	<b>4.3</b>
5693	1.4	0.0	0	0	0	0	2	0	0	0	0	0	0.6	<b>4.0</b>
5694	0.0	0.0	0	1	0	0	4	3	0	0	0	0	0.5	<b>8.5</b>
5697	2.4	0.0	0	0	0	0	6	3	0	3	0	0	0.5	<b>14.9</b>
5715	2.9	2.4	0	1	0	1	12	0	0	1	0	0	0.5	<b>20.8</b>
<b>100K PB</b>														
5684	1.4	0.0	0	0	0	0	2	0	1	0	0	0	0.7	<b>5.1</b>
5702	3.7	0.0	8	1	3	3	25	11	1	1	0	0	0.7	<b>57.4</b>
5716	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0.5	<b>0.5</b>
5719	0.0	0.0	0	0	0	0	2	0	0	0	0	0	0.6	<b>2.6</b>
5724	0.0	0.0	0	0	0	0	2	0	0	0	0	0	0.7	<b>2.7</b>
5728	0.0	0.0	0	1	0	0	0	0	1	0	0	0	0.9	<b>2.9</b>
<b>100K P</b>														
5686	3.2	2.8	0	2	0	0	0	0	1	1	0	0	0.8	<b>10.8</b>
5689	4.4	1.5	64	12	4	2	19	25	1	2	1	1	1.5	<b>138.4</b>
5690	3.9	2.8	8	3	1	1	14	0	0	0	0	0	0.7	<b>34.4</b>
5714	3.7	1.8	32	4	4	1	23	12	3	4	0	0	0.9	<b>89.4</b>
5718	4.6	1.0	4	1	1	0	9	9	0	0	0	0	1.1	<b>30.7</b>
5727	3.8	2.9	0	2	0	1	20	0	1	0	0	0	0.7	<b>31.4</b>

<b>Control</b>															
5685	4.4	2.2	0	16	4	3	53	17	3	3	0	0	1.1	<b>106.7</b>	
5687	4.5	2.7	8	20	4	4	58	19	2	4	0	0	0.9	<b>127.1</b>	
5692	4.6	2.8	32	33	4	6	67	21	3	4	0	0	1.1	<b>178.4</b>	
5695	3.1	0.3	16	1	4	1	14	13	3	3	0	0	1.4	<b>59.7</b>	
5700	4.4	1.3	32	15	4	0	37	21	3	4	1	1	1.6	<b>125.3</b>	
5717	4.6	2.6	8	40	3	5	60	21	0	0	0	0	0.7	<b>144.9</b>	

<sup>a</sup> Log10 of actual value.

<sup>b</sup> 0=normal; 1=minimal; 2=mild; 3=moderate; 4=severe.

<sup>c</sup> See Suppl. Table 1.

<sup>d</sup> See Suppl. Table 2.

<sup>e</sup> Dogs were given 1 point for each bleeding time point with elevated neutrophils or monocytes.

<sup>f</sup> Dogs were assigned 1 point if globulin was elevated or albumin decreased outside reference ranges at the terminal serum collection.

<sup>g</sup> Calculated from terminal albumin and globulin values.

**Table S2.** Canine serology from prevaccination to terminal sera. MiraVista Canine Coccidioidal IgG Antibody EIA® results from pre-immunization (Vx D0) through termination at Day 56 post-challenge (Chlg D56). Terminal AGID titers are also shown.

Dog Number	Vx <sup>a</sup> D0	Vx D14	Vx D28	Vx D42	Chlg <sup>b</sup> D0	Chlg D14	Chalg D28	Chlg D42	Chlg D56	Terminal AGID Titer
<b>10K PB</b>										
5696	N	N	N	N	N	N	N	N	N	N
5698	N	N	N	N	N	N	N	N	N	1:8
5699	N	N	N	N	N	N	N	N	N	N
5701	N	N	N	N	N	N	N	N	N	N
5725	N	N	N	N	9.8(I) <sup>c</sup>	N	N	N	N	N
5726	N	N	N	N	N	N	N	N	N	N
<b>50K PB</b>										
5688	N	N	N	N	N	N	N	N	N	N
5691	N	N	N	N	N	N	8.2(I)	N	N	N
5693	N	N	N	N	N	N	N	N	N	N
5694	N	N	N	N	N	N	N	N	N	N
5697	N	N	N	N	N	N	N	N	14.5(+)	N
5715	N	N	N	N	N	N	N	N	N	N
<b>100K PB</b>										
5684	N	N	N	N	N	N	N	N	N	N
5702	N	N	N	N	N	N	36.0(+)	50.6(+)	48.1(+)	1:8
5716	N	N	N	21.8(+)	N	N	N	N	N	N
5719	N	N	N	N	N	N	N	N	N	N
5724	N	N	N	N	N	N	N	N	N	N
5728	N	N	N	N	N	N	N	N	N	N
<b>100K P</b>										
5686	N	N	N	N	N	N	N	N	N	N
5689	N	N	N	N	N	26.9(+)	17.6(+)	35.4(+)	45.5(+)	1:64

5690	N	N	N	N	N	12.3(+)	17.2(+)	N	32.6(+)	1:8
5714	N	N	N	N	N	N	N	N	23.3(+)	1:32
5718	N	N	N	N	N	N	N	N	84.9(+)	1:4
5727	N	N	N	N	N	N	11.8(+)	N	N	N
<b>Control</b>										
5685	N	N	N	N	N	N	28.3(+)	N	28.9(+)	N
5687	N	N	N	N	N	N	N	N	N	1:8
5692	N	N	N	N	N	N	10.6(+)	10.5(+)	51.3(+)	1:32
5695	N	N	N	N	N	N	N	N	N	1:16
5700	N	N	N	N	N	N	10.8(+)	37.6(+)	34.0(+)	1:32
5717	N	N	N	N	N	20.8(+)	31.6(+)	34.6(+)	22.5(+)	1:8

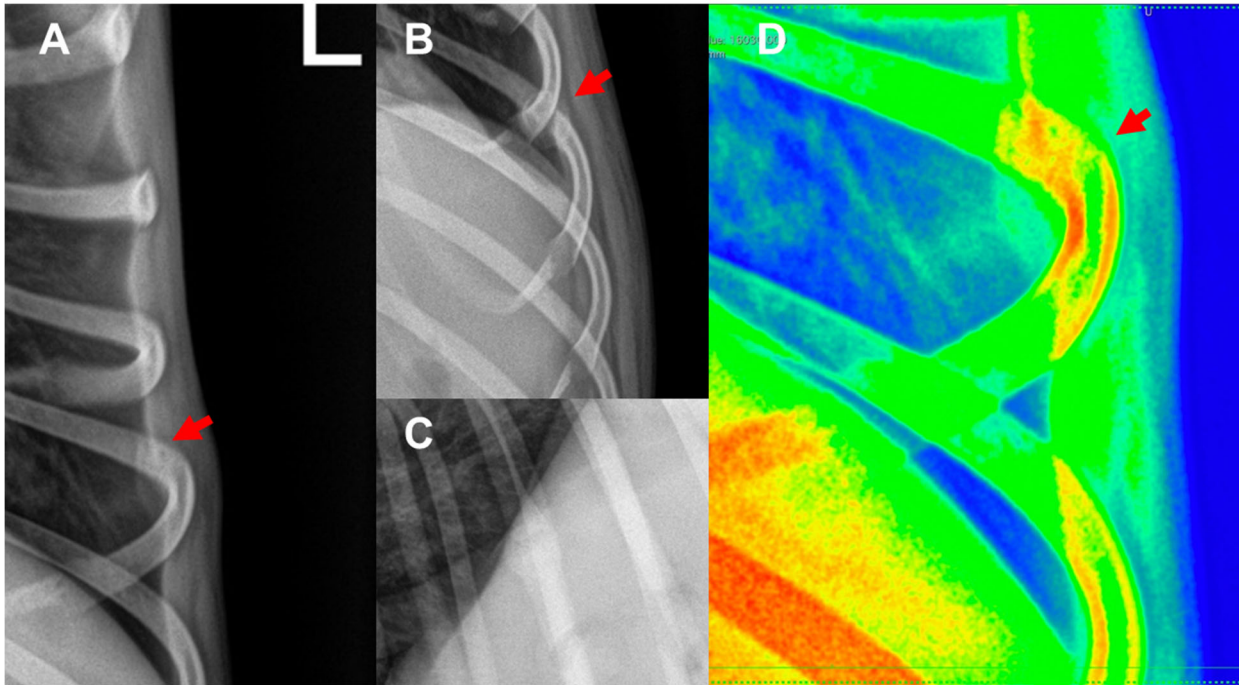
N = negative (<8 EU [EIA Units]; I = intermediate (8 - <10 EU ); (+) = positive (≥10 EU).

<sup>a</sup>V<sub>x</sub> = SC vaccination with viable arthroconidia of avirulent *ΔcpsI*

<sup>b</sup>Chlg = intratracheal inoculation (challenge) with 10,000 arthroconidia of Silveira delivered in nebulized suspension. Challenge occurred either 63 days (n=15) or 70 days (n=15) after V<sub>x</sub> day 0.

<sup>c</sup>This dog also had an AGID IgG titer of 1:4 at this time point (day 63 post-vaccination).

**Figure S1.** Disseminated rib lesion in a dog vaccinated only once (100K P).



**Figure S1.** Day 14 (A) and day 56 (B and C) post-infection radiographs showing a lytic-proliferative lesion (arrows) on the left 9<sup>th</sup> rib of a dog given primary vaccination only. The lesion has enlarged by day 56. D) Colorized image of the lesion (arrow) from B that more clearly demonstrates the extent of lesion activity.

**Table S3.** Histopathology Scoring Parameters. Sections were scored in each category and the scores summed for the tissue section, then all sections for the dog.

Score	Overall Lesion Extent	Inflammation	Necrosis	Organisms (Intact/ruptured spherules)	Mineralization	Fibrosis
0	None	None	None	None	None	None
1	<10%	Focal granulomatous <sup>a</sup>	Single focus	1-2/lesion	Single focus	Minimal fibrosis
2	11-30%	≥2 granulomatous foci, multifocal, coalescing	≥2 foci, multifocal	3-10/lesion	≥2 foci, multifocal	Equal cellularity, fibrosis
3	31-60%	Focal pyogranulomatous <sup>b</sup>	≥2 foci, multifocal, coalescing	>10/lesion	≥2 foci, multifocal, coalescing	More fibrosis than cellularity
4	>60%	≥2 pyogranulomatous foci, multifocal, coalescing	Extensive, coalescing		Extensive, coalescing	Extensive, low cellularity

<sup>a</sup> Macrophages and lymphocytes only

<sup>b</sup> Macrophages, lymphocytes, neutrophils

**Table S4.** Thoracic Radiograph Scoring Parameters. Description of abnormalities and numeric assessment of lesion severity. Each Study<sup>a</sup> was scored and the scores summed for each dog.

Pulmonary Pattern Distribution	Pulmonary Pattern	Pulmonary Lesion Score	Thoracic Lymphad- enopathy	Lymphad- enopathy Score	Pleural Disease	Pericardial Disease	Bone Lesion
None	Interstitial	0=Normal	None	0=Normal	0=No	0=No	0=No
Hilar	Nodular/Mass	1=Minimal	Hilar	1=Minimal	1=Yes	1=Yes	1=Yes
Central	Reticulonodular	2=Mild	Mediastinal	2=Mild			
Peripheral	Alveolar	3=Moderate	Both	3=Moderate			
	Mineralization	4=Severe		4=Severe			

<sup>a</sup>A Study consists of three views of the thorax, left and right lateral and ventrodorsal, and there were 5 studies 2 weeks apart for each dog, including the pre-infection study.