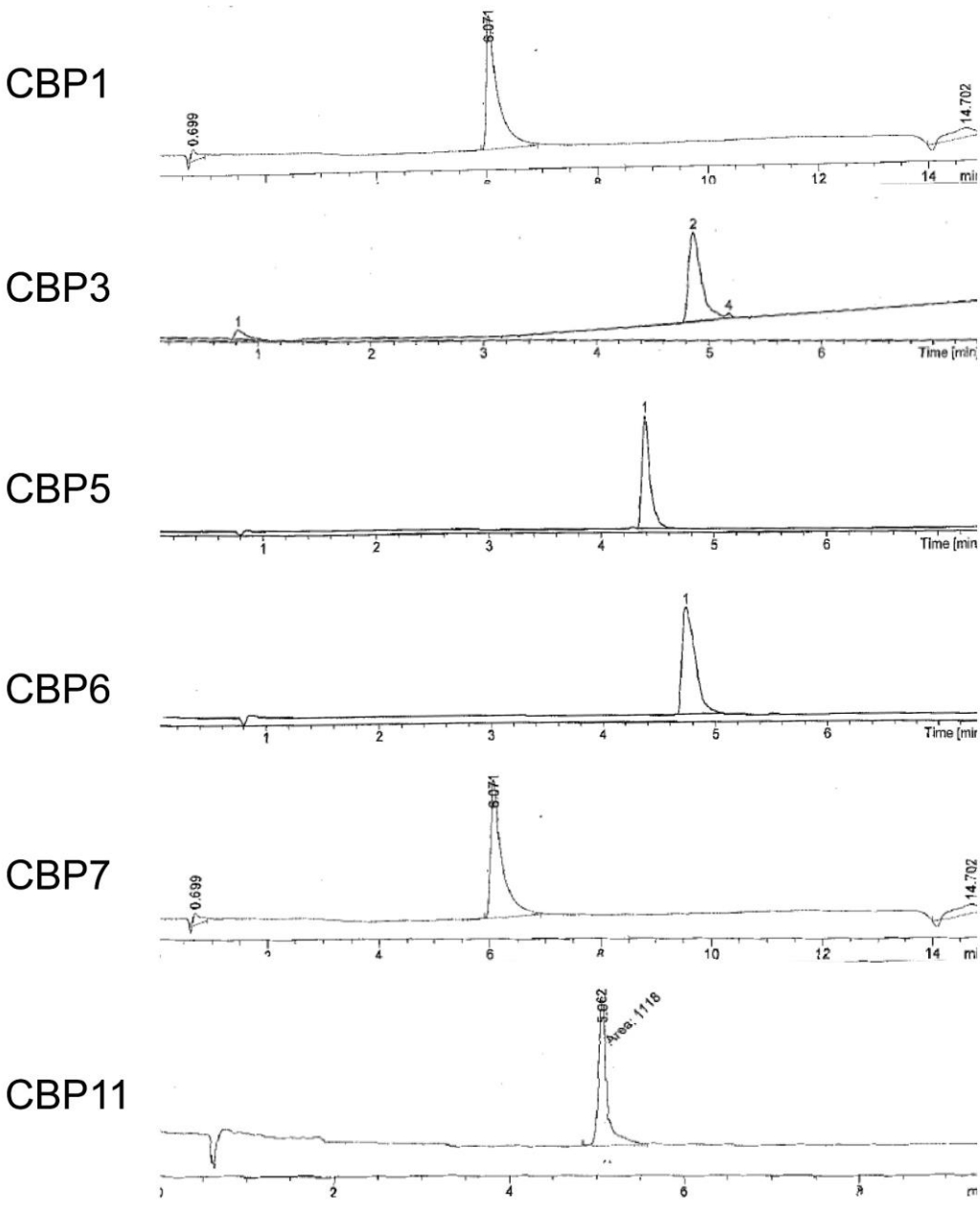
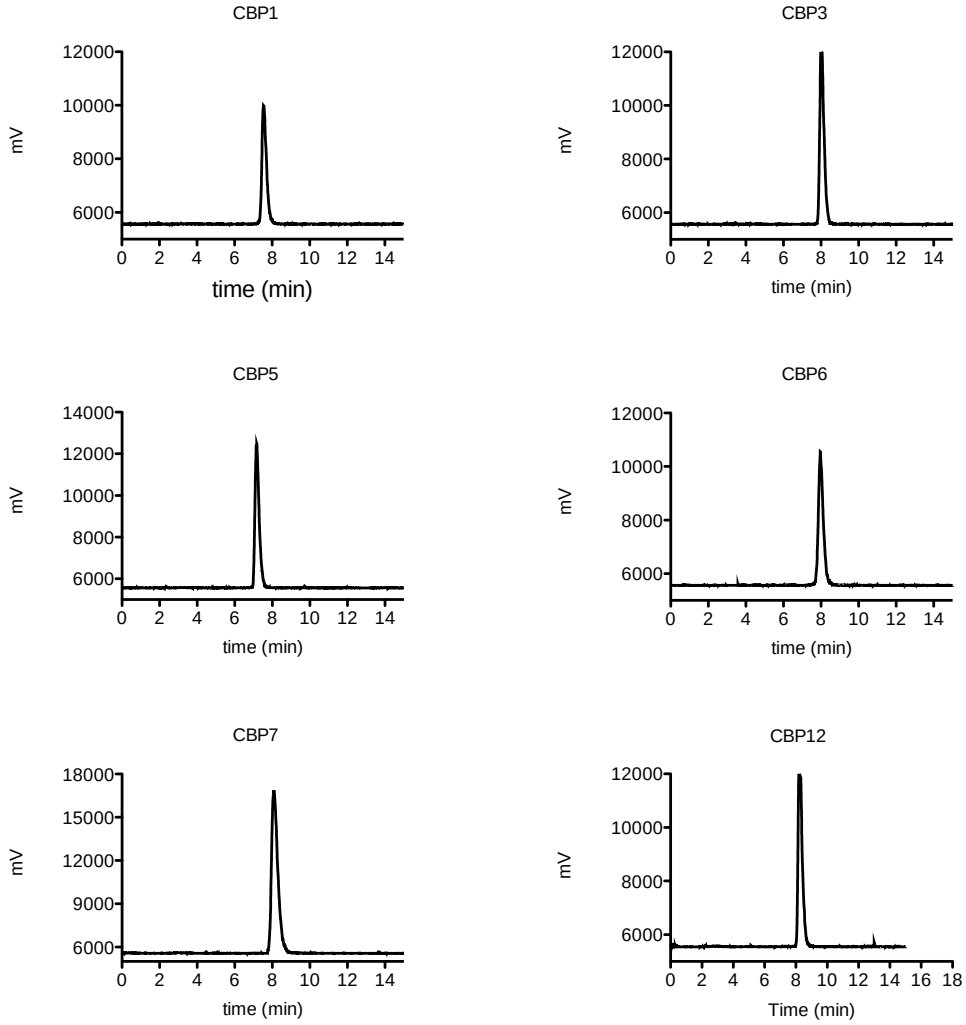
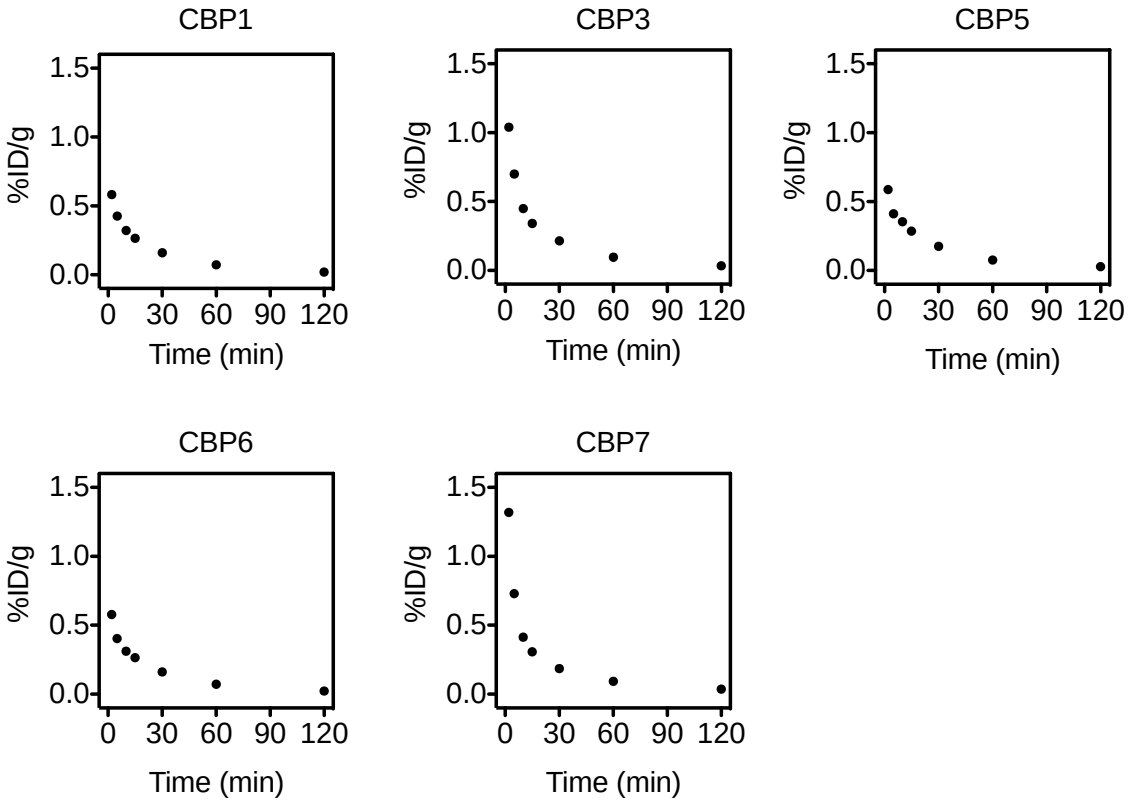


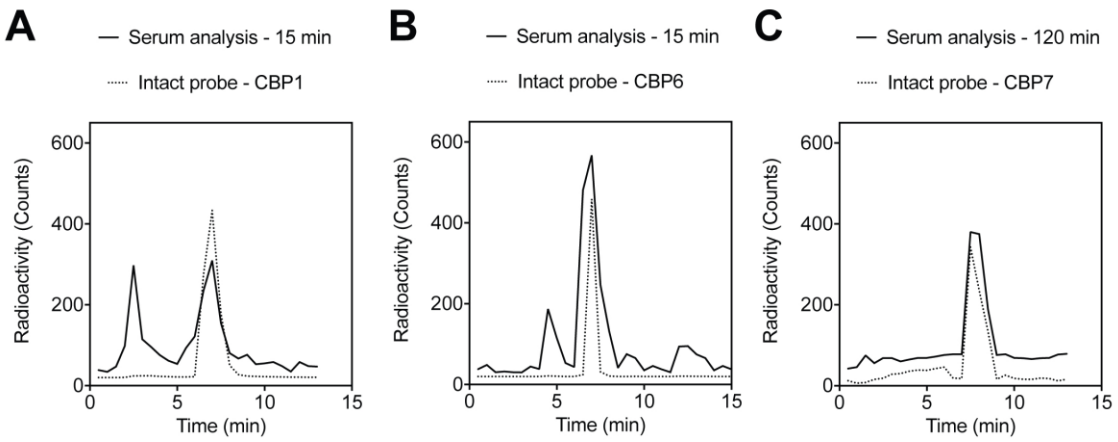
Supplemental Figure 1. HPLC spectrum (UV=280 nm) of the precursors of CBP1, CBP3, CBP5, CBP6, CBP7 and CBP11



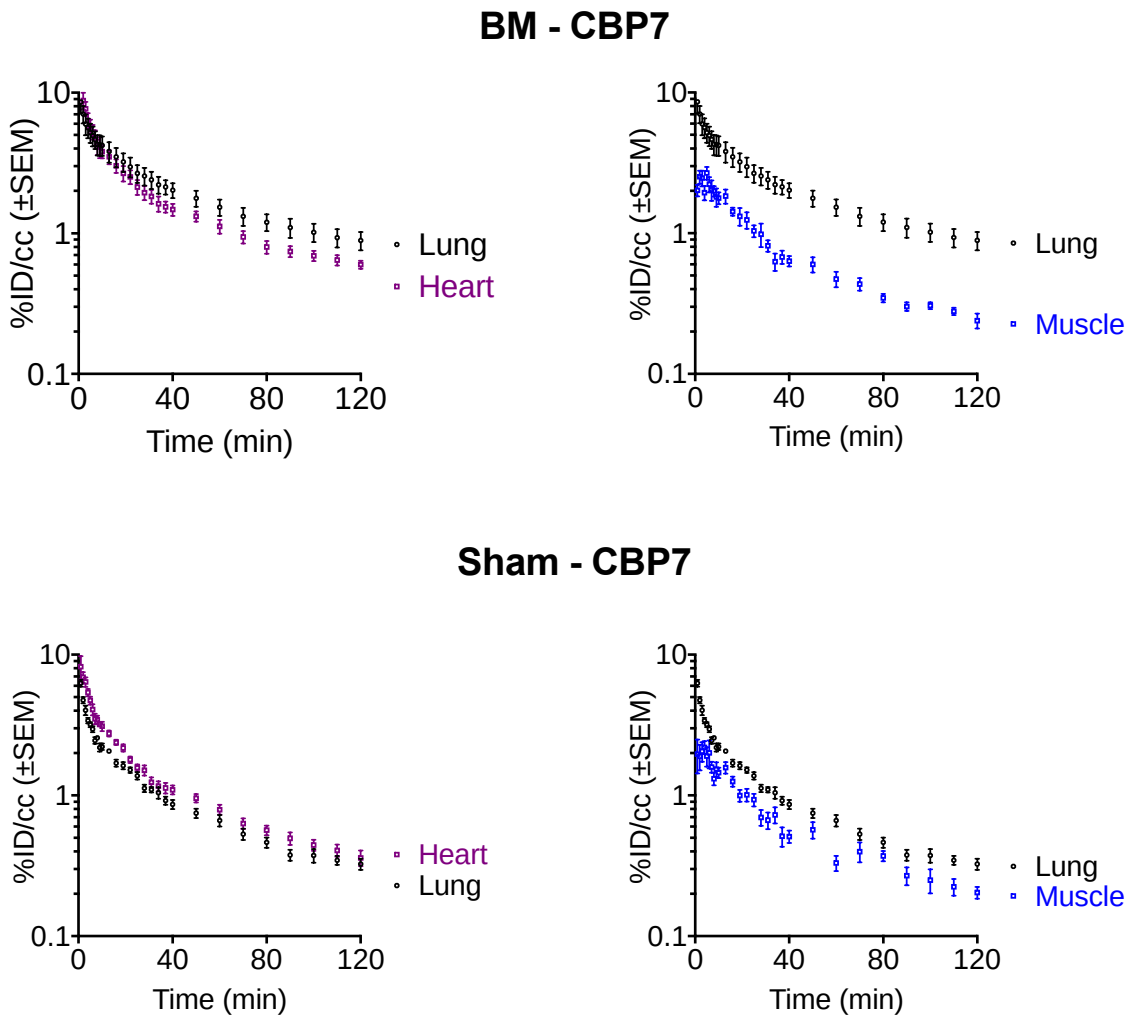
Supplemental Figure 2. Radio-HPLC spectra of CBP1, CBP3, CBP5, CBP6, CBP7 and CBP11 showing purity.



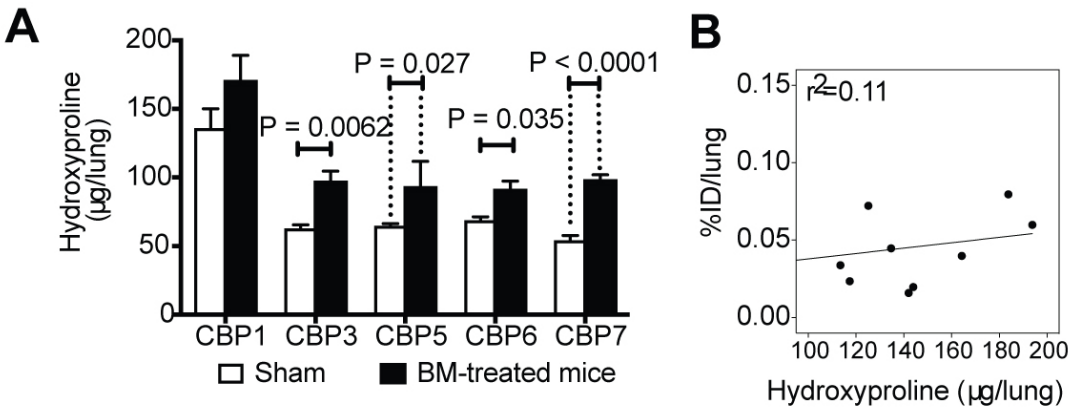
Supplemental Figure 3. Pharmacokinetic data showing blood clearance of the probes. Symbols indicate total copper-64 activity in the blood.



Supplemental Figure 4. A. Representative radio-HPLC traces of intact CBP1 immediately isolated from serum (dashed line) and of serum collected 15 min post CBP1 injection (solid line), **B.** of intact CBP6 immediately isolated from serum (dashed line) and of serum collected 15 min post CBP6 injection (solid line), **C.** of intact CBP7 immediately isolated from serum (dashed line) and of serum collected 120 min post CBP7 injection (solid line).



Supplemental Figure 5. Time-activity curves of lung and heart and lung and muscle from dynamic PET imaging in sham and BM-treated mice after CBP7 injection.



Supplemental Figure 6. A. Hydroxyproline analysis of *ex vivo* harvested lung tissue from sham and bleomycin (BM)-treated animals (2 weeks after instillation of bleomycin). **B.** Correlation between hydroxyproline content as a measure of total lung collagen and %ID/lung in sham and bleomycin-treated mice, 2 weeks after instillation of bleomycin or vehicle and 150 min after CBP1 injection.

Supplemental Table 1. LC-MS Species Identification of CBP1, CBP3, CBP5 and CBP6.

Specie	Chemical formula	Ion m/2 calc	Ion m/2 th
cPep(1)	C99H124N26O23S2	1056.1	1056.5
‘(tBu)3NODAGA-cPep(1)	C126H171N29O30S2	1319	1318
NODAGA-cPep(1)	C114H147N29O30S2	1234.9	1234.6
63/65Cu-NODAGA-cPep(1)	C114H145CuN29O30S2	1265.6	1265.5
cPep(3)	C98H122N26O23S2	1049.2	1049.2
(tBu)3NODAGA-cPep(3)	C125H169N29O30S2	1312	1311.3
NODAGA-cPep(3)	C113H145N29O30S2	1227.9	1227.1
63/65Cu-NODAGA-cPep(3)	C113H143CuN29O30S2	1258.6	1258.1
cPep(5)	C99H125N29O22S2	1069.7	1069.6
(tBu)3NODAGA-cPep(5)	C126H172N32O29S2	1332.5	1331.7
NODAGA-cPep(5)	C114H148N32O29S2	1248.4	1247.5
63/65Cu-NODAGA-cPep(5)	C114H146CuN32O29S2	1279.1	1279.1
cPep(6)	C101H128N26O22S2	1062.2	1061.6
(tBu)3NODAGA-cPep(6)	C128H175N29O29S2	1325	1325.3
NODAGA-cPep(6)	C116H151N29O29S2	1240.8	1239.7
63/65Cu-NODAGA-cPep(6)	C116H149CuN29O29S2	1271.5	1271.6

Supplemental Table 2. LC-MS Species Identification of CBP7 and CBP11.

Specie	Chemical formula	Ion			
		m/3 calc	m/3 th	m/4 calc	m/4 th
NODAGA-cPep(7)	C157H213N37O43S2	ND*	ND	843.8	843.4
63/65Cu-NODAGA-cPep(7)	C157H207Cu3N37O43S2	1186	1186.2	ND	ND
NODAGA-cPep(11)	C157H213N37O43S2	ND	ND	843.8	843.5
63/65Cu-NODAGA-cPep(11)	C157H207Cu3N37O43S2	1186	1186.3	ND	ND

*ND (non detectable)

Supplemental Table 3. K_d Values (μM) determined for collagen-binding probes through a rat tail collagen binding assay.

	Kd (μM)
CBP1	1.6 ± 1.1
CBP3	4.4 ± 1.0
CBP5	7.7 ± 5.2
CBP6	14.6 ± 5.8
CBP7	2.4 ± 1.5
CBP11	100

Supplemental Table 4. Elimination half-life of the probes determined from blood samples in healthy rats.

	Half-life of the probe in rat (min)
CBP1	20.4
CBP3	23.4
CBP5	18.5
CBP6	20.2
CBP7	20.0
CBP11	21.3

Supplemental Table 5. Tissue biodistribution of CBP1, 150 min post injection in sham and bleomycin-treated mice. Values are expressed in % ID/g ± SEM.

CBP1	Sham (n=3)	bleomycin-treated mice(n=3)
blood	0.09 ± 0.02	0.10 ± 0.02
lungs	0.38 ± 0.06	0.59 ± 0.20
heart	0.08 ± 0.01	0.08 ± 0.01
liver	0.71 ± 0.01	1.07 ± 0.28
muscle	0.12 ± 0.06	0.26 ± 0.16
spleen	0.14 ± 0.01	0.31 ± 0.18
sm. intestine	0.38 ± 0.08	2.02 ± 1.68
kidney	13.79 ± 1.11	13.51 ± 1.76
bone	0.14 ± 0.03	0.30 ± 0.17

Supplemental Table 6. Tissue biodistribution of CBP3, 150 min post injection in sham and bleomycin-treated mice. Values are expressed in % ID/g ± SEM.

CBP3	Sham (n=4)			bleomycin-treated mice (n=5)		
blood	0.17	±	0.02	0.49	±	0.31
lungs	0.36	±	0.01	0.70	±	0.08
heart	0.10	±	0.00	0.16	±	0.04
liver	2.01	±	0.07	2.57	±	0.24
muscle	0.05	±	0.00	0.14	±	0.04
spleen	0.21	±	0.02	0.97	±	0.24
sm. intestine	0.69	±	0.09	1.04	±	0.35
kidney	13.02	±	0.49	14.59	±	1.56
bone	0.13	±	0.01	0.29	±	0.13

Supplemental Table 7. Tissue biodistribution of CBP5, 150 min post injection in sham and bleomycin-treated mice. Values are expressed in % ID/g ± SEM.

CBP5	Sham (n=4)			bleomycin-treated mice (n=6)		
blood	0.11	±	0.02	0.12	±	0.03
lungs	0.30	±	0.06	0.45	±	0.13
heart	0.08	±	0.01	0.09	±	0.01
liver	2.63	±	0.15	3.84	±	0.77
muscle	0.47	±	0.41	0.03	±	0.01
spleen	0.81	±	0.42	1.59	±	0.55
sm. intestine	0.51	±	0.10	0.43	±	0.09
kidney	30.49	±	2.01	18.37	±	1.91
bone	0.70	±	0.34	0.49	±	0.24

Supplemental Table 8. Tissue biodistribution of CBP6, 150 min post injection in sham and bleomycin-treated mice. Values are expressed in % ID/g ± SEM.

CBP6	Sham (n=3)			bleomycin-treated mice (n=6)		
blood	0.19	±	0.02	0.28	±	0.10
lungs	0.47	±	0.09	0.54	±	0.07
heart	0.15	±	0.02	0.16	±	0.02
liver	2.64	±	0.16	2.50	±	0.22
muscle	0.96	±	0.70	0.14	±	0.07
spleen	1.86	±	0.70	0.78	±	0.08
sm. intestine	1.17	±	0.20	0.94	±	0.16
kidney	21.07	±	4.04	14.01	±	0.73
bone	0.89	±	0.63	0.37	±	0.05

Supplemental Table 9. Biodistribution in sham and bleomycin-treated mice at 150 min post injection) for CBP7. Uncertainty is represented as the as SEM.

CBP7	Sham (n=7)			bleomycin-treated mice (n=7)		
blood	0.31	±	0.04	0.63	±	0.06
lungs	0.42	±	0.07	1.37	±	0.36
heart	0.22	±	0.04	0.41	±	0.07
liver	2.32	±	0.54	2.82	±	0.74
muscle	0.09	±	0.02	0.18	±	0.03
spleen	1.06	±	0.25	1.94	±	0.61
sm. intestine	0.91	±	0.22	0.88	±	0.08
kidney	65.18	±	4.91	56.89	±	6.40
bone	0.25	±	0.05	0.50	±	0.04

Supplemental Table 10. Biodistribution in sham and bleomycin-treated mice at 150 min post injection for CBP11. Uncertainty is represented as the as SEM.

CBP11	Sham (n=4)			bleomycin-treated mice(n=4)		
blood	0.22	±	0.02	0.37	±	0.18
lungs	0.34	±	0.03	0.44	±	0.05
heart	0.14	±	0.01	0.17	±	0.04
liver	1.30	±	0.09	0.95	±	0.07
muscle	0.18	±	0.10	0.10	±	0.03
spleen	0.41	±	0.01	0.48	±	0.06
sm. intestine	0.58	±	0.06	0.93	±	0.18
kidney	57.68	±	4.20	51.73	±	4.20
bone	0.29	±	0.14	0.22	±	0.06