Table S1. Crystal data and structure refinement for $\{(C_5Me_5)Ru\}_3(\mu_3\text{-}CO)Co(CO)_2B_3H_3$.

Molecule	fe0902
Empirical formula	C33 H48 B3 Co1 O3 Ru3
Formula weight	887.28
Crystal system	monoclinic
Space group	$P2_1/n$
Unit cell dimensions	a = 11.1674(6) Å α = 90 deg. b = 17.744(2) Å β = 95.066(9) deg. c = 17.661(3) Å γ = 90 deg.
Volume	3485.9(7) $Å^3$
Z	4
Density (calculated)	1.691 Mg/m^3
F(000)	1776
Wavelength	0.71073 Å
Absorption coefficient	1.774 mm^{-1}
Crystal size	0.50 x 0.45 x 0.11 mm
Temperature	293(2) K
Diffractometer	Enraf-Nonius CAD4
Theta range for data collection	2.08 to 25.03 deg.
Index ranges	-13<=h<=13, 0<=k<=21, 0<=l<=21
Scan method	$\omega/2\theta$
Scan rate	1.37 - 8.24°/min (in ω)
Scan width	0.65 + 0.35°tanθ (in ω)
Total data collected	6326
Unique data	6125 [R(int) = 0.0107]
Unique observed data [$I>2\sigma(I)$]	5619
Decay correction	Linear decay (0.0)
Absorption correction	Semi-empirical from psi-scans
Max. and min. transmission	1.0000 and 0.7552
Refinement method	Full-matrix on F^2 (SHELXL-93)
Weighting scheme	sigma weight
Data / restraints / parameters	6125 / 4 / 445
Goodness-of-fit on F^2	1.105
Final R indices [$I>2\sigma(I)$]	R1 = 0.0320, wR2 = 0.0866
R indices (all data)	R1 = 0.0358, wR2 = 0.0897
Largest diff. peak and hole	0.522 and -0.569 e.$Å^{-3}$

Table S2. Atomic coordinates and equivalent isotropic displacement parameters Ueq for $\{(C_5Me_5)Ru\}_3(\mu_3\text{-}CO)Co(CO)_2B_3H_3$.

	x	y	z	Ueq($\AA^2$)
Ru(1)	0.59352(3)	0.90511(2)	0.23651(2)	0.0379(1)
Ru(2)	0.36445(2)	0.85675(2)	0.25040(2)	0.0338(1)
Ru(3)	0.55168(3)	0.80188(2)	0.34541(2)	0.0369(1)
Co	0.52883(5)	0.76849(3)	0.20063(3)	0.0476(2)
B(1)	0.4862(4)	0.9118(2)	0.3283(3)	0.0385(9)
B(2)	0.4119(4)	0.7489(3)	0.2826(3)	0.0418(9)
B(3)[a]	0.4582(4)	0.8660(3)	0.1553(3)	0.0466(10)
C(31)[a]	0.6790(4)	0.8020(3)	0.2676(3)	0.0487(10)
O(31)[a]	0.7809(6)	0.7778(7)	0.2667(8)	0.052(2)
B(3A)[a]	0.6790(4)	0.8020(3)	0.2676(3)	0.0487(10)
C(31A)[a]	0.4582(4)	0.8660(3)	0.1553(3)	0.0466(10)
O(31A)[a]	0.4314(7)	0.8798(4)	0.0875(3)	0.046(2)
C(32)[a]	0.5731(13)	0.7643(10)	0.1091(9)	0.087(4)
O(32)[a]	0.6039(13)	0.7575(8)	0.0496(5)	0.137(5)
C(33)[a]	0.5244(18)	0.6710(9)	0.2106(13)	0.124(7)
O(33)[a]	0.5259(17)	0.6071(6)	0.2143(13)	0.221(11)
C(32A)[a]	0.6432(17)	0.7503(8)	0.1423(10)	0.093(4)
O(32A)[a]	0.7160(14)	0.7346(9)	0.1060(9)	0.171(6)
C(33A)[a]	0.4440(14)	0.6914(7)	0.1632(6)	0.072(3)
O(33A)[a]	0.3970(13)	0.6409(6)	0.1362(6)	0.129(5)
C(1)	0.7341(6)	0.9917(4)	0.2727(4)	0.090(2)
C(2)	0.6304(5)	1.0298(3)	0.2466(3)	0.0675(14)
C(3)	0.6041(4)	1.0126(3)	0.1704(3)	0.0600(12)
C(4)	0.6902(5)	0.9637(3)	0.1472(3)	0.0689(14)
C(5)	0.7731(4)	0.9500(3)	0.2108(5)	0.090(2)
C(6)	0.8044(11)	0.9985(7)	0.3496(5)	0.237(9)
C(7)	0.5675(9)	1.0892(4)	0.2906(6)	0.139(4)
C(8)	0.5064(6)	1.0490(4)	0.1175(5)	0.110(3)
C(9)	0.7027(9)	0.9361(5)	0.0671(4)	0.143(4)
C(10)	0.8909(6)	0.9067(5)	0.2039(9)	0.215(7)
C(11)	0.2049(4)	0.9027(3)	0.3078(3)	0.0534(11)
C(12)	0.1771(3)	0.8282(3)	0.2819(3)	0.0521(10)
C(13)	0.1767(4)	0.8281(3)	0.2023(3)	0.0559(11)
C(14)	0.2025(4)	0.9007(3)	0.1782(3)	0.0580(12)
C(15)	0.2207(3)	0.9467(3)	0.2438(3)	0.0566(12)
C(16)	0.1958(5)	0.9326(4)	0.3862(3)	0.094(2)
C(17)	0.1330(5)	0.7662(4)	0.3300(4)	0.084(2)
C(18)	0.1421(6)	0.7623(4)	0.1519(4)	0.104(2)
C(19)	0.1914(6)	0.9282(5)	0.0980(4)	0.110(3)
C(20)	0.2364(6)	1.0310(3)	0.2435(5)	0.112(3)
C(21)	0.6988(5)	0.7782(5)	0.4384(3)	0.087(2)
C(22)	0.6132(6)	0.8263(3)	0.4675(3)	0.073(2)
C(23)	0.5074(5)	0.7884(3)	0.4664(3)	0.0648(14)
C(24)	0.5203(5)	0.7175(3)	0.4367(3)	0.0694(14)
C(25)	0.6377(7)	0.7105(4)	0.4179(3)	0.085(2)
C(26)	0.8309(6)	0.7920(8)	0.4386(5)	0.206(7)
C(27)	0.6395(11)	0.9012(4)	0.5052(4)	0.155(5)
C(28)	0.3984(7)	0.8162(6)	0.5029(4)	0.145(4)
C(29)	0.4317(10)	0.6529(5)	0.4371(5)	0.171(5)
C(30)	0.6938(13)	0.6404(5)	0.3877(5)	0.217(8)

[a]: atomic accupancy is 0.5

Table S3. Bond lengths (Å) for {(C_5Me_5)Ru}$_3$(μ_3-CO)Co(CO)$_2$$B_3H_3$.

Ru(1)-B(1)	2.103(4)	C(1)-C(2)	1.384(9)
Ru(1)-C(31A)	2.107(5)	C(1)-C(5)	1.420(10)
Ru(1)-B(3)	2.107(5)	C(1)-C(6)	1.513(9)
Ru(1)-B(3A)	2.114(5)	C(2)-C(3)	1.384(8)
Ru(1)-C(31)	2.114(5)	C(2)-C(7)	1.518(9)
Ru(1)-C(5)	2.241(5)	C(3)-C(4)	1.385(7)
Ru(1)-C(4)	2.245(4)	C(3)-C(8)	1.516(7)
Ru(1)-C(3)	2.245(4)	C(4)-C(5)	1.412(9)
Ru(1)-C(1)	2.249(5)	C(4)-C(9)	1.515(9)
Ru(1)-C(2)	2.254(5)	C(5)-C(10)	1.538(9)
Ru(1)-Co	2.5920(7)	C(6)-H(6A)	0.96
Ru(1)-Ru(3)	2.7260(5)	C(6)-H(6B)	0.96
Ru(2)-B(2)	2.052(5)	C(6)-H(6C)	0.96
Ru(2)-C(31A)	2.063(4)	C(7)-H(7A)	0.96
Ru(2)-B(3)	2.063(4)	C(7)-H(7B)	0.96
Ru(2)-B(1)	2.089(4)	C(7)-H(7C)	0.96
Ru(2)-C(13)	2.250(4)	C(8)-H(8A)	0.96
Ru(2)-C(14)	2.259(4)	C(8)-H(8B)	0.96
Ru(2)-C(15)	2.259(4)	C(8)-H(8C)	0.96
Ru(2)-C(12)	2.269(4)	C(9)-H(9A)	0.96
Ru(2)-C(11)	2.277(4)	C(9)-H(9B)	0.96
Ru(2)-Co	2.6229(6)	C(9)-H(9C)	0.96
Ru(2)-Ru(3)	2.7415(5)	C(10)-H(10A)	0.96
Ru(3)-B(2)	2.060(5)	C(10)-H(10B)	0.96
Ru(3)-B(3A)	2.063(5)	C(10)-H(10C)	0.96
Ru(3)-C(31)	2.063(5)	C(11)-C(15)	1.398(7)
Ru(3)-B(1)	2.095(4)	C(11)-C(12)	1.423(7)
Ru(3)-C(25)	2.231(5)	C(11)-C(16)	1.495(7)
Ru(3)-C(22)	2.246(5)	C(12)-C(13)	1.405(7)
Ru(3)-C(23)	2.248(5)	C(12)-C(17)	1.500(7)
Ru(3)-C(24)	2.250(5)	C(13)-C(14)	1.395(7)
Ru(3)-C(21)	2.257(5)	C(13)-C(18)	1.498(7)
Ru(3)-Co	2.6151(8)	C(14)-C(15)	1.417(7)
Co-C(32)	1.73(2)	C(14)-C(19)	1.493(7)
Co-C(33)	1.74(2)	C(15)-C(20)	1.507(7)
Co-C(32A)	1.741(14)	C(16)-H(16A)	0.96
Co-C(33A)	1.759(12)	C(16)-H(16B)	0.96
Co-C(31A)	2.036(5)	C(16)-H(16C)	0.96
Co-B(3)	2.036(5)	C(17)-H(17A)	0.96
Co-C(31)	2.053(5)	C(17)-H(17B)	0.96
Co-B(3A)	2.053(5)	C(17)-H(17C)	0.96
Co-B(2)	2.063(5)	C(18)-H(18A)	0.96
B(1)-H(1)	1.09(3)	C(18)-H(18B)	0.96
B(2)-H(2)	1.11(3)	C(18)-H(18C)	0.96
B(3)-H(3)	1.10(3)	C(19)-H(19A)	0.96
C(31)-O(31)	1.217(7)	C(19)-H(19B)	0.96
C(31)-H(3A)	1.11(3)	C(19)-H(19C)	0.96
O(31)-H(3A)	0.2(2)	C(20)-H(20A)	0.96
B(3A)-H(3A)	1.11(3)	C(20)-H(20B)	0.96
C(31A)-O(31A)	1.232(7)	C(20)-H(20C)	0.96
C(32)-O(32)	1.14(2)	C(21)-C(22)	1.412(9)
C(33)-O(33)	1.13(2)	C(21)-C(25)	1.413(10)
C(32A)-O(32A)	1.11(2)	C(21)-C(26)	1.495(8)
C(33A)-O(33A)	1.124(14)	C(22)-C(23)	1.357(8)

Table S3 cont.

C(22)-C(27)	1.504(9)	C(27)-H(27C)	0.96
C(23)-C(24)	1.376(8)	C(28)-H(28A)	0.96
C(23)-C(28)	1.510(8)	C(28)-H(28B)	0.96
C(24)-C(25)	1.386(9)	C(28)-H(28C)	0.96
C(24)-C(29)	1.515(9)	C(29)-H(29A)	0.96
C(25)-C(30)	1.510(8)	C(29)-H(29B)	0.96
C(26)-H(26A)	0.96	C(29)-H(29C)	0.96
C(26)-H(26B)	0.96	C(30)-H(30A)	0.96
C(26)-H(26C)	0.96	C(30)-H(30B)	0.96
C(27)-H(27A)	0.96	C(30)-H(30C)	0.96
C(27)-H(27B)	0.96		

Symmetry transformations used to generate equivalent atoms:

Table S4. Bond angles (deg) for $\{(C_5Me_5)Ru\}_3(\mu_3\text{-}CO)Co(CO)_2B_3H_3$.

B(1)-Ru(1)-C(31A)	96.9(2)
B(1)-Ru(1)-B(3)	96.9(2)
B(1)-Ru(1)-B(3A)	97.1(2)
C(31A)-Ru(1)-B(3A)	99.9(2)
B(1)-Ru(1)-C(31)	97.1(2)
B(3)-Ru(1)-C(31)	99.9(2)
B(1)-Ru(1)-C(5)	135.8(3)
C(31A)-Ru(1)-C(5)	125.4(3)
B(3)-Ru(1)-C(5)	125.4(3)
B(3A)-Ru(1)-C(5)	88.2(2)
C(31)-Ru(1)-C(5)	88.2(2)
B(1)-Ru(1)-C(4)	149.1(2)
C(31A)-Ru(1)-C(4)	92.0(2)
B(3)-Ru(1)-C(4)	92.0(2)
B(3A)-Ru(1)-C(4)	110.4(2)
C(31)-Ru(1)-C(4)	110.4(2)
C(5)-Ru(1)-C(4)	36.7(2)
B(1)-Ru(1)-C(3)	114.4(2)
C(31A)-Ru(1)-C(3)	89.6(2)
B(3)-Ru(1)-C(3)	89.6(2)
B(3A)-Ru(1)-C(3)	145.8(2)
C(31)-Ru(1)-C(3)	145.8(2)
C(5)-Ru(1)-C(3)	60.2(2)
C(4)-Ru(1)-C(3)	35.9(2)
B(1)-Ru(1)-C(1)	100.0(2)
C(31A)-Ru(1)-C(1)	149.2(2)
B(3)-Ru(1)-C(1)	149.2(2)
B(3A)-Ru(1)-C(1)	103.3(2)
C(31)-Ru(1)-C(1)	103.3(2)
C(5)-Ru(1)-C(1)	36.9(3)
C(4)-Ru(1)-C(1)	61.0(2)
C(3)-Ru(1)-C(1)	60.0(2)
B(1)-Ru(1)-C(2)	89.8(2)
C(31A)-Ru(1)-C(2)	119.5(2)
B(3)-Ru(1)-C(2)	119.5(2)
B(3A)-Ru(1)-C(2)	138.9(2)
C(31)-Ru(1)-C(2)	138.9(2)
C(5)-Ru(1)-C(2)	60.4(2)
C(4)-Ru(1)-C(2)	60.3(2)
C(3)-Ru(1)-C(2)	35.8(2)
C(1)-Ru(1)-C(2)	35.8(2)
B(1)-Ru(1)-Co	94.33(12)
C(31A)-Ru(1)-Co	50.05(13)
B(3)-Ru(1)-Co	50.05(13)
B(3A)-Ru(1)-Co	50.49(14)
C(31)-Ru(1)-Co	50.49(14)
C(5)-Ru(1)-Co	121.2(2)
C(4)-Ru(1)-Co	113.7(2)
C(3)-Ru(1)-Co	133.96(14)
C(1)-Ru(1)-Co	151.8(2)
C(2)-Ru(1)-Co	169.1(2)
B(1)-Ru(1)-Ru(3)	49.37(12)
C(31A)-Ru(1)-Ru(3)	95.83(12)
B(3)-Ru(1)-Ru(3)	95.83(12)
B(3A)-Ru(1)-Ru(3)	48.45(13)
C(31)-Ru(1)-Ru(3)	48.45(13)
C(5)-Ru(1)-Ru(3)	126.5(2)
C(4)-Ru(1)-Ru(3)	158.5(2)
C(3)-Ru(1)-Ru(3)	163.32(14)
C(1)-Ru(1)-Ru(3)	114.7(2)
C(2)-Ru(1)-Ru(3)	130.2(2)
Co-Ru(1)-Ru(3)	58.85(2)
B(2)-Ru(2)-C(31A)	99.4(2)
B(2)-Ru(2)-B(3)	99.4(2)
B(2)-Ru(2)-B(1)	96.7(2)
C(31A)-Ru(2)-B(1)	98.7(2)
B(3)-Ru(2)-B(1)	98.7(2)
B(2)-Ru(2)-C(13)	95.9(2)
C(31A)-Ru(2)-C(13)	103.5(2)
B(3)-Ru(2)-C(13)	103.5(2)
B(1)-Ru(2)-C(13)	152.2(2)
B(2)-Ru(2)-C(14)	130.8(2)
C(31A)-Ru(2)-C(14)	87.2(2)
B(3)-Ru(2)-C(14)	87.2(2)
B(1)-Ru(2)-C(14)	130.8(2)
C(13)-Ru(2)-C(14)	36.1(2)
B(2)-Ru(2)-C(15)	146.9(2)
C(31A)-Ru(2)-C(15)	108.1(2)
B(3)-Ru(2)-C(15)	108.1(2)
B(1)-Ru(2)-C(15)	97.0(2)
C(13)-Ru(2)-C(15)	60.4(2)
C(14)-Ru(2)-C(15)	36.6(2)
B(2)-Ru(2)-C(12)	86.8(2)
C(31A)-Ru(2)-C(12)	139.7(2)
B(3)-Ru(2)-C(12)	139.7(2)
B(1)-Ru(2)-C(12)	120.2(2)
C(13)-Ru(2)-C(12)	36.2(2)
C(14)-Ru(2)-C(12)	60.4(2)
C(15)-Ru(2)-C(12)	60.3(2)
B(2)-Ru(2)-C(11)	113.8(2)
C(31A)-Ru(2)-C(11)	143.8(2)
B(3)-Ru(2)-C(11)	143.8(2)
B(1)-Ru(2)-C(11)	91.7(2)
C(13)-Ru(2)-C(11)	60.6(2)
C(14)-Ru(2)-C(11)	60.6(2)
C(15)-Ru(2)-C(11)	35.9(2)
C(12)-Ru(2)-C(11)	36.5(2)
B(2)-Ru(2)-Co	50.59(13)
C(31A)-Ru(2)-Co	49.76(13)
B(3)-Ru(2)-Co	49.76(13)
B(1)-Ru(2)-Co	93.77(12)
C(13)-Ru(2)-Co	113.27(12)
C(14)-Ru(2)-Co	124.50(13)
C(15)-Ru(2)-Co	156.86(14)
C(12)-Ru(2)-Co	129.54(12)
C(11)-Ru(2)-Co	163.97(13)
B(2)-Ru(2)-Ru(1)	95.57(13)
C(31A)-Ru(2)-Ru(1)	49.81(13)

Table S4. cont.

B(3)-Ru(2)-Ru(1)	49.81(13)	C(31)-Ru(3)-Co	50.39(14)
B(1)-Ru(2)-Ru(1)	49.60(12)	B(1)-Ru(3)-Co	93.86(12)
C(13)-Ru(2)-Ru(1)	152.45(13)	C(25)-Ru(3)-Co	113.3(2)
C(14)-Ru(2)-Ru(1)	123.43(12)	C(22)-Ru(3)-Co	167.8(2)
C(15)-Ru(2)-Ru(1)	116.15(11)	C(23)-Ru(3)-Co	153.5(2)
C(12)-Ru(2)-Ru(1)	169.70(13)	C(24)-Ru(3)-Co	122.8(2)
C(11)-Ru(2)-Ru(1)	134.74(12)	C(21)-Ru(3)-Co	132.1(2)
Co-Ru(2)-Ru(1)	57.89(2)	B(2)-Ru(3)-Ru(1)	95.48(13)
B(2)-Ru(2)-Ru(3)	48.32(13)	B(3A)-Ru(3)-Ru(1)	50.08(13)
C(31A)-Ru(2)-Ru(3)	96.43(13)	C(31)-Ru(3)-Ru(1)	50.08(13)
B(3)-Ru(2)-Ru(3)	96.43(13)	B(1)-Ru(3)-Ru(1)	49.64(12)
B(1)-Ru(2)-Ru(3)	49.15(12)	C(25)-Ru(3)-Ru(1)	143.3(2)
C(13)-Ru(2)-Ru(3)	141.79(14)	C(22)-Ru(3)-Ru(1)	119.4(2)
C(14)-Ru(2)-Ru(3)	176.32(12)	C(23)-Ru(3)-Ru(1)	143.9(2)
C(15)-Ru(2)-Ru(3)	141.50(14)	C(24)-Ru(3)-Ru(1)	178.9(2)
C(12)-Ru(2)-Ru(3)	116.14(12)	C(21)-Ru(3)-Ru(1)	118.6(2)
C(11)-Ru(2)-Ru(3)	116.05(12)	Co-Ru(3)-Ru(1)	58.02(2)
Co-Ru(2)-Ru(3)	58.30(2)	B(2)-Ru(3)-Ru(2)	48.06(13)
Ru(1)-Ru(2)-Ru(3)	59.769(12)	B(3A)-Ru(3)-Ru(2)	97.20(13)
B(2)-Ru(3)-B(3A)	100.1(2)	C(31)-Ru(3)-Ru(2)	97.20(13)
B(2)-Ru(3)-C(31)	100.1(2)	B(1)-Ru(3)-Ru(2)	48.98(12)
B(2)-Ru(3)-B(1)	96.2(2)	C(25)-Ru(3)-Ru(2)	151.2(2)
B(3A)-Ru(3)-B(1)	99.0(2)	C(22)-Ru(3)-Ru(2)	132.1(2)
C(31)-Ru(3)-B(1)	99.0(2)	C(23)-Ru(3)-Ru(2)	113.56(12)
B(2)-Ru(3)-C(25)	104.2(3)	C(24)-Ru(3)-Ru(2)	121.1(2)
B(3A)-Ru(3)-C(25)	95.5(2)	C(21)-Ru(3)-Ru(2)	168.0(2)
C(31)-Ru(3)-C(25)	95.5(2)	Co-Ru(3)-Ru(2)	58.58(2)
B(1)-Ru(3)-C(25)	152.4(2)	Ru(1)-Ru(3)-Ru(2)	59.899(12)
B(2)-Ru(3)-C(22)	139.3(2)	C(32)-Co-C(33)	93.7(8)
B(3A)-Ru(3)-C(22)	117.9(2)	C(32A)-Co-C(33A)	91.9(7)
C(31)-Ru(3)-C(22)	117.9(2)	C(32A)-Co-C(31A)	101.8(6)
B(1)-Ru(3)-C(22)	91.8(2)	C(33A)-Co-C(31A)	109.6(5)
C(25)-Ru(3)-C(22)	60.6(2)	C(32)-Co-B(3)	78.6(6)
B(2)-Ru(3)-C(23)	104.1(2)	C(33)-Co-B(3)	150.6(8)
B(3A)-Ru(3)-C(23)	148.8(2)	C(32)-Co-C(31)	105.3(5)
C(31)-Ru(3)-C(23)	148.8(2)	C(33)-Co-C(31)	105.0(8)
B(1)-Ru(3)-C(23)	97.6(2)	B(3)-Co-C(31)	104.4(2)
C(25)-Ru(3)-C(23)	59.8(2)	C(32A)-Co-B(3A)	77.9(7)
C(22)-Ru(3)-C(23)	35.2(2)	C(33A)-Co-B(3A)	145.8(5)
B(2)-Ru(3)-C(24)	85.6(2)	C(31A)-Co-B(3A)	104.4(2)
B(3A)-Ru(3)-C(24)	129.6(2)	C(32)-Co-B(2)	153.8(5)
C(31)-Ru(3)-C(24)	129.6(2)	C(33)-Co-B(2)	74.7(5)
B(1)-Ru(3)-C(24)	130.4(2)	C(32A)-Co-B(2)	158.0(6)
C(25)-Ru(3)-C(24)	36.0(2)	C(33A)-Co-B(2)	77.3(4)
C(22)-Ru(3)-C(24)	59.6(2)	C(31A)-Co-B(2)	99.9(2)
C(23)-Ru(3)-C(24)	35.6(2)	B(3)-Co-B(2)	99.9(2)
B(2)-Ru(3)-C(21)	140.8(2)	C(31)-Co-B(2)	100.4(2)
B(3A)-Ru(3)-C(21)	89.1(2)	B(3A)-Co-B(2)	100.4(2)
C(31)-Ru(3)-C(21)	89.1(2)	C(32)-Co-Ru(1)	99.9(5)
B(1)-Ru(3)-C(21)	120.0(3)	C(33)-Co-Ru(1)	156.2(8)
C(25)-Ru(3)-C(21)	36.7(3)	C(32A)-Co-Ru(1)	96.6(5)
C(22)-Ru(3)-C(21)	36.5(2)	C(33A)-Co-Ru(1)	161.5(5)
C(23)-Ru(3)-C(21)	59.7(2)	C(31A)-Co-Ru(1)	52.50(13)
C(24)-Ru(3)-C(21)	60.3(2)	B(3)-Co-Ru(1)	52.50(13)
B(2)-Ru(3)-Co	50.69(13)	C(31)-Co-Ru(1)	52.60(13)
B(3A)-Ru(3)-Co	50.39(14)	B(3A)-Co-Ru(1)	52.60(13)

Table S4. cont.

B(2)-Co-Ru(1)	99.54(13)	O(31A)-C(31A)-Ru(2)	135.2(4)
C(32)-Co-Ru(3)	155.6(5)	Co-C(31A)-Ru(2)	79.6(2)
C(33)-Co-Ru(3)	97.3(7)	O(31A)-C(31A)-Ru(1)	133.9(5)
C(32A)-Co-Ru(3)	127.4(7)	Co-C(31A)-Ru(1)	77.4(2)
C(33A)-Co-Ru(3)	123.1(4)	Ru(2)-C(31A)-Ru(1)	81.8(2)
C(31A)-Co-Ru(3)	101.12(13)	Co-C(31A)-H(3)	107(7)
B(3)-Co-Ru(3)	101.12(13)	Ru(2)-C(31A)-H(3)	147(8)
C(31)-Co-Ru(3)	50.71(13)	Ru(1)-C(31A)-H(3)	131(8)
B(3A)-Co-Ru(3)	50.71(13)	O(32)-C(32)-Co	176(2)
B(2)-Co-Ru(3)	50.59(13)	O(33)-C(33)-Co	176.4(14)
Ru(1)-Co-Ru(3)	63.14(2)	O(32A)-C(32A)-Co	176(2)
C(32)-Co-Ru(2)	127.1(6)	O(33A)-C(33A)-Co	174.7(13)
C(33)-Co-Ru(2)	122.2(5)	C(2)-C(1)-C(5)	107.6(5)
C(32A)-Co-Ru(2)	151.8(5)	C(2)-C(1)-C(6)	127.8(10)
C(33A)-Co-Ru(2)	102.7(5)	C(5)-C(1)-C(6)	124.2(9)
C(31A)-Co-Ru(2)	50.66(12)	C(2)-C(1)-Ru(1)	72.3(3)
B(3)-Co-Ru(2)	50.66(12)	C(5)-C(1)-Ru(1)	71.3(3)
C(31)-Co-Ru(2)	101.21(13)	C(6)-C(1)-Ru(1)	127.1(4)
B(3A)-Co-Ru(2)	101.21(13)	C(3)-C(2)-C(1)	108.4(5)
B(2)-Co-Ru(2)	50.21(13)	C(3)-C(2)-C(7)	125.6(7)
Ru(1)-Co-Ru(2)	63.12(2)	C(1)-C(2)-C(7)	125.4(7)
Ru(3)-Co-Ru(2)	63.12(2)	C(3)-C(2)-Ru(1)	71.7(3)
Ru(2)-B(1)-Ru(3)	81.9(2)	C(1)-C(2)-Ru(1)	71.9(3)
Ru(2)-B(1)-Ru(1)	81.2(2)	C(7)-C(2)-Ru(1)	129.2(4)
Ru(3)-B(1)-Ru(1)	81.0(2)	C(2)-C(3)-C(4)	109.5(5)
Ru(2)-B(1)-H(1)	132(2)	C(2)-C(3)-C(8)	125.7(6)
Ru(3)-B(1)-H(1)	130(2)	C(4)-C(3)-C(8)	124.4(6)
Ru(1)-B(1)-H(1)	131(2)	C(2)-C(3)-Ru(1)	72.4(3)
Ru(2)-B(2)-Ru(3)	83.6(2)	C(4)-C(3)-Ru(1)	72.0(3)
Ru(2)-B(2)-Co	79.2(2)	C(8)-C(3)-Ru(1)	127.8(3)
Ru(3)-B(2)-Co	78.7(2)	C(3)-C(4)-C(5)	107.2(5)
Ru(2)-B(2)-H(2)	134(2)	C(3)-C(4)-C(9)	127.1(7)
Ru(3)-B(2)-H(2)	133(2)	C(5)-C(4)-C(9)	125.4(7)
Co-B(2)-H(2)	127(2)	C(3)-C(4)-Ru(1)	72.1(3)
Co-B(3)-Ru(2)	79.6(2)	C(5)-C(4)-Ru(1)	71.5(3)
Co-B(3)-Ru(1)	77.4(2)	C(9)-C(4)-Ru(1)	126.6(4)
Ru(2)-B(3)-Ru(1)	81.8(2)	C(4)-C(5)-C(1)	107.4(5)
Co-B(3)-H(3)	107(7)	C(4)-C(5)-C(10)	121.9(9)
Ru(2)-B(3)-H(3)	147(8)	C(1)-C(5)-C(10)	130.1(9)
Ru(1)-B(3)-H(3)	131(8)	C(4)-C(5)-Ru(1)	71.8(3)
O(31)-C(31)-Co	127.4(7)	C(1)-C(5)-Ru(1)	71.8(3)
O(31)-C(31)-Ru(3)	135.1(7)	C(10)-C(5)-Ru(1)	128.7(4)
Co-C(31)-Ru(3)	78.9(2)	C(1)-C(6)-H(6A)	109.5(4)
O(31)-C(31)-Ru(1)	134.6(7)	C(1)-C(6)-H(6B)	109.5(7)
Co-C(31)-Ru(1)	76.9(2)	H(6A)-C(6)-H(6B)	109.5
Ru(3)-C(31)-Ru(1)	81.5(2)	C(1)-C(6)-H(6C)	109.5(6)
Co-C(31)-H(3A)	117(10)	H(6A)-C(6)-H(6C)	109.5
Ru(3)-C(31)-H(3A)	138(10)	H(6B)-C(6)-H(6C)	109.5
Ru(1)-C(31)-H(3A)	138(10)	C(2)-C(7)-H(7A)	109.5(5)
Co-B(3A)-Ru(3)	78.9(2)	C(2)-C(7)-H(7B)	109.5(3)
Co-B(3A)-Ru(1)	76.9(2)	H(7A)-C(7)-H(7B)	109.5
Ru(3)-B(3A)-Ru(1)	81.5(2)	C(2)-C(7)-H(7C)	109.5(4)
Co-B(3A)-H(3A)	117(10)	H(7A)-C(7)-H(7C)	109.5
Ru(3)-B(3A)-H(3A)	138(10)	H(7B)-C(7)-H(7C)	109.5
Ru(1)-B(3A)-H(3A)	138(10)	C(3)-C(8)-H(8A)	109.5(3)
O(31A)-C(31A)-Co	127.1(4)	C(3)-C(8)-H(8B)	109.5(3)

Table S4. cont.

H(8A)-C(8)-H(8B)	109.5	H(17A)-C(17)-H(17C)	109.5
C(3)-C(8)-H(8C)	109.5(4)	H(17B)-C(17)-H(17C)	109.5
H(8A)-C(8)-H(8C)	109.5	C(13)-C(18)-H(18A)	109.5(4)
H(8B)-C(8)-H(8C)	109.5	C(13)-C(18)-H(18B)	109.5(3)
C(4)-C(9)-H(9A)	109.5(5)	H(18A)-C(18)-H(18B)	109.5
C(4)-C(9)-H(9B)	109.5(3)	C(13)-C(18)-H(18C)	109.5(3)
H(9A)-C(9)-H(9B)	109.5	H(18A)-C(18)-H(18C)	109.5
C(4)-C(9)-H(9C)	109.5(4)	H(18B)-C(18)-H(18C)	109.5
H(9A)-C(9)-H(9C)	109.5	C(14)-C(19)-H(19A)	109.5(4)
H(9B)-C(9)-H(9C)	109.5	C(14)-C(19)-H(19B)	109.5(3)
C(5)-C(10)-H(10A)	109.5(6)	H(19A)-C(19)-H(19B)	109.5
C(5)-C(10)-H(10B)	109.5(4)	C(14)-C(19)-H(19C)	109.5(4)
H(10A)-C(10)-H(10B)	109.5	H(19A)-C(19)-H(19C)	109.5
C(5)-C(10)-H(10C)	109.5(6)	H(19B)-C(19)-H(19C)	109.5
H(10A)-C(10)-H(10C)	109.5	C(15)-C(20)-H(20A)	109.5(3)
H(10B)-C(10)-H(10C)	109.5	C(15)-C(20)-H(20B)	109.5(3)
C(15)-C(11)-C(12)	107.3(4)	H(20A)-C(20)-H(20B)	109.5
C(15)-C(11)-C(16)	125.0(5)	C(15)-C(20)-H(20C)	109.5(4)
C(12)-C(11)-C(16)	126.7(5)	H(20A)-C(20)-H(20C)	109.5
C(15)-C(11)-Ru(2)	71.4(2)	H(20B)-C(20)-H(20C)	109.5
C(12)-C(11)-Ru(2)	71.4(2)	C(22)-C(21)-C(25)	106.3(5)
C(16)-C(11)-Ru(2)	131.2(3)	C(22)-C(21)-C(26)	126.9(9)
C(13)-C(12)-C(11)	107.7(4)	C(25)-C(21)-C(26)	126.4(9)
C(13)-C(12)-C(17)	126.4(5)	C(22)-C(21)-Ru(3)	71.3(3)
C(11)-C(12)-C(17)	124.9(5)	C(25)-C(21)-Ru(3)	70.6(3)
C(13)-C(12)-Ru(2)	71.2(2)	C(26)-C(21)-Ru(3)	128.8(4)
C(11)-C(12)-Ru(2)	72.1(2)	C(23)-C(22)-C(21)	108.2(5)
C(17)-C(12)-Ru(2)	131.2(3)	C(23)-C(22)-C(27)	125.4(7)
C(14)-C(13)-C(12)	108.7(4)	C(21)-C(22)-C(27)	125.7(8)
C(14)-C(13)-C(18)	126.0(5)	C(23)-C(22)-Ru(3)	72.5(3)
C(12)-C(13)-C(18)	125.0(5)	C(21)-C(22)-Ru(3)	72.1(3)
C(14)-C(13)-Ru(2)	72.3(2)	C(27)-C(22)-Ru(3)	128.8(4)
C(12)-C(13)-Ru(2)	72.6(2)	C(22)-C(23)-C(24)	109.7(5)
C(18)-C(13)-Ru(2)	125.7(4)	C(22)-C(23)-C(28)	124.5(7)
C(13)-C(14)-C(15)	107.5(4)	C(24)-C(23)-C(28)	125.2(7)
C(13)-C(14)-C(19)	126.1(6)	C(22)-C(23)-Ru(3)	72.4(3)
C(15)-C(14)-C(19)	125.6(6)	C(24)-C(23)-Ru(3)	72.3(3)
C(13)-C(14)-Ru(2)	71.6(2)	C(28)-C(23)-Ru(3)	128.7(4)
C(15)-C(14)-Ru(2)	71.8(2)	C(23)-C(24)-C(25)	107.9(5)
C(19)-C(14)-Ru(2)	130.1(4)	C(23)-C(24)-C(29)	126.9(7)
C(11)-C(15)-C(14)	108.7(4)	C(25)-C(24)-C(29)	124.4(7)
C(11)-C(15)-C(20)	125.5(6)	C(23)-C(24)-Ru(3)	72.1(3)
C(14)-C(15)-C(20)	125.3(6)	C(25)-C(24)-Ru(3)	71.2(3)
C(11)-C(15)-Ru(2)	72.8(2)	C(29)-C(24)-Ru(3)	130.5(4)
C(14)-C(15)-Ru(2)	71.7(2)	C(24)-C(25)-C(21)	107.9(5)
C(20)-C(15)-Ru(2)	128.3(3)	C(24)-C(25)-C(30)	126.1(9)
C(11)-C(16)-H(16A)	109.5(4)	C(21)-C(25)-C(30)	125.8(9)
C(11)-C(16)-H(16B)	109.5(3)	C(24)-C(25)-Ru(3)	72.7(3)
H(16A)-C(16)-H(16B)	109.5	C(21)-C(25)-Ru(3)	72.6(3)
C(11)-C(16)-H(16C)	109.5(3)	C(30)-C(25)-Ru(3)	124.5(4)
H(16A)-C(16)-H(16C)	109.5	C(21)-C(26)-H(26A)	109.5(6)
H(16B)-C(16)-H(16C)	109.5	C(21)-C(26)-H(26B)	109.5(4)
C(12)-C(17)-H(17A)	109.5(3)	H(26A)-C(26)-H(26B)	109.5
C(12)-C(17)-H(17B)	109.5(3)	C(21)-C(26)-H(26C)	109.5(6)
H(17A)-C(17)-H(17B)	109.5	H(26A)-C(26)-H(26C)	109.5
C(12)-C(17)-H(17C)	109.5(3)	H(26B)-C(26)-H(26C)	109.5

Table S4. cont.

C(22)-C(27)-H(27A)	109.5(6)	C(24)-C(29)-H(29A)	109.5(4)
C(22)-C(27)-H(27B)	109.5(4)	C(24)-C(29)-H(29B)	109.5(5)
H(27A)-C(27)-H(27B)	109.5	H(29A)-C(29)-H(29B)	109.5
C(22)-C(27)-H(27C)	109.5(4)	C(24)-C(29)-H(29C)	109.5(5)
H(27A)-C(27)-H(27C)	109.5	H(29A)-C(29)-H(29C)	109.5
H(27B)-C(27)-H(27C)	109.5	H(29B)-C(29)-H(29C)	109.5
C(23)-C(28)-H(28A)	109.5(3)	C(25)-C(30)-H(30A)	109.5(4)
C(23)-C(28)-H(28B)	109.5(5)	C(25)-C(30)-H(30B)	109.5(5)
H(28A)-C(28)-H(28B)	109.5	H(30A)-C(30)-H(30B)	109.5
C(23)-C(28)-H(28C)	109.5(5)	C(25)-C(30)-H(30C)	109.5(7)
H(28A)-C(28)-H(28C)	109.5	H(30A)-C(30)-H(30C)	109.5
H(28B)-C(28)-H(28C)	109.5	H(30B)-C(30)-H(30C)	109.5

Symmetry transformations used to generate equivalent atoms:

Table S5. Anisotropic displacement parameters (Å^2) for {(C_5Me_5)Ru}$_3$(μ_3-CO)Co(CO)$_2B_3H_3$.

	U11	U22	U33	U23	U13	U12
Ru(1)	0.0308(2)	0.0390(2)	0.0440(2)	0.0032(1)	0.0050(1)	-0.0016(1)
Ru(2)	0.0288(2)	0.0331(2)	0.0395(2)	-0.0022(1)	0.0033(1)	-0.0008(1)
Ru(3)	0.0362(2)	0.0355(2)	0.0392(2)	0.0021(1)	0.0042(1)	0.0060(1)
Co	0.0507(3)	0.0423(3)	0.0517(3)	-0.0097(2)	0.0140(3)	0.0030(2)
B(1)	0.034(2)	0.037(2)	0.044(2)	-0.003(2)	0.001(2)	0.002(2)
B(2)	0.043(2)	0.037(2)	0.046(2)	-0.004(2)	0.005(2)	0.000(2)
B(3)	0.040(2)	0.046(2)	0.055(3)	-0.001(2)	0.009(2)	-0.002(2)
C(31)	0.044(2)	0.053(3)	0.050(2)	0.007(2)	0.006(2)	0.010(2)
O(31)	0.032(3)	0.062(4)	0.065(5)	0.005(3)	0.015(3)	0.016(3)
B(3A)	0.044(2)	0.053(3)	0.050(2)	0.007(2)	0.006(2)	0.010(2)
C(31A)	0.040(2)	0.046(2)	0.055(3)	-0.001(2)	0.009(2)	-0.002(2)
O(31A)	0.049(4)	0.061(5)	0.028(3)	0.006(2)	0.002(2)	0.000(3)
C(32)	0.072(8)	0.105(11)	0.086(10)	-0.039(8)	0.014(7)	0.004(8)
O(32)	0.157(11)	0.198(13)	0.061(5)	-0.053(7)	0.044(7)	0.013(9)
C(33)	0.145(16)	0.075(11)	0.169(18)	-0.042(11)	0.099(15)	-0.008(10)
O(33)	0.257(19)	0.041(6)	0.400(27)	-0.051(9)	0.221(20)	-0.019(8)
C(32A)	0.113(12)	0.074(8)	0.101(11)	-0.021(8)	0.054(10)	0.010(9)
O(32A)	0.177(13)	0.197(14)	0.155(12)	-0.039(10)	0.104(12)	0.058(11)
C(33A)	0.109(10)	0.055(7)	0.053(6)	-0.012(5)	0.019(6)	-0.007(6)
O(33A)	0.217(13)	0.073(6)	0.098(7)	-0.040(6)	0.023(8)	-0.061(8)
C(1)	0.081(4)	0.103(5)	0.081(4)	0.030(4)	-0.025(3)	-0.060(4)
C(2)	0.071(3)	0.045(3)	0.088(4)	-0.006(2)	0.019(3)	-0.023(2)
C(3)	0.047(2)	0.049(3)	0.083(3)	0.019(2)	0.006(2)	-0.013(2)
C(4)	0.070(3)	0.065(3)	0.076(3)	0.008(3)	0.034(3)	-0.016(3)
C(5)	0.031(2)	0.074(4)	0.167(7)	0.052(4)	0.017(3)	-0.005(2)
C(6)	0.264(14)	0.286(15)	0.137(8)	0.098(9)	-0.121(9)	-0.216(13)
C(7)	0.198(9)	0.057(4)	0.174(8)	-0.045(5)	0.088(7)	-0.043(5)
C(8)	0.078(4)	0.085(4)	0.159(7)	0.064(5)	-0.022(4)	-0.017(3)
C(9)	0.200(10)	0.139(7)	0.103(6)	-0.019(5)	0.094(6)	-0.071(7)
C(10)	0.046(4)	0.153(8)	0.456(21)	0.153(11)	0.083(7)	0.032(4)
C(11)	0.029(2)	0.072(3)	0.058(3)	-0.017(2)	0.002(2)	0.009(2)
C(12)	0.025(2)	0.063(3)	0.069(3)	0.006(2)	0.008(2)	0.000(2)
C(13)	0.032(2)	0.072(3)	0.062(3)	-0.012(2)	-0.004(2)	-0.002(2)
C(14)	0.034(2)	0.083(3)	0.056(3)	0.014(2)	-0.002(2)	0.007(2)
C(15)	0.027(2)	0.049(2)	0.093(4)	0.007(2)	0.005(2)	0.010(2)
C(16)	0.061(3)	0.146(6)	0.077(4)	-0.045(4)	0.010(3)	0.023(4)
C(17)	0.056(3)	0.094(4)	0.106(5)	0.032(4)	0.023(3)	-0.011(3)
C(18)	0.071(4)	0.116(5)	0.119(5)	-0.054(5)	-0.019(4)	-0.014(4)
C(19)	0.064(4)	0.188(8)	0.077(4)	0.060(5)	0.002(3)	0.018(4)
C(20)	0.071(4)	0.052(3)	0.214(9)	0.011(4)	0.025(5)	0.024(3)
C(21)	0.044(3)	0.144(6)	0.070(4)	0.052(4)	-0.007(2)	0.003(3)
C(22)	0.106(5)	0.066(3)	0.043(3)	0.005(2)	-0.021(3)	-0.001(3)
C(23)	0.061(3)	0.092(4)	0.041(2)	0.011(2)	0.002(2)	0.026(3)
C(24)	0.083(4)	0.069(3)	0.056(3)	0.021(3)	0.005(3)	-0.006(3)
C(25)	0.132(6)	0.074(4)	0.052(3)	0.022(3)	0.023(3)	0.061(4)
C(26)	0.047(4)	0.444(21)	0.123(7)	0.134(10)	-0.019(4)	-0.016(7)
C(27)	0.274(13)	0.097(6)	0.078(5)	-0.013(4)	-0.074(6)	-0.028(7)
C(28)	0.127(6)	0.251(12)	0.063(4)	0.028(5)	0.036(4)	0.108(7)
C(29)	0.247(12)	0.153(8)	0.103(6)	0.068(6)	-0.036(7)	-0.123(9)
C(30)	0.412(19)	0.152(8)	0.093(6)	0.037(6)	0.056(8)	0.208(12)

The anisotropic displacement factor exponent takes the form:
$-2 \pi^2 [h^2 a^{*2} U11 + ... + 2 h k a^* b^* U12]$

Table S6. Hydrogen coordinates and isotropic displacement parameters (Å^2) for $\{(C_5Me_5)Ru\}_3(\mu_3\text{-}CO)Co(CO)_2B_3H_3$.

	x	y	z	Uiso(Å^2)
H(1)	0.4752(36)	0.9568(19)	0.3693(20)	0.046
H(2)	0.3601(35)	0.6965(18)	0.2913(24)	0.050
H(3)[a]	0.4555(129)	0.8610(78)	0.0930(19)	0.056
H(3A)[a]	0.7645(102)	0.7729(112)	0.2593(129)	0.058
H(6A)	0.8548(11)	1.0424(7)	0.3503(5)	0.356
H(6B)	0.8535(11)	0.9545(7)	0.3590(5)	0.356
H(6C)	0.7497(11)	1.0029(7)	0.3883(5)	0.356
H(7A)	0.6213(9)	1.1069(4)	0.3322(6)	0.208
H(7B)	0.4974(9)	1.0677(4)	0.3098(6)	0.208
H(7C)	0.5442(9)	1.1306(4)	0.2576(6)	0.208
H(8A)	0.4635(6)	1.0107(4)	0.0878(5)	0.164
H(8B)	0.5421(6)	1.0836(4)	0.0844(5)	0.164
H(8C)	0.4517(6)	1.0756(4)	0.1470(5)	0.164
H(9A)	0.7422(9)	0.8880(5)	0.0690(4)	0.214
H(9B)	0.7494(9)	0.9716(5)	0.0411(4)	0.214
H(9C)	0.6244(9)	0.9312(5)	0.0404(4)	0.214
H(10A)	0.9260(6)	0.8934(5)	0.2537(9)	0.322
H(10B)	0.9459(6)	0.9379(5)	0.1792(9)	0.322
H(10C)	0.8745(6)	0.8617(5)	0.1746(9)	0.322
H(16A)	0.1849(5)	0.8915(4)	0.4203(3)	0.142
H(16B)	0.1285(5)	0.9663(4)	0.3859(3)	0.142
H(16C)	0.2683(5)	0.9593(4)	0.4028(3)	0.142
H(17A)	0.0484(5)	0.7725(4)	0.3342(4)	0.127
H(17B)	0.1753(5)	0.7681(4)	0.3797(4)	0.127
H(17C)	0.1470(5)	0.7184(4)	0.3069(4)	0.127
H(18A)	0.1374(6)	0.7177(4)	0.1823(4)	0.155
H(18B)	0.2014(6)	0.7552(4)	0.1164(4)	0.155
H(18C)	0.0653(6)	0.7717(4)	0.1247(4)	0.155
H(19A)	0.2397(6)	0.9725(5)	0.0942(4)	0.165
H(19B)	0.1088(6)	0.9400(5)	0.0828(4)	0.165
H(19C)	0.2184(6)	0.8896(5)	0.0653(4)	0.165
H(20A)	0.1633(6)	1.0543(3)	0.2223(5)	0.167
H(20B)	0.3008(6)	1.0440(3)	0.2133(5)	0.167
H(20C)	0.2550(6)	1.0485(3)	0.2946(5)	0.167
H(26A)	0.8632(6)	0.7605(8)	0.4011(5)	0.309
H(26B)	0.8697(6)	0.7803(8)	0.4879(5)	0.309
H(26C)	0.8447(6)	0.8439(8)	0.4269(5)	0.309
H(27A)	0.7186(11)	0.9174(4)	0.4955(4)	0.232
H(27B)	0.6350(11)	0.8963(4)	0.5590(4)	0.232
H(27C)	0.5815(11)	0.9376(4)	0.4852(4)	0.232
H(28A)	0.4075(7)	0.8050(6)	0.5563(4)	0.218
H(28B)	0.3278(7)	0.7914(6)	0.4799(4)	0.218
H(28C)	0.3905(7)	0.8696(6)	0.4958(4)	0.218
H(29A)	0.4346(10)	0.6316(5)	0.4871(5)	0.256
H(29B)	0.4524(10)	0.6150(5)	0.4017(5)	0.256
H(29C)	0.3521(10)	0.6712(5)	0.4226(5)	0.256
H(30A)	0.7432(13)	0.6164(5)	0.4280(5)	0.325
H(30B)	0.7422(13)	0.6539(5)	0.3475(5)	0.325
H(30C)	0.6315(13)	0.6063(5)	0.3685(5)	0.325

[a]: accupancy is 0.5