Electronic Supporting Information

## Magnetic and Neutron Diffraction Studies on Coordination Polymer, Bis(glycolato)cobalt(II)

Tomohiro Nakane,<sup>a</sup> Shota Yoneyama,<sup>b</sup> Takeshi Kodama,<sup>b</sup> Koichi Kikuchi,<sup>b</sup> Akiko Nakao,<sup>c</sup> Takashi Ohhara,<sup>d</sup> Ryuji Higashinaka,<sup>e</sup> Tatsuma D. Matsuda<sup>e</sup>, Yuji Aoki<sup>e</sup> and Wataru Fujita<sup>\*, f</sup>

<sup>a</sup>Department of Infomation and Basic Science, Graduate School of Natural Sciences, Nagoya City University, 1 Yamanohata, Mizuho-cho, Mizuho-ku, Nagoya 467-8501, Japan.

<sup>b</sup>Department of Chemistry, Tokyo Metropolitan University, 1-1 Minami-osawa, Hachioji 192-0397, Japan.

<sup>c</sup>Comprehensive Research Organization for Science and Society, Tokai, Ibaraki 319-1106, Japan.

<sup>d</sup>J-PARC Center, Japan Atomic Energy Agency, Tokai, Naka, Ibaraki 319-1195, Japan.

<sup>e</sup>Department of Physics, Tokyo Metropolitan University, 1-1 Minami-osawa, Hachioji 192-0397, Japan.

<sup>f</sup>General Education, Faculty of Science and Technology, Seikei University, 3-1-1 Kichijoji-kita machi, Musashino 180-8633, Japan.

E-mail: fujitaw@st.seikei.ac.jp

1. Photogragh	S2
2. Magnetic diffractions observed by neutron diffraction experiments	S3
3. The selected structural parameters by neutron diffraction anlayses	S4

## 1. Photograph



Figure S1. Photogragh of single crystals of 1.

## 2. Magnetic reflections observed by neutron diffraction experiments



Figure S2. The h0l plane of the reciprocal space at 5 K for 1. The red arrows correspond to the magnetic reflections.

## 3. Magnetic reflections observed by neutron diffraction experiments

Temperature / K	300	20	5
O4–H7 / Å	0.995(3)	0.997(2)	0.992(2)
O2H7 / Å	1.672(3)	1.670(2)	1.661(2)
O4–H7 <b>…</b> O2 / Å	2.666(2)	2.667(2)	2.652(2)
Temperature / K	300	20	5
Co1–O2 / Å	2.114(2)	2.111(2)	2.101(2)
Co1–O3 / Å	2.051(2)	2.0475(18)	2.0367(18)

2.0916(19)

2.0811(19)

Table S1. Interatomic distances in the hydrogen bond part O–H•••O in 1.

Table S2. The equatorial and axial Co–O coordination bond lengths in 1.

2.092(2)

Co1–O4 / Å