†Electronic Supplementary Information (ESI) available:

Figure S1: Rietveld refinement of the PXRD pattern at room temperature for a sample with stoichiometry $\text{La}_3\text{Co}_2\text{VO}_9$ synthesized by sol gel method. Main phase: $\text{LaCo}_{0.73}\text{V}_{0.27}\text{O}_3$; impurity phase: $\text{LaVO}_4$.

Figure S2: Rietveld refinement of PND pattern at room temperature for a sample with stoichiometry $\text{La}_3\text{Co}_2\text{VO}_9$ synthesized by sol gel method. Main phase: $\text{LaCo}_{0.73}\text{V}_{0.27}\text{O}_3$; impurity phase: $\text{LaVO}_4$.

Figure S3: Rietveld analysis of PXRD pattern for the thermogravimetric solid residue. Vertical marks correspond to the position of the allowed Bragg reflections. Upper marks: $\text{LaCoO}_3$ (61.3(2)%); Middle marks: $\text{V}_2\text{O}_5$ (13.5(2)%).
Lower marks: La$_2$O$_3$ (25.2(1)\%). Due to the high preferential orientation produced by sample preparation on the zero background sample holder (Silicon single crystal), the percentages are not close to the theoretical ones (47.5\% for LaCoO$_3$, 7.5\% for V$_2$O$_5$ and 45\% for La$_2$O$_3$), but all the reflections can be explained with the proposed compounds.

Structural information derived from the crystal structure refinement of LaCo$_{0.71(1)}$V$_{0.29(1)}$O$_{2.97(3)}$ has been deposited at the ICSD Fachinformationszentrum Karlsruhe (FIZ) (E-mail: CrysDATA@FIZ.Karlsruhe.DE), with ICSD file number 428836 (for LaCo$_{0.71(1)}$V$_{0.29(1)}$O$_{2.97(3)}$ at 300 K).
See DOI: 10.1039/b000000x/