Supplementary Figure Legend

Supplemental Figure 1. Acute IPMK depletion attenuates LKB1-AMPK signaling in response to AMPK agonists.

(A-B) WT (fl/fl) MEF cells were transfected with Cre recombinase or control empty vector for 30 h to acutely delete IPMK from cells. Cells were treated with 4 mM metformin (C), 1 mM AICAR (D) for 2 h.

Supplemental Figure 2. IPMK is involved in phosphorylation of LKB1 at Ser 428.

Cells (fl/fl and KO) were treated with 4 mM Metformin for 2 hour. Cell lysates were analyzed for pAMPK and pACC. Blots are representative of at least three separate experiments. Blots are representative of at least three separate experiments.

Supplemental Figure 3. IPMK is not required for CaMKKβ-mediated phosporylation of AMPK. Cells (fl/fl and KO) were treated with calcium ionophore, A23187 for 1 hour. Cell lysates were analyzed for pAMPK and pACC. Blots are representative of at least three separate experiments.

Supplemental Figure 4. Expression of various species of IPMK restores AMPK signaling in IPMK-depleted (KO) MEFs cells. Cells were transfected (electroporation) with 30 ug of Myc-tagged wild-type IPMK, atIpk2β (Arabidopsis)

or control empty vector for 30 h. Cells were treated with 1mM AICAR for 2 h. Western blot performed for Supplemental fig.1 Blots are representative of at least three separate experiments. Relative quantifications of pAMPKα2 levels are shown. Values are normalized by total levels of AMPK α2 and are expressed as means ± SE of three determinations (* Student's t-test, $P<0.005$). (C) IPMK-depleted, wild-type, and atIpk2β overexpressed cells were radiolabeled with [^{3}H]inositol as described material and methods. Soluble inositol phosphates (labeled IP4, IP5, IP6, and IP7) were separated by HPLC.

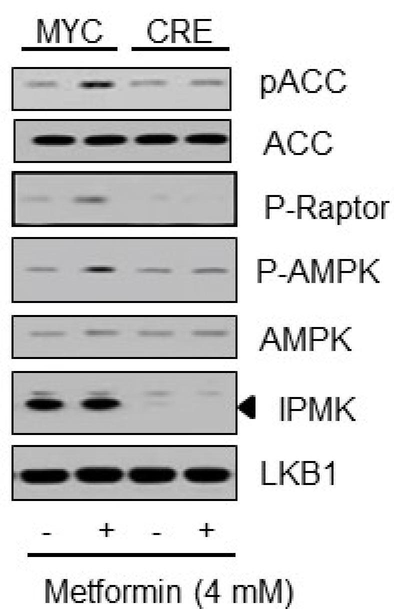
Supplemental Figure 5. Exon3 and 6 of Human IPMK are involved in LKB1 interaction. (A) GST, GST-IPMK or GST–IPMK exon fragments (exon1: 1-62, exon2: 63-92, exon3: 93-124, exon4: 125-182, exon5: 183-208 and exon6: 209-416) were pull-downed from HEK293T cells co-transfected with LKb1-Myc. Co-immunoprecipitation of LKB1-Myc was determined by western blots.

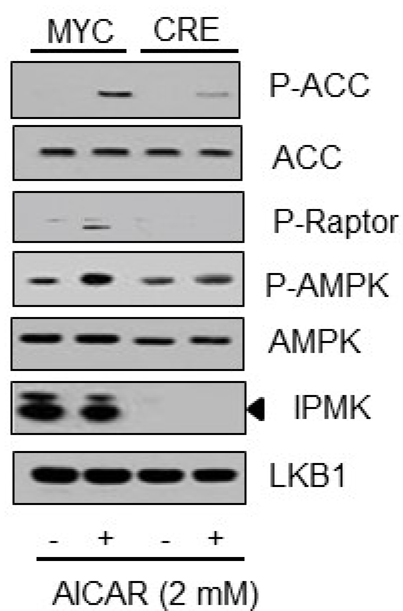
Supplemental Figure 6. IPMK does not alter an interaction between LKB1 and AMPK. HEK293 T cells were transfected as indicated in the figure. GST pulldown assay was performed and visualized by immunoblotting.

Supplemental Figure 7. IPMK activity does not alter its interaction with LKB1. HEK293T cells were transfected with either wild type (W) or inactive (K) IPMK plasmid in the presence or absence of LKB1 plasmid. Immunoprecipiation

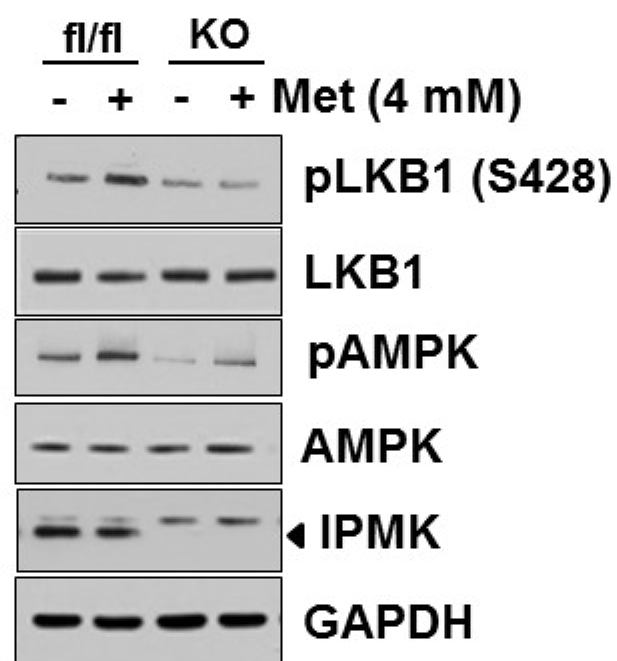
was performed with anti-flag antibody and immunoblotted with either Myc or flag antibody.

Supplemental Figure 8. Overexpression of LKB1 (1-90) does not alter the profile of inositol phosphates. HEK293T cells transfected with GFP or LKB1 (1-90) were radiolabeled with [^{3}H]inositol as described in Supplemental Experimental procedures. Soluble inositol phosphates (labeled IP4, IP5, IP6, and IP7) were separated by HPLC. No major difference between two groups suggests that LKB1 (1-90) does not affect IPMK function in inositol metabolism.





Supplemental Figure 1 (Bang et al)



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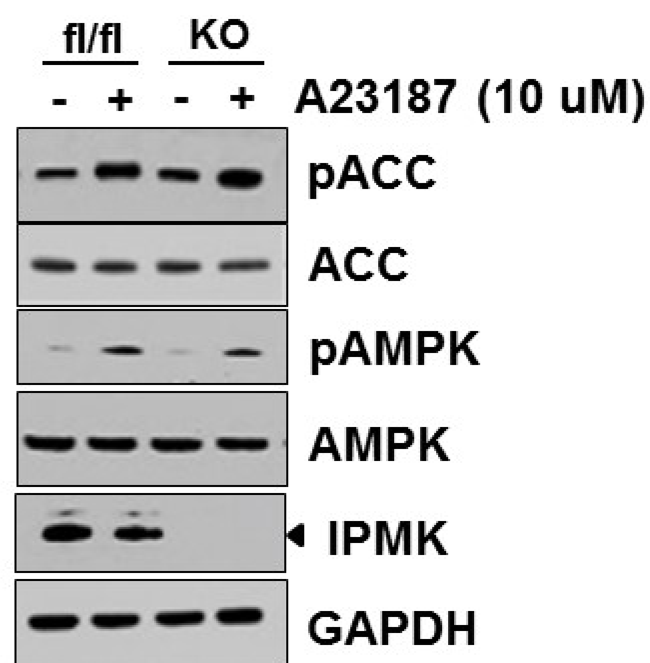
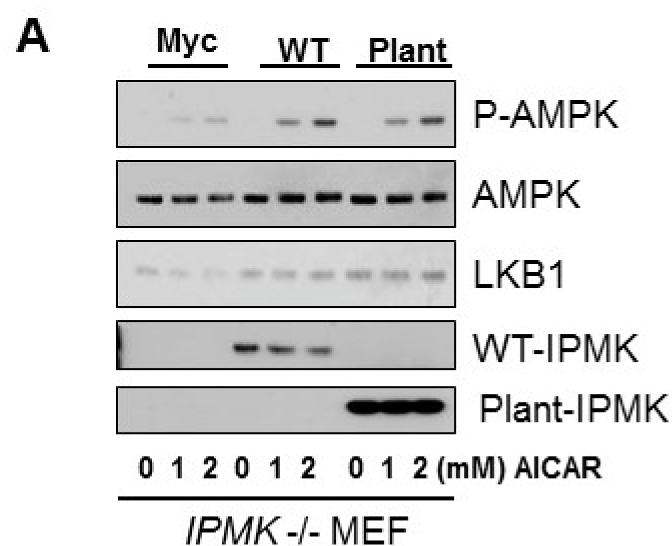
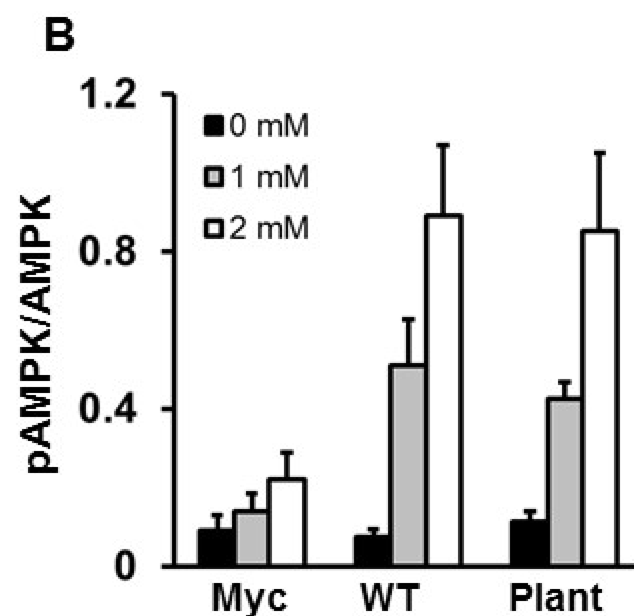
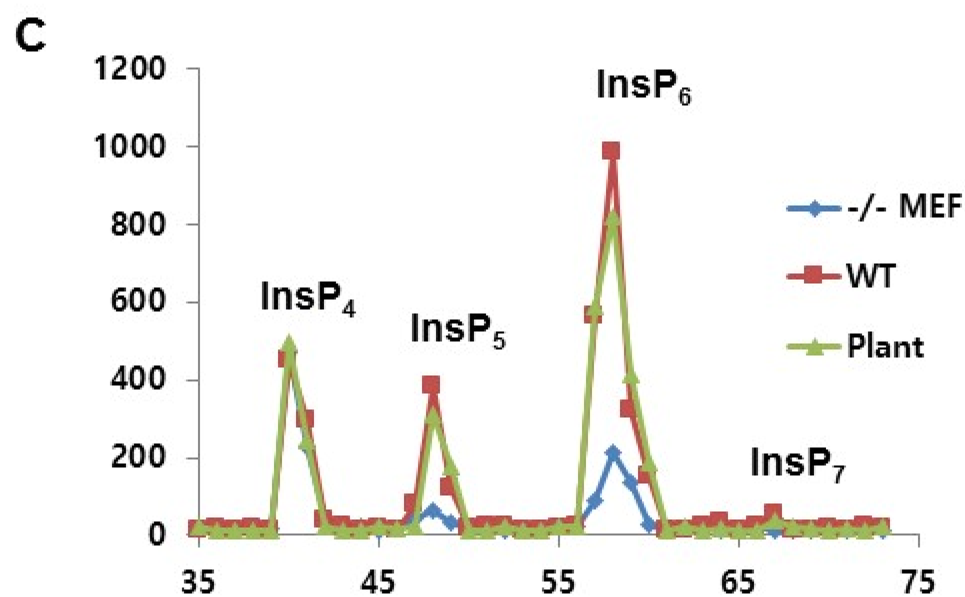


Supplemental Figure 3 (Bang et al)

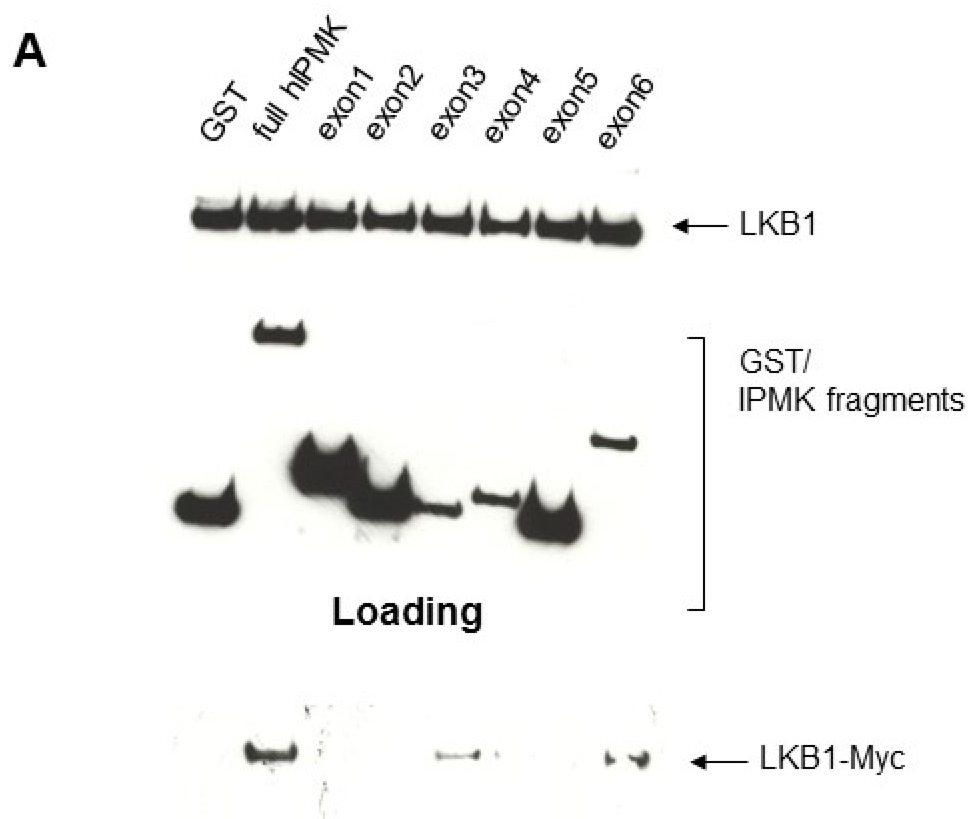






Supplemental Figure 4 (Bang et al)

Interaction of IPMK and LKB1



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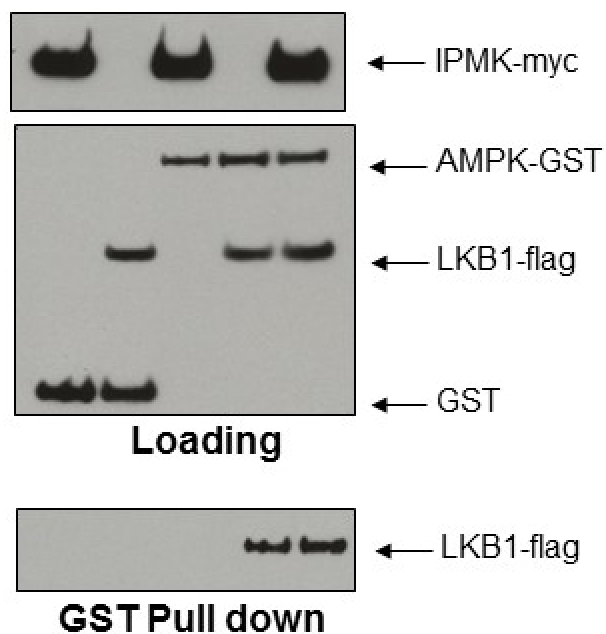
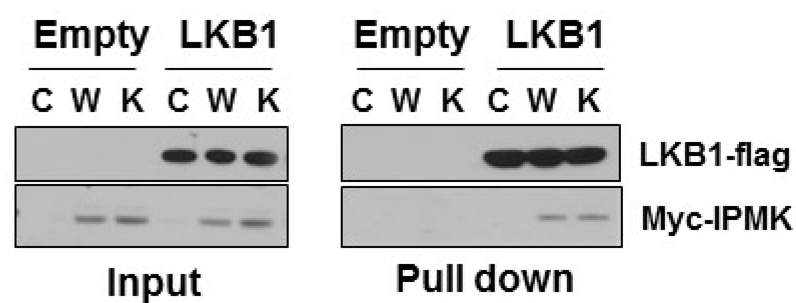
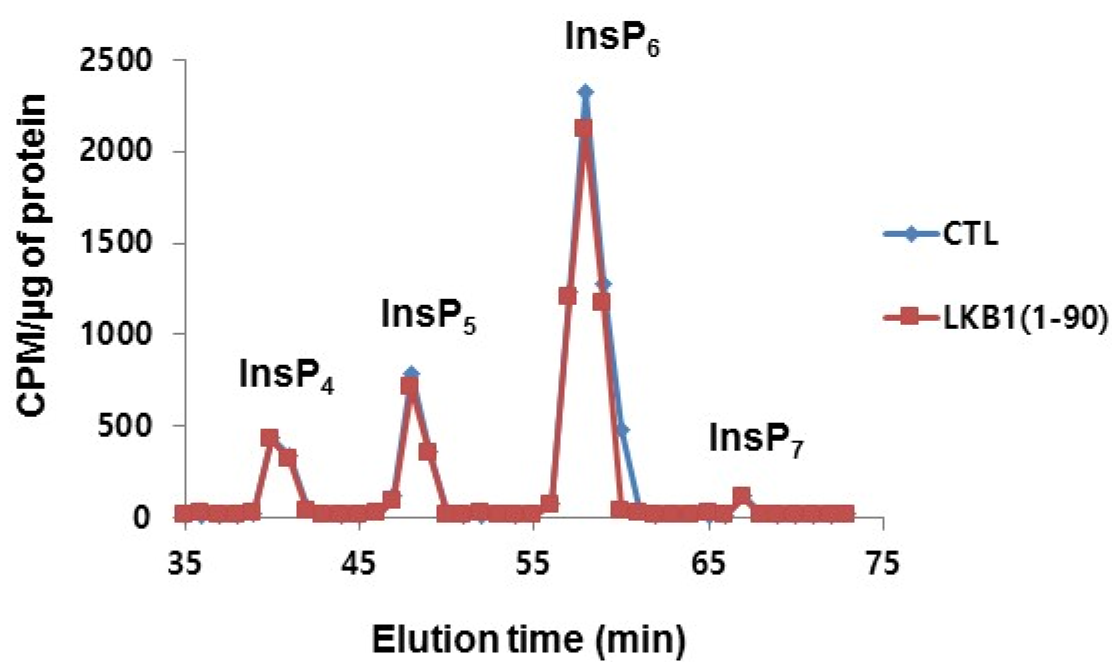


Supplemental Figure 6 (Bang et al)



Supplemental Figure 7 (Bang et al)



Supplemental Figure 8 (Bang et al)