**Supplementary Methods 1**

**Western Blot Analysis**

* **Lysis Buffer with protein inhibitors** (all from Sigma-Aldrich, Taufkirchen, Germany):

40 mM Hepes, 120 mM NaCl, 1 mM EDTA, pH 7.5, 0.3% CHAPS, 10 mM PMSF, 10 mM glycerophosphate, 50 mM NaF, 1 mM Na3VO4, 0.1 mM benzamidine, 5 mg/ml aprotinin, 1 mg/ml leupeptin, 1.5 mg/ml pepstatin-A

* **Seperation gels:**

Akt (60kDa) 10%, AMPKα (62kDa) 10%, IRS-1 (180kDa) 6%, mTOR (289kDa) 6%, p70S6kinase 1 (p70S6k1) (70kDa) 8%.

* **Blotting technique:**

Semi-dry blotting (RT for 2h) was used for Akt / P-Akt, AMPKα / P-AMPKα and p70S6k1 / P-p70S6k1.

Tank-blotting (4°C for 2h) was used for mTOR / P-mTOR and IRS-1 / P-IRS-1, due to their molecular size.

* **Membrane blockage:**

For Akt, P-Akt, AMPKα and P-AMPKα membranes were blocked with 5% nonfat dry milk in 0.1% Tris-NaCl-Tween (TNT) buffer at RT for 1h.

For IRS-1, P-IRS-1, mTOR, P-mTOR, p70S6k1 and P-p70S6k1 membranes were blocked with 3% BSA in 0.1% TNT for 1h at RT.

* **Primary antibody dilution:**

For Akt, P-Akt, AMPKα and P-AMPKα the primary antibodies were diluted in 5% BSA, 0.1% TNT. IRS-1, P-IRS-1, mTOR, P-mTOR, p70S6k1, P-p70S6k1 primary antibodies were diluted in 1% BSA, 0.1% TNT.

* **Primary antibodies (used at :1000):**

All primary antibodies were rabbit versus human, ordered from Cell Signaling Technology®):

total Akt (# 9272), P-Akt (Thr308) (# 9275), total AMPKα (# 2532), P-AMPKα (Thr172) (# 2531), total IRS-1 (# 2382), P-IRS-1 (Ser636/639) (#2388), total mTOR (# 2983), P-mTOR (Ser2448) (# 2971), total p70 S6Kinase (# 9202), P-p70 S6Kinase (Thr389) (# 9205).

* **Secondary antibody dilution technique**:

For IRS-1, P-IRS-1, mTOR, P-mTOR, p70S6k1, P-p70S6k1 detection the secondary antibody was diluted in 5% BSA, 0.05% TNT. In all other cases dilution was prepared with 5% nonfat milk, 0.05% TNT.

* **Loading control:**

We used β-Actin (I-19) antibody at a dilution of 1:2000 (5% nonfat milk, 1X TNT) from Santa Cruz Biotechnology, Inc. (Heidelberg, Germany). The secondary antibody for the β-Actin (I-19) antibody was an anti-goat antibody (Dianova # 88038, Jackson ImmunoResearch Laboratories, USA, #305-035-045) used at a dilution of 1:1500. For β-Actin detection membranes were stripped for 30min with 50°C warm buffer (100ml buffer contained 20ml SDS 10%, 12.5ml Tris HCl pH 6.8 0.5M, 67.5ml ultrapure water, 0.8ml beta-mercaptoethanol) with some agitation, followed by 10min wash with 1x TNT.