Cell isolation
Cell cultures were obtained from the “German Cell Bank for Wildlife ´Alfred Brehm´ (short: CRYO-BREHM)”. The cell cultures were generated using tissue specimen from deceased orangutan (Pongo pygmaeus) kidney, common marmoset (Callithrix jacchus*)* submandibulary salivary gland, Rodrigues Fruit Bat (*Pteropus rodricensis*) skin, domestic rabbit (Oryctolagus cuniculus forma domestica) pancreas and from Alpaka (Vicugna pacos) placenta supplied by zoological gardens (Hagenbecks Tierpark, Hamburg, Germany and Zoo Rostock, Rostock, Germany). Tissue samples were stored in Ringer solution (Fresenius, Bad Homburg, Germany) at +4 °C until cell isolation and were processed within 24 hours post mortem. Pancreatic tissue from norwegian rat (Rattus norvegicus) was obtained from a Sprague Dawley rat which was anesthetized and bled to death from the dorsal aorta and processed immedeately. For cell isolation, specimen of about 0.5 cm^3 were treated as described previously (Kruse et al., 2004). Briefly, the tissue was minced thoroughly with small surgical scissors and digested twice for 20 minutes or 15 minutes, respectively, using a medium consisting of HEPES-Eagle medium, 0.1mM HEPES-buffer, 70% (v/v) modified Eagle-medium, 1% (w/v) bovine serum albumin, 2.4 mM $CaCl_2$ and 0.2 mg/ml collagenase (Serva, Heidelberg, Germany), pH 7.45, at 37 °C in an orbital shaker with 150 cycles/minute. Prior to each digestion step the mixture was aerated with carbogen gas, a mixture of oxygen and carbon dioxide (95:5 (v/v), Linde, Germany). In between the two digestion steps, the digestion medium was replaced by a medium of the same formulation that contained no collagenase and the tissue was further minced using small surgical scissors. Contaminating fat tissue floated on top of the suspension and could be removed using a pasteur pipette. Following the second digestion step, the tissue was left in digestion buffer and dissociated through up and down suction using glass pipettes (20 ml, 10 ml, 5 ml, 2 ml) with restrictive orifices until it could be readily pipetted. The resulting suspension was filtered through 200 µm nylon mesh and the filtrate centrifuged with 800 rpm for 5 minutes at room temperature. Finally, the pellet was resuspended in Dulbecco's Modified Eagle Medium (DMEM, Invitrogen) supplemented with 20% fetal calf serum “GOLD” (PAA Laboratories, Pasching, Austria), Penicillin (100 U/ml), Streptomycin (0.1 mg/ml), Gentamycin (10 µg/ml) and Amphotericin (0.25 µg/ml). The suspension was transferred into cell culture dishes (PAA Laboratories, Pasching, Austria) and cultured at 37 °C in 5% CO_2 humidified atmosphere.

Cell culture
Freshly isolated cells were cultured in DMEM supplemented with 20% fetal calf serum “GOLD” (PAA Laboratories, Pasching, Austria), Penicillin (100 U/ml), Streptomycin (0.1 mg/ml), Gentamycin (10 µg/ml) and Amphotericin (0.25 µg/ml). When stable cell populations had established, usually within 2 passages, and any initial bacterial or fungal contamination was eliminated, the cells were cultured in DMEM supplemented with 10% fetal calf serum “GOLD”, Penicillin (100 U/ml) and Streptomycin (0.1 mg/ml). Bovine Pulmonary Artery Endothelial Cells (BPAEC, catalog #PB30205, Lot #0707271165, Genlantis, San Diego, USA) were cultured applying the same conditions. Confluent cells were passaged using 0.05% trypsin/EDTA (PAA Laboratories, Pasching, Austria) and were reseeded at a ratio of 1:3 for further propagation or were cryoconserved. For cryoconservation, the cell pellet was resuspended in ice cold FCS:DMSO (9:1), transferred in cryovials (TPP, Trasedingen, Switzerland) and cooled at -1K/minute from +4 °C to -80 °C in a -80 °C freezer using an isopropanol freezing container and subsequently transferred in liquid nitrogen atmosphere. To reculture from frozen stocks, cells were thawed rapidly in a 37 °C water bath, transferred in prewarmed culture medium and centrifuged with 800 rpm for 5 minutes at room temperature. Following centrifugation, the pellet was resuspended in culture medium, the suspension was transferred in cell culture dishes and the cells cultured at 37 °C in 5% CO_2 humidified atmosphere. The cells were cultured for three passages and were then used for RNA isolation.

RNA isolation
The cells were detached from the culture dishes using 0.05% trypsin/EDTA (PAA Laboratories, Pasching, Austria). Culture medium (see above) was added and the suspension was centrifuged with 800 rpm for 5 minutes at room temperature. The supernatant was removed and the pellets stored at -80 °C until RNA isolation. The RNA was isolated fully automated using the QIAcube instrument (Qiagen, Hilden, Germany) together with Qiagen RNeasy Plus Mini spin column kit (cataloge #74134) according to the manufacturers protocols. The RNA solution was kept at -80 °C in a freezer or shipped on dry ice.