SNF472 - a potential novel calcification inhibitor in CKD-MBD

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**BACKGROUND**

Chronic kidney disease (CKD) is associated with cardiovascular calcification (CVC) in response to mineral and bone disorder¹. SNF472 is an intravenous formulation of the hexasodium salt of myoinositol hexaphosphate. It directly inhibits calcification by binding to the growth sites of the hydroxyapatite crystal.

**OBJECTIVE**

We investigated the effects of SNF472 upon vascular smooth muscle cell (VSMC)-mediated calcification triggered by high calcium and phosphate (CaPO). Cells were treated either with sodium thiosulfate (STS)² or SNF472.

**METHODS**

Figure 1: Isolation of primary VSMC and cell culture setup

Figure 2: Dose dependency of SNF472 and STS treatment

Figure 3: TUNEL staining of SNF472 and STS treated VSMCs

Figure 4: Time dependency of SNF472 treatment

**RESULTS**

Alkaline phosphatase and Cbfa1

SNF472 decreased Ca deposition in rodent VSMC in a high CaPO microenvironment without inducing apoptosis and prevented upregulation of genes indicating switch from contractile VSMC to osteoblast-like cells. Hence, SNF472 qualifies as a promising research target regarding the potency to inhibit CVC in CKD patients undergoing dialysis.

**CONCLUSIONS**

**REFERENCES**

2. Chen, NX et al.: Adipocyte induced arterial calcification is prevented with sodium thiosulfate. Biochemical and Biophysical Research communication, 2014