Additional file

Sulfated xylomannans from the red seaweed *Sebdenia polydactyla*: structural features, chemical modification and antiviral activity

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Supplementary material
**Supplementary Figure 1.** Fourier transformed-IR spectra of (1) desulfated (F1D) and (2 and 3) further sulfated (F1S1 and F1S3) xylomannans generated from *Sebdenia polydactyla*

A series of xylomannans with different degree of sulfation (DS) were prepared by solvolytic desulfation and chemical further sulfation of the purified xylomannan sulfate of *Sebdenia polydactyla* using methods as described under “Materials and methods”.
Supplementary Figure 2. Total ion chromatogram of partially methylated alditol acetates (PMAA) generated from the sulfated xylomannan (F1) of the red alga Sebdenia polydactyla

The sulfated xylomannan was completely methylated and then hydrolyzed, reduced and the alditol acetates were converted into their PMAA as described under “Materials and methods”. 1: 1,5-di-O-acetyl-2,3,4-tri-O-methylxylitol; 2: 1,5,6-tri-O-acetyl-2,3,4-tri-O-methylmannitol; 3: 1,3,5-tri-O-acetyl-2,4,6-tri-O-methylmannitol; 4: 1,3,5,6-tetra-O-acetyl-2,4-di-O-methylmannitol; 5: 1,2,3,5,6-penta-O-acetyl-4-O-methylmannitol; 6: 1,2,3,4,5,6-hexa-O-acetyl-mannitol.
**Supplementary Figure 3.** $^1$H NMR spectrum at 600 MHz of the Smith degraded material (F1D-Sm) derived from the desulfated xylomannan (F1D) of *Sebenia polydactyla*

The spectrum was recorded at 60 °C for sample in D$_2$O solution. The Smith degraded polymer was derived from the desulfated xylomannan of *Sebenia polydactyla* using methods as described under “Materials and methods”. The anomeric signal of β-linked terminal xylose residue at 4.56 ppm disappeared in the NMR spectrum of the Smith degraded polymer (F1D-Sm). X, impurities.