



**Figure S 1:** Effects of temperature (A) and pH (B) on the activity of *XpoGH78*. (A) Temperature was varied from 10 to 80°C in MOPS buffer (100 mM, pH 6.0), substrate MFA; (B) pH was varied from 5 to 10 using the same buffer (MOPS, 100 mM) and 3,4-dimethoxybenzyl acetate (*black circles*), veratric acid methyl ester (*black triangles*) and MFA (*black squares*) as substrates. Stability of purified *XpoGH78* over time (8 hours) at different pH-values (C) and temperatures (D); (C) pH 10 (*open squares*), pH 7 (*open triangles*), pH 3 (*open circles*) in citrate/phosphate buffer (50 mM); (D) 25 °C (*open squares*), 40 °C (*black squares*), 60 °C (*crosses*) in MOPS buffer (50 mM, pH 6.0). All experiments were performed in triplicates, standard deviation <5%.