

### Study on the chiral sensing of Mandelic acid using a QCM

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The chiral sensing of Mandelic acid is conducted on a penicillamine modified quartz crystal microbalance (QCM). To investigate the interaction of R,S-Mandelic acid on L,D-penillamine. L,D-penillamine is self-assembled on a gold electrode of QCM. The resonant frequency shift of the modified QCM is measured by vapor diffusion nano self-assembly, and compared with each other materials. An atomic force microscope (AFM) technique is also used to confirm the procedure of Mandelic acid on penillamine. From these results, it is found that the QCM sensor system could be applied to chiral sensing the Mandelic acid by vapor diffusion nano self-assembly.