Plasmonic Monitoring of CO Release from CO-releasing Molecules

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CO-releasing molecules (CORM) is important in many biomedical applications ranging from cellular signaling to therapeutics. CO release from CORM may depend on CORM species and physiological conditions such as temperature and pH. However, its monitoring by conventional infrared and fluorescence spectroscopy has been limited by poor sensitivity and slow response time. Here we report plasmonic monitoring of CO release from CORM by surface-enhanced Raman spectroscopy. We fabricate CO-specific nanoparticle assembly. The sensitivity and selectivity of our proposed method are examined. In addition, the CO release of various CORM is also investigated by changing pH and temperature.