

间苯二酚杯[4]芳烃为涂层的压电石英传感器测定液相多巴胺

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摘要 研究了以间苯二酚杯[4]芳烃为敏感涂层的石英压电晶体(PQC)传感器,在中性磷酸盐缓冲液体系中对神经传递质多巴胺和抗坏血酸的响应,发现间苯二酚杯[4]芳烃对多巴胺有很好的响应选择性,这归因于间苯二酚杯[4]芳烃与多巴胺分子结构相匹配,形成主客体超分子体系。以间苯二酚杯[4]芳烃为涂层的POC传感器对液相中多巴胺具有响应快、重现性好、灵敏度高的特点,线性响应范围为3.5-500 $\mu\text{g/g}$ 。

关键词 [苯二酚 P](#) [杯芳烃](#) [传感器](#) [多巴胺](#)

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A Piezoelectric Quartz Crystal Coated With Resorcinol[4]arene for the Determination of Dopamine in Liquid

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Abstract The resorcinol[4]arene derivative has been synthesized and studied as a sensitive material for the determination of dopamine in liquid through a piezoelectric quartz crystal (PQC) sensor. The PQC-coated resorcinol[4]arene is highly selective for dopamine in comparison with ascorbic acid. The new selectivity dimension is attributed to host-guest interactions between resorcinol[4]arene and dopamine. The PQC is used for monitoring of dopamine in liquid at phosphate buffer (pH = 7.40) with fast response time, good sensitivity and reproducibility. It exhibits a linear response in the range 3.5- 500 $\mu\text{g/g}$ of dopamine.

Key words [BENZENEDIOL P](#) [calixarene](#) [SENSORS](#) [DOPAMINE](#)

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