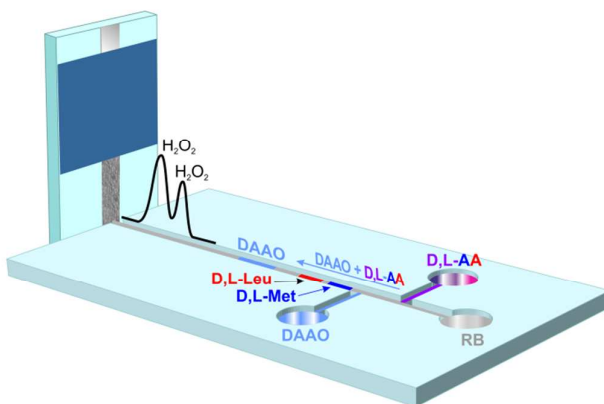


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The core of the strategy is shown in the Scheme S-1: the simultaneous electrokinetic injection of DAAO and AAs, the electro-focusing of the DAAO and AAs (in downstream and in the upstream of the micro-channel, respectively) and the AAs separation, the selective in-channel reaction and the hydrogen peroxide detection produced from each D-AA enantiomer after enzymatic reaction are represented. Hybrid polymer/graphene-based electrodes are end-channel coupled to the microfluidic system to improve the analytical performance.



Scheme S-1: Enzyme-based microfluidic chip strategy coupled to graphene electrodes for the detection of D-amino acid enantiomer biomarkers.