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Sommario/riassunto	The possibility to integrate biorecognition elements into electrochemical detection systems has opened the way to a new class of powerful analytical devices named electrochemical (EC) biosensors. The first EC biosensors employed enzymes as recognition elements; however this limited their application to redox enzymes and natural or artificial redox substrates or inhibitors. Broadening this to include non-electroactive analytes was later possible thanks to the development of affinity sensors in which specific interactions between biomolecules are exploited for developing highly selective and sensitive biosensors. Presently, the combination of the exceptional molecular recognition capabilities of antibodies and aptamers with the sensitivity, low cost, practicality of use and handiness of electrochemical devices is leading to an impressive development of EC immunosensors and aptasensors that are potentially suitable to detect a wide range of analytes, following a path that is moving alongside the most recent advances in proteomics. Interestingly, with continued improvements and refinements in EC immunosensors based on the use of labels, together with intrinsically electroactive, or those with the ability to interact with electroactive molecules, a new generation of label-free sensors is being developed. This Special Issue takes stock of the state of the art and identifies prospects for EC immuno- and aptasensors, both labeled and label-free. Emphasis is placed on analytical applications for the rapid detection of disease markers and for toxicological and food analyses.