
A conceptual framework for the development of iridium(III) complex electrogenerated chemiluminescence labels

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Abstract

Compared to the ruthenium(II) polypyridine complex luminophores traditionally used in electrogenerated chemiluminescence (ECL) labelling, iridium(III) complexes offer a much wider range of emission colors, greater luminescence efficiencies, and in some cases, much greater ECL intensities [1,2]. For more than a decade, the annihilation ECL and co-reactant ECL of an extensive range of iridium(III) complexes has been explored, but the translation of these investigations into real-world bioassays incorporating iridium(III) complex labels has been quite limited. The presentation describes a design strategy and conceptual pathway through several barriers that have restricted the application of iridium(III) luminophores as ECL labels in immunoassay and related techniques, drawing together the experimental and computational work of our group and many others.

References

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Keywords: Electrogenerated chemiluminescence, iridium(III) complexes

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