

Technical Note

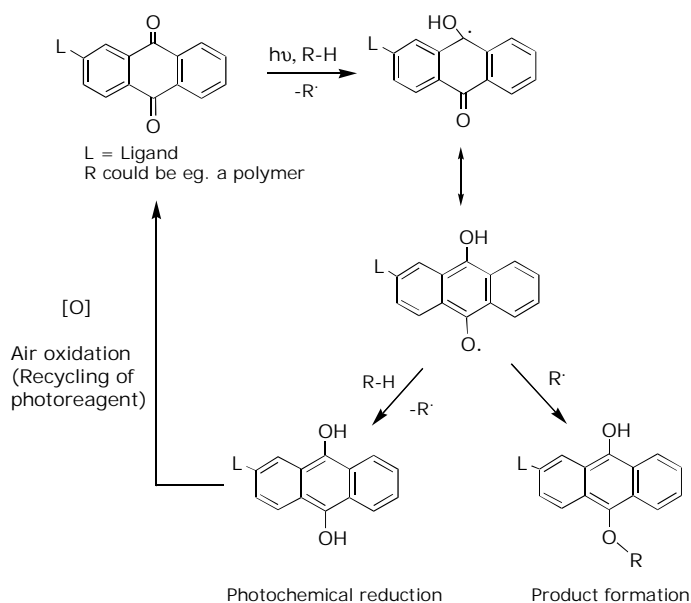
Antraquinone chemistry

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Flexible Chemistry for Biomolecule Attachment

The immobilization of biomolecules onto surfaces in high density, spatially-addressable arrays for use in various types of functional assays is the basis for a large and rapidly growing sector of the biotechnology market. The use of various types of nucleic acid arrays is already widespread for purposes of genotyping and expression profiling.



Furthermore, the application of similar arraying technologies to other classes of biomolecules such as proteins and carbohydrates is expected to expand at very high rates of growth in the R&D and clinical market sectors over the next 5-10 years. Exiqon's proprietary antraquinone (AQ) surface-coupling technology is based on the photochemically-activated, radical cross-linking reaction of AQ with carbon-containing surfaces (see picture). This chemistry provides for a uniquely flexible system for the coupling of all the major classes of biomolecules to solid surfaces. In addition, an important criterion to consider when coupling biomolecules to surfaces is the interaction of the biomolecule with the surface and the effects of this interaction on the biomolecules functionality. The AQ photochemistry combined with Exiqon's broad range of linker chemistries and proprietary optical-grade polymer arraying platform provides optimal solutions for the surface immobilization of these biomolecules because of the ability to individually tailor surface chemistries to the molecular requirements of

the specific biomolecule. Thus Exiqon possesses the tools to exploit the coming market growth in the area of biomolecule arraying.

Unique AQ Technical & Application Advantages

- Well characterized, surface non-destructive, aqueous photochemistry
- Possibility of one or two-step biomolecule immobilization
- Availability of a wide range of flexible linker chemistries that allow coupling of all the major classes of biomolecules in random and/or regio-specific modes
- Derivatives available for automated incorporation into oligonucleotides or peptides using standard solid-phase synthesis methods
- Applicability to a wide variety of polymers and formats employed in the biotechnology and pharmaceutical industry

Potential Optimal Broad Market Segments for Exploitation of AQ Technology

- Surface Coatings
- In vitro diagnostics
- Pharma (HTS, Drug Delivery)

Trademarks and Patents

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