

Aptamers for diagnostic.

Jean-Jacques Toulmé¹, Eric Dausse¹, Carmelo Di Primo¹, Michèle Allard², Julie Miguel² and Sonia Da Rocha³.

1 - Inserm, European Institute of Chemistry and Biology, University of Bordeaux, Bordeaux, France

2 - General Hospital, Bordeaux, France

3 - Novaptech, 2 rue R. Escarpit, Pessac, France

jean-jacques.toulme@inserm.fr

Aptamers are oligonucleotides identified through a combinatorial process known as SELEX (Systematic Evolution of Ligands by EXponential enrichment). They exhibit both high affinity and specificity for a pre-determined target of interest. They can be raised against a wide range of molecules -even living cells- including marker proteins for major diseases. Following association to various devices aptamers can signal the presence of their cognate ligand (fluorescence, SPR, ...).

We developed an automated platform that speeds up the selection of aptamers and designed a high throughput screening method for the identification of aptamers to various proteins, including human matrix metalloproteases and viral components. Aptamer-based tools were subsequently synthesized for imaging human brain tumors by scintigraphy and detecting viral proteins on micro-arrays.