

LINKED-TECHNOLOGY OPPORTUNITY

Synergistic Solutions from Networked Laboratories

A NON-CONFIDENTIAL / NO-OBLIGATION SUMMARY

B-107 IMPROVED POLYNUCLEOTIDE HYBRIDIZATION ANALYSIS FOR DIAGNOSIS *Faster, more accurate diagnoses of specific diseases through improved hybridization*

Technology Description:

Cedars Sinai Medical Center researchers have discovered several SNPs, or variable alleles, for diagnosing several conditions. In fact, diagnostic kits with the SNP oligonucleotides are available and hybridization-ready. These tools include SNPs representing the variable number of tandem repeats in the human IL-1 receptor antagonist gene used to diagnose ulcerative colitis in people of Jewish ancestry; a variant allele of the human LPL gene used to diagnose non-responsiveness to statins and therefore dictates better medication choice for the prescribing physician; and SNPs indicative of insulin resistance, a risk factor for type-2 diabetes mellitus.

UCLA researchers have developed hybridization technology that is an improvement over previously used hybridization technology primarily because this new methodology does not involve fluorescently labeling the probe. This makes the process much more time- and cost-efficient. The hybridization is recognized by a conformational change in the probe sequence upon binding to the target sequence. The conformational change is observed by monitoring evanescent wave illumination. Furthermore, this technology is more sensitive, eliminating the background problem, as there is a quantitative way to distinguish partially hybridized DNA from fully hybridized DNA in the sample.

Technology Background:

Current assays that examine polynucleotide hybridization using ChIP on chip technology usually utilize fluorescently labeled probes; it is also used in diagnostic kits to examine single nucleotide polymorphisms (SNPs) in patients, which frequently provide a better understanding of their disorders and more specific treatments. Unfortunately, high background frequently observed using standard hybridization techniques at times leads to misdiagnosis. An additional problem results from the fact that fluorescent labeling of the probe is time-consuming and not cost-efficient. Combining new technology developed at UCLA with the existing SNPs found at Cedars Sinai would eliminate these problems.

Applications:

- Diagnosis of ulcerative colitis
- Diagnosis of insulin resistance in diabetes mellitus patients
- Diagnosis of non-responsiveness to statins during coronary artery disease treatment

Intellectual Property:

At least a portion of this combination is protected by US Patent Application 20040241699; other rights may also pertain.

Additional Information:

For additional information or to initiate discussion of commercial interest, please contact:

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Technology Bundling Project

Funded by Ewing Marion Kauffman Foundation and administered by Larta Institute, the Project's expert panels examined technologies from 18 Southern California research centers and identified inventions which could be synergistically combined for unique solutions. These Linked-Solutions are now being offered for license, with reduced red tape and "1-stop technology shopping"



Combination Benefits

- Combined therapy & faster diagnosis
- Higher sensitivity & greater accuracy
- Permits patient-specific therapies
- Lower cost