Title: DETECTING RECESSIVE DISEASES IN INBRED POPULATIONS

Abstract: Techniques of using statistical analysis of genetic data to determine likely markers for a recessive genetic disease or trait. One embodiment of these techniques includes the steps of obtaining actual genotype data for one or more affected people with the genetic disease or trait in a population, obtaining estimated genotype data for the population, and analyzing the actual and estimated genotype data to find a region in genomes of the affected people that includes markers exhibiting particular homozygous pairs of alleles more frequently than would occur randomly.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**
- IPC(7) : GOIN 33/48; C12Q 1/68
- US CL : 702/16; 435/6

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)
- U.S. : 702/16; 435/6

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Arbour et al., Hum. Mol. Genet., 1997, Vol. 6, No. 5, pages 689-694.</td>
<td>1-6, 9-16, 19-21</td>
</tr>
<tr>
<td>Y,P</td>
<td></td>
<td>2-10, 12-20</td>
</tr>
</tbody>
</table>

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
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- **R** document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- **S** document member of the same patent family

**Date of the actual completion of the international search**
31 August 2005 (31.08.2005)

**Date of mailing of the international search report**
27 OCT 2005

**Authorized officer**
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Form PCT/ISA/210 (second sheet) (April 2005)
Continuation of B. FIELDS SEARCHED Item 3:
East, STN, Biosis, Compuscience, Biotechds, Biotechno, Medline, Embase, WPI covering search terms: genotype, estimate, score, statistical, merge, likelihood, Amish, inbred, marker, homozygosity, probability, autozygosity, method, analysis, trait, disease, recessive.