GENETIC ANALYSIS OF HUMAN EMBRYONIC STEM CELLS – PM

Background

Karyotyping is an important part of the quality assessment of cell lines established from human embryonic stem cells (hESC). The Department of Clinical Genetics, University and Regional Laboratories Region Skåne, offers karyotyping of such cell lines to research groups in this field. The analysis will be charged accordingly and the staff at the Department of Clinical Genetics will not claim any authorship if the karyotypes are to be published, unless otherwise agreed upon.

Sample delivery

Samples can be delivered as live cells by the research group (Lund only) or as fixed cell suspension. Cell culturing is done by the research group.

Living cells
The Sample reception must always be contacted prior to sample delivery. Samples are preferably delivered at the beginning of the week and before 9.00 AM for an harvest the same day. Samples delivered after 9.00 AM will be harvested the next day. Fridays and days before public holidays are not suitable for sample delivery.

Fixed cell suspension
Samples are preferably sent at the beginning of the week. The samples must be packed according to the guidelines “Packa Provet Rätt” published by the Public Health Agency of Sweden available online at the homepage of Folkhälsomyndigheten.

Request chart

A request chart for the delivery of hESC is available online, http://www.vardgivare.skane.se/vardriktlinjer/laboratoriemedicin. Click on “Remisser och blanketter” and select “Embryonala stamceller - kromosomanalys”.

The request chart and the sample must be labelled with the same name and passage number.

The request chart must contain appropriate information on the sender, in particular the client code (kundkod/MG-kod) of the research group (see below).

Sample registration

All samples will be registered in the laboratory management system and all samples are assigned a unique laboratory number. The name and the passage number are registered as last and first names, respectively. The sample delivery date is registered as the social security number (personnummer).

Sample preparation

Living cells
The harvesting (Colcemid treatment), fixation and making of slides for chromosome analysis are done by trained technical staff at the Department of Clinical Genetics.

Fixed cell suspension
The harvesting (Colcemid treatment) and fixation is done by the research group according to the standard protocol used by the Department of Clinical Genetics which will be provided upon request (see below). The making of slides for chromosome analysis is done as for live cells.

Analysis

The slides for chromosome analysis will be stained with Wrigth’s stain for G-banding. A total of 25 metaphases of adequate banding quality will be analyzed

if possible. Chromosome aberrations and marker chromosomes will be interpreted as far as possible based on the resolution of chromosome analysis. No extended analysis will be done unless specifically requested by the research group. The karyotype will be written according to the International System for Human Cytogenetic Nomenclature (ISCN).

Extended analysis

Any extended genetic analysis (metaphase/interphase FISH-analys, microarray) must be requested on the request chart or by communication with the Department of Clinical Genetics. The extended analysis, if requested, will be registered in the laboratory management system.

Report

The medical doctor in charge will review the karyotype and write a report in the laboratory management system. The report will be sent to the research group by ordinary mail delivery. The report will, as a minimum, contain 1) an interpretation of the karyotype and 2) the frequency (%) of normal *vs.* abnormal cells. Cells with non-clonal findings are classified as aberrant but a further specification of non-clonal findings is not done.

Billing

On a monthly basis, the client code will be charged the cost for the analysis according to the price list of Södra sjukvårdsnämnden.

Contact

Please contact the Sample reception prior to delivery of live cells

- Tel. 046 - 17 63 68

Please contact hospital geneticist Anna Collin for technical questions regarding protocol, sample handling and preparation as well as questions regarding client codes (kundkod/MG-kod).

- Tel: 046 – 17 33 11; e-mail: anna.collin@skane.se