# Isolation, immortalization and characterization of human B lymphocytes for the development of diagnostic and therapeutic antibodies against cancer.

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| **Ethical review** | Approved WMO |
| **Status** | Recruiting |
| **Health condition type** | Leukaemias |
| **Study type** | Observational invasive |

## Summary

### ID

NL-OMON47403

**Source**
ToetsingOnline

**Brief title**
Human antibodies against cancer.

### Condition

- Leukaemias
- Malignant and unspecified neoplasms gastrointestinal NEC
- Skin neoplasms malignant and unspecified

**Synonym**
anti-cancer antibodies / cancer eradication

**Research involving**
Human

## Sponsors and support

**Primary sponsor:** AIMM Therapeutics BV
**Source(s) of monetary or material Support:** VIRGO (FES) / KWF / AMC PhD Scholarship,Life Sciences Fund Amsterdam (LSFA) / Amsterdam Economic Board

## Intervention

**Keyword:** antibody, B cells, cancer, human

## Outcome measures

### Primary outcome

The identification and production of tumor-specific monoclonal antibodies by

the generation of tumor specific B lymphocyte clones.

### Secondary outcome

not applicable

# Study description

### Background summary

In the defense against cancer the immune system plays an important role. In healthy individuals, the innate and the adaptive immune systems collaborate to recognize and eliminate developing tumor cells, thereby preventing the outgrowth of tumor cells (reviewed recently by Schreiber ea, Science 2011;331:1565-1570). A well known clinical example of immune mediated tumor regression is the development of vitiligo in melanoma patients, through the recognition and killing of healthy pigment bearing cells in addition to the recognition and killing of melanoma cells. Another clinical example of anti-tumor immune responses are patients with hematologic tumors who receive an allogenic stemcell transplantation, to induce a sustained graft versus leukemia (or lymphoma) response. Similar to melanoma patients, this graft versus leukemia response is often accompanied by an immune response against healthy cells, resulting in graft versus host disease, where the donor immune system also mounts an immune response against otherwise healthy organs such as intestine, skin and liver.

### Study objective

Until recently, the field of anti-tumor immunology has focussed on the role of T lymphocytes. Recently, however, the group of prof. H. Spits and dr. T. Beaumont developed an in vitro methodology to grow human, monoclonal, B cell receptor positive and immunoglobulin secreting B cells (AIMSelect). With this method it has now become possible to study the role of B lymphocytes in anti-tumor immune responses.

The objective of the current study is to identify, develop and produce tumor specific antibodies with the goal to:
1) further characterize the role of B cells in anti-tumor immunity; and to
2) develop human monoclonal tumor specific antibodies for diagnostic and therapeutic purposes.

**Study design**

Our research focusses on three malignancies : hematologic malignancies, melanoma and gastro-intestinal tumors.

We will recruit patients who developed an anti-tumor response against one of the above mentioned malignancies. Of these patients, B lymphocytes will be isolated from one single draw of peripheral blood that is collected through venapuncture. These cells will be immortalized in vitro, after which monoclonal B cell lines and antibodies specifically directed against the tumor cells will be selected, isolated and grown. After characterization of the specific antigen on the tumor cells, the antibody functionality will be tested (in vitro and in mouse models). In a seperate study (for which we do not ask for approval here) we will study the presence of these antibodies in serum of larger series of patients and test whether these antibodies can play a role in diagnosis of anti-tumor responses. Details of the AIMSelect method are described in Kwakkenbos ea, Nature Medicine 2010;16:123-128.

**Study burden and risks**

Burden for participants
Single blood draw through venapuncture (55-65 ml; 6-8 tubes).

Risk associated with participation:
Neglectable (venapuncture-induced hematoma)

Benefit:
There is no direct benefit for the participants. There is a group benefit though; if we do find tumor-specific monoclonal antibodies that can be used in clinical practice, as a diagnostic tool (to assess tumor response for example after allogeneic stem cell transplantation) or as a therapeutic tool, this will be of benefit to cancer-patients in general. In any case these studies will improve our understanding of cancer-immunology, which is also beneficial to

cancer patients as a group.

# Contacts

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# Trial sites

## Listed location countries

Netherlands

# Eligibility criteria

## Inclusion criteria

o patients with a hematologic malignancy (leukemia or lymphoma) who received a hematopoetic stem cell transplantation and subsequently developed graft-versus-host disease and/or a sustained graft-versus-leukemia response;
o patients with melanoma who showed spontaneous or treatment induced tumor regression, preferably in the presence of signs of auto-immunity , like vitiligo;
o patients with gastrointestinal tumors (pancreatic or oesophagus) with either tumor regression or slower then expected tumor growth.

## Exclusion criteria

no

# Study design

## Design

**Study type:** Observational invasive

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| Masking: | Open (masking not used) |
| Control: | Uncontrolled |
| Primary purpose: | Other |

## Recruitment

NL

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| Recruitment status: | Recruiting |
| Start date (anticipated): | 23-05-2013 |
| Enrollment: | 75 |
| Type: | Actual |

## Medical products/devices used

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| Registration: | No |

# Ethics review

Approved WMO

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| Date: | 11-04-2013 |
| Application type: | First submission |
| Review commission: | METC Amsterdam UMC |

# Study registrations

## Followed up by the following (possibly more current) registration

No registrations found.

## Other (possibly less up-to-date) registrations in this register

No registrations found.

## In other registers

| Register | ID |
| --- | --- |
| CCMO | NL42718.018.12 |