

# Targeting the rheumatoid arthritis synovial fibroblast via cyclin dependent kinase inhibition - an early phase trial

<b>Submission date</b> 26/09/2014	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 26/09/2014	<b>Overall study status</b> Completed	<input checked="" type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 24/10/2023	<b>Condition category</b> Musculoskeletal Diseases	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Rheumatoid arthritis is a long-term condition causing pain, swelling and stiffness in the joints. The main aim of this study is to find out how much of the drug seliciclib can be given to patients with Rheumatoid Arthritis (RA) who have active RA despite treatment with anti-TNF monotherapy.

### Who can participate?

Adult patients with rheumatoid arthritis

### What does the study involve?

In stage 1, patients are grouped into seven groups of three patients each. They receive 200mg, 400mg, 600mg, 800mg or 1000mg seliciclib once daily for 4 consecutive days every week for 4 cycles. This determines the highest dose of seliciclib for stage 2. In stage 2, 18 participants receive seliciclib at the dose found in stage 1 for 12 cycles. Blood samples are taken during the study and in stage 2 small biopsies (samples) are taken from the lining of one of the joints (synovial biopsy) and participants may have an optional PET-CT (positron emission tomography-computerized tomography) scan.

### What are the possible benefits and risks of participating?

There may be no direct benefit to participants taking part in this study although it is possible that their arthritis symptoms will improve. If seliciclib is found to be an effective treatment for rheumatoid arthritis this may result in an alternative treatment that helps people with rheumatoid arthritis who have not experienced benefit from the currently available drugs. Seliciclib has previously been successfully tested on patients with certain types of cancer, but this is the first time this drug has been used in rheumatoid arthritis. All drugs can have side effects. The most commonly occurring side-effects encountered by patients taking seliciclib in cancer studies were fatigue (tiredness) and nausea (feeling sick), in the great majority of cases the symptoms experienced were not considered severe. Possible side-effects are monitored by the study doctors and, where possible, treatment is given to relieve symptoms. It is not known whether patients with rheumatoid arthritis taking seliciclib will encounter the same side-effects

as those with cancer. Taking blood samples may cause some discomfort and minor pain, and occasionally patients feel faint during or after the procedure. Sometimes patients have some bruising where the blood has been taken. Trained members of staff perform these procedures and every effort is made to prevent these problems. A local anaesthetic is used to numb the skin and joint to minimise any discomfort during the biopsy. The doctor uses ultrasound to guide them to the part of the joint to take samples from, to minimise the chance of complications. There may be some mild bruising after the procedure. As the local anaesthetic wears off after the procedure, up to one third of patients experience mild, temporary pain or discomfort which usually disappears within 24 hours. Very rarely (with a risk of less than 1 in 500) more significant complications may occur, such as an infection of the joint or skin, bleeding into the joint, deep vein thrombosis (blood clot), neurological (nerve) damage or thrombophlebitis (inflammation of a superficial vein). The procedure may leave a small (2-3 mm or 1/8 inch) scar. PET-CT scans involve the use of x-rays and gamma rays which are forms of radiation. Exposure to radiation is associated with increasing the risk of subsequent cancer. Everyone is exposed to natural or background radiation and everyone is at risk of developing cancer at some point. The overall risk of any of us developing cancer is about 1 in 3, and the additional risk for the PET-CT scan is considered to be very small. The benefits of the increased information from the test are thought to justify the use of radiation for this purpose. The dose of radiation that a participant would be exposed to is still well within the acceptable safety limits for radiation exposure.

Where is the study run from?

The study will run at Newcastle, Birmingham, Glasgow, Middlesbrough and London (UK)

When is the study starting and how long is it expected to run for?

October 2014 to December 2023

Who is funding the study?

Medical Research Council (MRC) (UK)

Who is the main contact?

Chrissie Butcher, [Chrissie.butcher@ncl.ac.uk](mailto:Chrissie.butcher@ncl.ac.uk)

## Contact information

### Type(s)

Scientific

### Contact name

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# Additional identifiers

## Clinical Trials Information System (CTIS)

2014-001339-35

## ClinicalTrials.gov (NCT)

Nil known

## Protocol serial number

17409

# Study information

## Scientific Title

Targeting the RA synovial fibroblast via cyclin dependent kinase inhibition an early phase trial (TRAFIC): a non-randomised trial

## Acronym

TRAFIC

## Study objectives

Repurposing study, using an oncology drug, Seliciclib, in rheumatoid arthritis in a two-part trial to determine maximum tolerated dose and then assess clinical response at 12 weeks.

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

NRES Committee North East Tyne and Wear South, 15/09/2014, ref: 14/NE/1075

## Study design

Non-randomized; Interventional; Design type: Treatment

## Primary study design

Interventional

## Study type(s)

Treatment

## Health condition(s) or problem(s) studied

Rheumatoid arthritis

## Interventions

Part 1: Participants will receive either 200mg, 400mg, 600mg, 800mg or 1000mg seliciclib once daily for 4 consecutive days every week for 4 weekly cycles\*. Results from part 1 will determine the Maximum Tolerated Dose (MTD) of seliciclib for part 2.

Part 2: 18 participants will receive seliciclib (at the MTD determined in Part 1) for 12 cycles\*

\* one cycle equates to a week of treatment: a daily dose of seliciclib for four consecutive days followed by 3 days with no treatment.

## **Intervention Type**

Drug

## **Phase**

Not Applicable

## **Drug/device/biological/vaccine name(s)**

Seliciclib

## **Primary outcome(s)**

Part 1:

1. Dose Limiting Toxicities (DLT) at baseline (BL), week 2, 3, 4 and 5
2. Adverse Events and Adverse Reactions (AE/AR) at BL week 2, 3, 4 and 5

Part 2:

1. EULAR and ACR20 response rates at screening, BL, week 2, 3, 4, 7, 10 and within 5 days of final dose
2. Macrophage number in the sub lining layer of synovium at BL and week 12
3. MRI (Rheumatoid Arthritis MRI Scoring System (RAMRIS)) at pre BL and week 12

## **Key secondary outcome(s)**

Part 1:

1. Drug PK parameters and PD biomarkers in peripheral blood at BL and week 4

Part 2:

1. Drug PK parameters and PD biomarkers in peripheral blood at BL and week 12
2. PD biomarkers in synovial tissue at BL and week 12
3. Fatigue questionnaire at screening, BL, week 2, 3, 4, 7, 10 and within 5 days of final dose
4. Urinary metabolomics at screening, BL, week 2, 3, 4, 7, 10 and within 5 days of final dose
5. Rheumatoid factor (RF) and anti-CP status at screening and within 5 days of final dose
6. Optional PET scan pre BL and within 10 days post week 12 visit

## **Completion date**

31/12/2023

## **Eligibility**

### **Key inclusion criteria**

Current inclusion criteria as of 11/08/2017:

1. Rheumatoid arthritis fulfilling the 1987 ACR or 2010 ACR/EULAR criteria
2. Age 18 years and over
3. At least 6 months' disease duration
4. ACR Functional Class I-III
5. DAS28  $\geq 3.2$  (for Part 1 only)
6. DAS28  $\geq 4.0$ , with clinical synovitis in at least three joints, at least one of which is a joint amenable to ultrasound-guided synovial biopsy (knee, elbow, ankle, wrist, MCP or PIP joint) (for part 2 only)

7. Currently taking anti-TNF as part of standard clinical care, and have received anti-TNF therapy for at least 3 months upon entry to the study
8. Anti-TNF may be administered as either monotherapy or with background conventional DMARDs. Permitted background DMARDs are methotrexate, sulphasalazine and hydroxychloroquine, either alone or in combination, at stable dose(s) for  $\geq 4$  weeks prior to baseline visit
9. Stable dose of non-steroidal anti-inflammatory drug (NSAID) or corticosteroid (prednisolone  $\leq 7.5$ mg) for  $\geq 4$  weeks
10. No intramuscular glucocorticoid administration in the 4 week period prior to baseline visit
11. Willing and able to undergo MRI scanning on two occasions. (For Part 2 only)
12. Willing to undergo ultrasound guided synovial biopsy on two occasions (under local anaesthetic). (For part 2 only)

Previous inclusion criteria:

1. Rheumatoid arthritis fulfilling the 1987 ACR or 2010 ACR/EULAR criteria
2. Age 18 years or above
3. At least 6 months disease duration
4. ACR Functional Class III
5. DAS28 =4.0, with clinical synovitis in at least three joints, at least one of which is a joint amenable to ultrasound-guided synovial biopsy (knee, elbow, ankle, wrist, MCP or PIP joint). (For part 2 only).
6. Currently taking anti-TNF monotherapy as part of standard clinical care and have received anti-TNF therapy for at least 6 months upon entry to the study as per NICE guidelines.
7. Willing to undergo ultrasound guided synovial biopsy on two occasions (under local anaesthetic). (For part 2 only).
8. Stable dose of non-steroidal anti-inflammatory drug (NSAID) or corticosteroid (prednisolone =7.5mg) for =4 weeks.
9. No intramuscular glucocorticoid administration in the 6 week period prior to baseline visit.
10. Willing and able to undergo MRI scanning on two occasions (Part 2 only).

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Total final enrolment**

15

**Key exclusion criteria**

Current exclusion criteria as of 11/08/2017:

1. If patients were previously taking leflunomide a minimum period of 20 days must have

- elapsed between the last dose of leflunomide and the first dose of IMP
2. Patients receiving warfarin or other anticoagulation likely to interfere with biopsy procedures (part 2 only)
  3. Use of other investigational medicinal products within 30 days prior to trial entry (defined as date of recruitment into trial)
  4. Serious or unstable co-morbidity deemed unsuitable by PI e.g. COPD, cardiac failure, other significant autoimmune disease
  5. Patients must not drink more than 2 units of alcohol per day and no more than 10 units of alcohol per week during the trial and for a 4 week period after completion of the trial
  6. Known active infection at screening visit or at baseline (except fungal nail infection)
  7. Infection requiring hospitalization or IV antibiotics within 6 weeks prior to baseline
  8. History of recurrent or chronic infection
  9. Recent live vaccination (within 6 weeks of baseline)
  10. Hb<10g/dL; neutrophils< 1.5 x10<sup>9</sup>/L; platelets <100x10<sup>9</sup>/L
  11. Patients taking ketoconazole, voriconazole, erythromycin, clarithromycin.
  12. ALT/AST/ALP>1.5x upper limit of normal
  13. Glomerular filtration rate < 60ml/minute (Cockcroft formula)
  14. Major surgery within 8 weeks prior to baseline or planned within 3 months from baseline
  15. Pregnancy, or women planning to become pregnant within the trial period, or women who are breastfeeding
  16. Females or males of child bearing potential unwilling to use two forms of adequate contraception whilst taking the IMP and for one month afterwards

Previous exclusion criteria:

1. Patients currently taking, and planning to continue, methotrexate, other non-biologic DMARDs or biologic therapies other than anti-TNF therapy. For patients recently receiving non-biologic DMARD therapy at least 8 weeks must have elapsed following discontinuation of treatment prior to enrolment into the current study. If patients were previously taking leflunomide this must have been washed out with cholestyramine or activated charcoal according to leflunomides Summary of Product Characteristics
2. Patients receiving warfarin or other anticoagulation likely to interfere with biopsy procedures (part 2 only)
3. Previous participation in this trial (for Part 2 participants)
4. Use of other investigational medicinal products within 30 days prior to trial entry (defined as date of recruitment into trial)
5. Serious or unstable co-morbidity deemed unsuitable by PI e.g. COPD, cardiac failure, other significant auto-immune disease
6. Patients must not drink more than 2 units of alcohol per day and no more than 10 units of alcohol per week during the trial and for a 4 week period after completion of the trial
7. Known active infection at screening visit or at baseline (except fungal nail infection)
8. Infection requiring hospitalization or IV antibiotics within 6 weeks prior to baseline
9. History of recurrent or chronic infection
10. Recent live vaccination (within 6 weeks of baseline)
11. Hb<10g/dL; neutrophils< 1.5 x10<sup>9</sup>/L; platelets <100x10<sup>9</sup>/L
12. Patients taking ketoconazole, voriconazole, erythromycin, clarithromycin
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14. Glomerular filtration rate < 60ml/minute (Cockcroft formula)
15. Major surgery within 8 weeks prior to baseline or planned within 3 months from baseline
16. Pregnancy, or women planning to become pregnant within the trial period, or women who are breastfeeding
17. Females or males of child-bearing potential unwilling to use two forms of adequate contraception whilst taking the IMP and for one month afterwards

**Date of first enrolment**

01/10/2014

**Date of final enrolment**

20/06/2022

**Locations****Countries of recruitment**

United Kingdom

England

Scotland

**Study participating centre****The Newcastle upon Tyne Hospitals NHS Foundation Trust**

Freeman Hospital

Freeman Road

High Heaton

Newcastle Upon Tyne

United Kingdom

NE7 7DN

**Study participating centre****University Hospital Birmingham NHS Foundation Trust**

Queen Elizabeth Medical Centre

Edgbaston

Birmingham

United Kingdom

B15 2TH

**Study participating centre****NHS Greater Glasgow and Clyde**

Glasgow Royal Infirmary

Castle Street

Glasgow

United Kingdom

G4 0SF

**Study participating centre**

**Barts Health NHS Trust**

Mile End Hospital  
Bancroft Road  
London  
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E1 4DG

**Study participating centre****South Tees Hospitals NHS Foundation Trust**

The James Cook University Hospital  
Marton Road  
Middlesborough  
United Kingdom  
TS4 3BW

## Sponsor information

**Organisation**

Newcastle Hospitals Foundation NHS Trust (UK)

**ROR**

<https://ror.org/05p40t847>

## Funder(s)

**Funder type**

Research council

**Funder Name**

Medical Research Council (MRC) (UK); Grant Codes: MR/L005123/1

**Alternative Name(s)**

Medical Research Council (United Kingdom), UK Medical Research Council, Medical Research Committee and Advisory Council, MRC

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

## Results and Publications

### Individual participant data (IPD) sharing plan

The data sharing plans for the current study are unknown and will be made available at a later date.

### IPD sharing plan summary

Data sharing statement to be made available at a later date

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>		09/03/2021	05/05/2021	Yes	No
<a href="#">Protocol article</a>	protocol	26/06/2020	29/06/2020	Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Statistical Analysis Plan</a>	statistical design and analysis plan	06/07/2021	08/07/2021	No	No