

# Pharmacokinetic investigation into the formation of carbamazepine metabolites and carbamazepine-protein conjugates in healthy volunteers

<b>Submission date</b> 22/10/2014	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 22/10/2014	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
<b>Last Edited</b> 21/09/2021	<b>Condition category</b> Nervous System Diseases	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Carbamazepine is a drug used to treat epileptic seizures and nerve pain. The aim of this study is to test if this drug or its components can bind to proteins within the body and can create allergic reactions for people who are genetically prone to such reactions. We aim to find out the levels of the drug carbamazepine and its components following a single dose of carbamazepine.

### Who can participate?

Healthy men aged between 18 and 55 years.

### What does the study involve?

Participants will be asked to attend the clinical research unit at the Royal Liverpool Hospital. They will be screened for suitability to take part in the study. If suitable they will be asked to return for another visit where they will be prescribed a single dose of carbamazepine. Before taking this dose they will be asked to provide a blood sample and then blood samples will be taken at regular intervals up to 72 hours after taking the drug. Urine samples will also be taken during the 72 hours.

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

There will be no direct benefits to participants. The risks of participating include pain and bruising associated with blood sampling. We will minimise this risk as only healthcare professionals trained in taking blood samples will be allowed to perform these procedures.

### Where is the study run from?

The Royal Liverpool University Hospital (UK).

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

August 2013 to December 2013.

Who is funding the study?  
Medical Research Council (MRC) (UK).

Who is the main contact?  
Dr Vincent Yip  
vyip@liv.ac.uk

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Dr Vincent Yip

**Contact details**  
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## Additional identifiers

**EudraCT/CTIS number**  
2012-004700-35

**IRAS number**

**ClinicalTrials.gov number**

**Secondary identifying numbers**  
13845

## Study information

**Scientific Title**  
Pharmacokinetic investigation into the formation of carbamazepine metabolites and carbamazepine-protein conjugates in healthy volunteers: a non-randomised study

**Acronym**  
PICME

**Study objectives**

Carbamazepine or carbamazepine metabolites are reactive and can bind intracellular proteins that stimulate hypersensitivity reactions in patients with genetic susceptibility.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

18/12/2012, ref: 12/NW/0780

**Study design**

Non-randomised; Interventional; Design type: Not specified, Treatment

**Primary study design**

Interventional

**Secondary study design**

Non randomised controlled trial

**Study setting(s)**

Other

**Study type(s)**

Treatment

**Participant information sheet**

Not available in web format, please use the contact details below to request a patient information sheet

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

Topic: Genetics; Subtopic: Genetics Research and Congenital Disorders (all subtopics); Disease: Genetics Research and Congenital Disorders

**Interventions**

Healthy volunteers will be given a single 400 mg dose of carbamazepine  
Follow Up Length: 1 month(s); Study Entry: Registration only

**Intervention Type**

Other

**Phase**

Not Applicable

**Primary outcome measure**

Pharmacokinetic analyses; Timepoint(s): pre-dose, 15 min, 30 min, 1 hour, 2 hours, 4 hours, 6 hours, 8 hours, 12 hours, 24 hours, 48 hours, 72 hours; Methods: High performance liquid chromatography and tandem mass spectrometry

**Secondary outcome measures**

Not provided at time of registration

**Overall study start date**

24/07/2013

**Completion date**

30/12/2013

## Eligibility

**Key inclusion criteria**

1. Subject is willing and able to give written informed consent
2. Healthy male subjects between 18 and 55 years of age inclusive
3. Subjects body weight is between 50 and 100 kg
4. Subjects body mass index is between 18 and 32 kg/m<sup>2</sup>

**Participant type(s)**

Patient

**Age group**

Adult

**Lower age limit**

18 Years

**Sex**

Male

**Target number of participants**

Planned Sample Size: 8; UK Sample Size: 8

**Total final enrolment**

8

**Key exclusion criteria**

1. Subject is not willing to take part or unable to give written informed consent
2. Subject has clinically significant abnormal medical history or physical exam
3. Subject has history of febrile illness within 4 weeks prior to admission
4. Subject has clinically significant abnormal laboratory test at screening including HBV/HCV/HIV
5. Subject has taken any interacting prescription or non-prescription drug, or dietary supplements within 2 weeks prior to study admission. Herbal supplements must be discontinued at least 4 weeks prior to admission to the clinical research facility
6. Subject possesses either the HLA-B\*1502 or HLA-A\* 3101 genotype
7. Subject has a clinically significant ECG abnormality prolonged corrected QT >450 ms, 2nd or 3rd degree atrioventricular conduction block
8. Subject has known hypersensitivity to carbamazepine or structurally related drugs (e.g. tricyclic antidepressants) or any other component of the formulation
9. Subject with history of bone marrow depression
10. Subject with history of hepatic porphyrias (e.g. intermittent porphyria, variegate porphyria, porphyria cutanea tarda)
11. Subject has taken part on another research study within 90 days of commencement
12. Subject has any condition which in the opinion of the investigator will interfere with the study

**Date of first enrolment**

24/07/2013

**Date of final enrolment**

30/12/2013

## **Locations**

**Countries of recruitment**

England

United Kingdom

**Study participating centre**

**Wolfson Centre for Personalised Medicine**

Liverpool

United Kingdom

L69 3GL

## **Sponsor information**

**Organisation**

Royal Liverpool and Broadgreen University NHS Trust (UK)

**Sponsor details**

Prescot Street

Liverpool

England

United Kingdom

L7 8XP

**Sponsor type**

Hospital/treatment centre

**ROR**

<https://ror.org/009sa0g06>

## **Funder(s)**

**Funder type**

Research council

**Funder Name**

Medical Research Council (MRC) (UK)

**Alternative Name(s)**

Medical Research Council (United Kingdom), UK Medical Research Council, MRC

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

United Kingdom

## Results and Publications

**Publication and dissemination plan**

Not provided at time of registration

2016 results in thesis <https://core.ac.uk/download/pdf/80777101.pdf> (added 19/02/2020)

**Intention to publish date****Individual participant data (IPD) sharing plan****IPD sharing plan summary**

Not provided at time of registration

**Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>		01/06/2021	21/09/2021	Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No