

# Carbon ion boost versus proton boost after radiochemotherapy with temozolomide in patients with primary glioblastoma

<b>Submission date</b> 19/07/2009	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 08/07/2010	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 14/11/2022	<b>Condition category</b> Cancer	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Prof Dr. Jürgen Debus

**Contact details**  
Department of Radiation Oncology  
University Hospital of Heidelberg  
Im Neuenheimer Feld 400  
Heidelberg  
Germany  
69120

## Additional identifiers

**ClinicalTrials.gov (NCT)**  
NCT01165671

**Clinical Trials Information System (CTIS)**  
2009-014668-21

**Protocol serial number**  
CLEOPATRA

# Study information

## Scientific Title

Randomised phase II study evaluating a carbon ion boost applied after combined radiochemotherapy with temozolomide versus a proton boost after radiochemotherapy with temozolomide in patients with primary glioblastoma

## Acronym

CLEOPATRA

## Study objectives

The purpose of the trial is to compare a carbon ion boost to a proton boost delivered to the macroscopic tumour after combined radiochemotherapy (RT) with temozolomide (TMZ) in patients with primary glioblastoma multiforme (GBM). The aim of the study is to compare overall survival as a primary endpoint, and progression free survival, toxicity and safety as secondary endpoints.

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

Ethics Committee of the Medical Faculty of Heidelberg (Ethikkommission der Medizinischen Fakultät Heidelberg) approved on the 2nd of November 2009

## Study design

Randomised controlled phase II study

## Primary study design

Interventional

## Study type(s)

Treatment

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

Primary glioblastoma

## Interventions

Arm A Experimental Arm

Carbon Ion Radiation Therapy as a Boost to the macroscopic tumour

Total Dose 18 Gy E, 6 fractions, 3 Gy E single dose

Arm B Standard Arm

Proton Radiation Therapy as a Boost to the macroscopic tumour

Total Dose 10 Gy E, 5 fractions, 2 Gy E single dose

In both treatment arms, the minimum follow-up will be 12 months after study treatment (for the last patient included). All other patients will be followed until 12 months after the last patient was included or until death.

## Intervention Type

Drug

**Phase**

Phase II

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

Temozolomide

**Primary outcome(s)**

Overall survival during the follow-up phase of at least 12 months (starting with initial diagnosis)

**Key secondary outcome(s)**

1. Progression-free survival
2. Safety
3. Toxicity

**Completion date**

31/10/2013

## **Eligibility**

**Key inclusion criteria**

1. Histologically confirmed unifocal, supratentorial primary glioblastoma
2. Macroscopic tumour after biopsy or subtotal resection
3. Indication for combined radiochemotherapy with temozolomide
4. Prior photon irradiation of 50 Gy to the T2-hyperintense area, resection cavity, areas of contrast enhancement adding 2 - 3 cm safety margin
5. Registration prior to photon RT or within photon RT allowing the beginning of C12 greater than or equal to 4 days after completion of photon irradiation
6. Beginning of study treatment (proton or carbon ion RT) no later than 10 weeks after primary diagnosis
7. Aged greater than or equal to 18 years, either sex
8. Karnofsky Performance Score less than or equal to 60
9. Life expectancy greater than 12 weeks
10. For women with childbearing potential, (and men) adequate contraception
11. Ability of subject to understand character and individual consequences of the clinical trial
12. Written informed consent (must be available before enrolment in the trial)

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Refusal of the patients to take part in the study
2. Previous radiotherapy of the brain or chemotherapy with dacarbazine (DTIC) or TMZ
3. More than 50.4 Gy applied via photon-RT prior to carbon ion RT
4. Time interval of greater than 10 weeks after primary diagnosis and beginning of study treatment (proton or carbon ion RT)
5. Patients who have not yet recovered from acute toxicities of prior therapies
6. Clinically active kidney-liver or cardiac disease
7. Known carcinoma less than 5 years ago (excluding carcinoma in situ of the cervix, basal cell carcinoma, squamous cell carcinoma of the skin) requiring immediate treatment interfering with study therapy
8. Human immunodeficiency virus (HIV)
9. Pregnant or lactating women
10. Participation in another clinical study or observation period of competing trials, respectively

**Date of first enrolment**

01/11/2009

**Date of final enrolment**

31/10/2013

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

Germany

**Study participating centre**

Department of Radiation Oncology

Heidelberg

Germany

69120

**Sponsor information****Organisation**

University Hospital of Heidelberg (Germany)

**ROR**

<https://ror.org/013czdx64>

# Funder(s)

## Funder type

Research council

## Funder Name

German Research Council (Deutsche Forschungsgemeinschaft [DFG]) (Germany) - Klinische Forschergruppe Schwerionentherapie (ref: KFO 214)

# Results and Publications

## Individual participant data (IPD) sharing plan

Not provided at time of registration

## 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="#">Protocol article</a>	results	06/09/2010		Yes	No