dbGaP Authorized Data Access Project Closeout Report

Project #24246 : Glioma Risk Prediction

Project name	Glioma Risk Prediction
Approved user name	Beatrice Melin
Project ID	24246
Institute affiliation	UMEA UNIVERSITY

Initial setup date : 2021-01-15 Last renewal date : 2021-01-19 Closeout date :

Consent Group Information

phs000652.p1 : Cohort-based Genome-Wide Association Study of Glioma (GliomaScan)

Consent Group : 2

Name : Cancer in all age groups, other diseases in adults only, and methods

Abbreviation : c2

DAR# :

Request Date : 2020-01-19 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data is limited to discovery and hypothesis generation in the investigation of the genetic contributions to cancer in all age groups and other diseases in adults only, as well as development of novel analytical approaches for GWAS.

Consent Group : 1

Name : Disease-Specific (Glioma in Adults Only, GSO)

Abbreviation : c1

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data must be related to Glioma in Adults Only. Use of the data is limited to genetic studies only.

phs001319.p1 : International Glioma Case-Control Study

Consent Group : 1

Name : General Research Use

Abbreviation : c1

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data is limited only by the terms of the model Data Use Certification.

Consent Group : 3

Name : Disease-Specific (Glioma, PUB)

Abbreviation : c3

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data must be related to Glioma. Requestor agrees to make results of studies using the data available to the larger scientific community. General methods development research is NOT permitted.

Consent Group : 4

Name : Disease-Specific (Glioma)

Abbreviation : c4

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data must be related to Glioma. General methods development research is NOT permitted.

Consent Group : 5

Name : General Research Use (COL)

Abbreviation : c5

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data is limited only by the terms of the model Data Use Certification. Requestor must provide a letter of collaboration with the primary study investigator(s). The letter of collaboration for this study is a collaborator agreement from the Danish Gliogene study. A blank copy can be found at the end of the study's Data Use Certification Agreement (see dbGaP study page). Requestor must provide this signed form documenting Danish Gliogene study approval. Approval can be obtained by contacting Christoffer Johansen at christof@cancer.dk.

Consent Group : 2

Name : Disease-Specific (Brain Tumors)

Abbreviation : c2

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data must be related to Brain Tumors. General methods development research is NOT permitted.

Consent Group : 6

Name : Disease-Specific (Cancer)

Abbreviation : c6

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data must be related to Cancer. General methods development research is NOT permitted.

Consent Group : 7

Name : Disease-Specific (Glioma and Related Conditions)

Abbreviation : c7

DAR# :

Request Date : 2020-01-15 Last Renewal Date : 2021-01-19 Latest Embargo Date :

Use Limitation : Use of the data must be related to Glioma and Related Conditions. General methods development research is NOT permitted. "Related conditions" are defined as conditions with evidence of genetic relationships to glioma and other malignancies.

Approved Research Use Statement

The objective of the proposed study is to find a model that predict glioma risk based on genotypes. We propose to analyze genotype data from the GICC GWAS study (dbGAP accession phs001319.v1.p1) and the GliomaScan GWAS study (dbGaP accession phs000652.v1.p1) using a novel method for risk prediction. We will embed patients and biomarkers together with diseases in a high-dimensional space. In the simplest model, the dot product of a patient embedding and a biomarker-disease embedding measures the logarithm of the affinity between the two. The multiplicative product of the affinity and the general disease incidence is proportional to the probability that a patient will develop the disease. The two data sets will be analyzed separately. The outcome variable for the study is risk of glioma, which is consistent with the data use limitations for data from the GICC and GliomaScan GWAS studies. Applying novel methods for prediction of risk may advance the understanding of the genetic bases of glioma. Additional conditions of use of the requested datasets include that results should be made available to the larger scientific community. This condition will be met by publishing our results as scientific reports with open access. We also provide a collaboration agreement with the primary Danish Gliogene investigator, thereby fulfilling all requirements for data use. The proposed study will be conducted in a collaboration with Martin Rosvall, professor at the Department of Physics, Umeå University and Chief Scientist of Infobaleen, Umeå, Sweden.

Research Progress

Research Summary

We have applied a novel method for risk prediction to find new genetic variants that increase the risk of developing glioma. Two dbGaP datasets have been included in our analyses: phs001319.v1.p1 (GICC GWAS study) and phs001319.v1.p1 (GliomaScan GWAS study).

Scientific Presentations

Publications

none

Interlectual Properties

Consent Information of Not Described Datasets

Data Security

Approved Users

Name	Institution	Role	Position	Phone	Email
Beatrice Melin	UMEA UNIVERSITY	Principal Investigator	Professor	+46730918028	beatrice.melin@onkologi.umu.se
Sören Berglund	UMEA UNIVERSITY	IT Director or designee	IT security director	0046907865356	soren.berglund@umu.se

Collaborators

Name	Institution	Role	Position	Phone	Email
Tim Anthony	UMEA UNIVERSITY	co-investigator	Student	0046702391973	timpam1995@gmail.com
Christopher Blöcker	UMEA UNIVERSITY	co-investigator	Student	0046702391973	christopher.blocker@umu.se
Andrea Lancichinetti	UMEA UNIVERSITY	co-investigator	Senior research engineer	0046702391973	andrea@infobaleen.com
Martin Rosvall	UMEA UNIVERSITY	co-investigator	Professor	0046702391973	martin.rosvall@umu.se

Additinal Person Who Accessed Data

Name	Institution	Role	Position	Phone	Email
Martin Rosvall	Infobaleen	PI	Chief Scientist		martin.rosvall@umu.se
Andrea Lancichinetti	Infobaleen	Chief Product Officer	Chief Product Officer		andrea@infobaleen.com
Christian Persson	Infobaleen	Chief Technology Officer	Chief Technology Officer		christian@infobaleen.com

Inappropriate Data Use

No incident has occurred.

Reason for Project Closeout

Closeout Reason : not_renewing

Data Distruction

Signing Official

Name	Institution	Role	Position	Phone	Email
Sussi Mikaelsson	UMEA UNIVERSITY	so	Administrator officer	+46 90 7867929	Sussi.Mikaelsson@umu.se

SO Agreed: No